

Project Narrative (Early-Phase)

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Introduction

Children born after the initial onset of the COVID-19 pandemic are now of school age. Their formative years were marked by social isolation, disrupted routines, lower preschool attendance, and increased screen time (Irwin et al., 2022). As a result, many are less prepared for kindergarten than their prepandemic peers, lacking critical school skills and struggling with classroom social dynamics (Copeland et al., 2024). The stress of the pandemic has manifested among these children in heightened aggression, difficulty concentrating, and a greater need for reassurance and security from adults (Ashwin et al., 2022). The national average chronic absenteeism rate almost doubled from 2019 to 2023 (Malkus, 2024). Also, the pandemic has exacerbated educational disparities, affecting children in high-poverty schools in urban, ethnically diverse settings more severely than their wealthier peers (Parolin, 2023). Addressing educational disparities requires urgent action and an early start, focusing on students in early grades. Early grade teachers need evidence-based programs that can simultaneously a) foster safe, healthy learning environments and b) equip students with skills essential for school success. Despite the clear need, there are limited options for programs that effectively address both.

To meet this need, the American Institutes for Research® (AIR®) and Ripple Effects are applying as partners for the U.S. Department of Education (ED) Education Innovation and Research (EIR) **Early-Phase** competition to refine, implement, and evaluate **the Bouncy’s Ready to Learn Resilience Program** (the Bouncy program) with kindergarten and Grade 1 teachers and students from three school districts. This project addresses **Absolute Priority 1** (Demonstrates a Rationale) and **Absolute Priority 4** (Field-Initiated Innovations—Meeting Student Social, Emotional, and Academic Needs) and **Competitive Preference Priority 2** (Addressing the Impact of COVID-19 on Students, Educators, and Faculty). The project is a

strong partnership between a national not-for-profit research organization with a long history of successful completion of ED-funded research (AIR), an innovative leader with extensive experience delivering technology-enhanced social and emotional learning (SEL) programs in high-needs schools (Ripple Effects), and three urban, high-poverty, high-needs school districts.

A. Project Significance

A1. Addresses Disparities in Social, Emotional, and Academic Outcomes

The lack of school readiness among the pandemic generation of children is especially pronounced among those from high-poverty urban schools and high-needs communities. For example, in Joliet, IL, one of our partner districts, only 17% of kindergartners were rated as ready in social-emotional development, literacy, and math, reflecting a national decline in school readiness postpandemic. In the three readiness areas, disparities among racial groups in Joliet were evident: 25% of White, 17% of Hispanic, and 14% of African American students were rated as ready. Prepandemic estimates suggest that one fourth of young children come to school with emotional or behavioral challenges (Vo et al., 2012), with the prevalence potentially rising to 70% in high-poverty, high-minority school districts (Rimm-Kaufman et al., 2000). The pandemic has exacerbated these trends, leading to a notable deterioration in children's behavior in the classroom, especially those learning in urban, diverse settings (Hanno et al., 2022).

Behavioral and emotional challenges and tendencies to act out or shut down often result from the elevated stress associated with adversity, poverty, or unpredictable home environments (Raver et al., 2013). The pandemic's pervasive uncertainty and the health-related fears it engendered have increased anxiety and depression among caregivers, which spill over to children (Pena-Shaff et al., 2023). The lack of stable emotional support at home also can lead to increased clinginess, separation anxiety, and emotional outbursts in children. In addition, low

self-regulation skills are found to lead to the dysregulated, externalizing behaviors that appear most affected by the pandemic because they shape children's ability to focus, control impulses, and switch attention between activities (Coker et al., 2023).

Among the social-emotional skills that have substantial potential to diminish the impact of poverty and adversity on academic growth and achievement, self-regulation is especially crucial because it is linked to approaches to learning and engagement that substantially increase the chances of academic success (Duckworth & Carlson, 2013). Because of its pivotal role as the link between social-emotional and cognitive development, self-regulation is included in the SEL standards for kindergarten in most states that have them and in general learning standards in states that do not separately set social-emotional benchmarks (Eklund et al., 2018).

Though the data on postpandemic readiness among young children are discouraging, there is reason for some optimism. Research highlights the importance of forming attachments outside the family during the early grades, when children can bond with teachers and peers and build strong relationships (Bergin & Bergin, 2009). Strong relationships in classrooms provide fundamental support for further development (Pianta et al., 2014) and buffer the adverse effects of poverty, parental stress, and unpredictable home environments (Raver et al., 2013). Studies of interventions aimed at improving school learning environments demonstrated significant improvements in student academic outcomes (Borman et al., 2003; Hamre & Pianta, 2001), behavior outcomes, and reductions in teacher stress (Brackett et al., 2011). The positive effects were strongest for low-income, low-achieving, and African American children. Direct support to promote social-emotional skills improves behavioral outcomes and academic achievement (Durlack et al., 2011), and the effects were lasting (Taylor et al., 2017). For example, the Promoting Alternative Thinking Strategies program (Kusche et al., 1994) and the Chicago

School Readiness Project (Jones et al., 2013) both emphasized the role of self-regulatory skills in reducing problematic behaviors and improving academic outcomes and were found effective.

A2. Uses Promising Approach to Address Social-Emotional and Academic Needs

To reduce shortcomings in social, emotional, and academic outcomes in the early grades, especially in children with or at risk of behavioral challenges, the Bouncy program features (a) a character-based innovative approach to create a safe and caring classroom environment, (b) intentional, engaging, multi-sensory instructional strategies to teach self-regulatory skills, using developmentally appropriate games and activities, and (c) a training and implementation support system that consists of initial training, written guides, an online platform with demo and training videos, progress monitoring tools, and supplementary materials (e.g., digital storybooks, music videos, games). The anchor of the Bouncy program is Breathing Bouncy the Service Dog, a breathing and talking plush animatronic that supports the integration of self-regulatory skill training, security and attachment, storytelling, and the multi-sensory experience made possible by robotic technology, all while drawing on service dogs' cultural associations with safety, comfort, and protection.

A Character-Based Innovative Approach to Create a Safe and Caring Classroom

Environment. Bouncy the Service Dog is a fictional attachment figure for teachers to nurture a classroom climate that supports children's emotional needs. *Bouncy*, like the big red monster Elmo in Sesame Street shows, is a metaphorically inclusive character that is meant to become a trusted, surrogate attachment figure adopted into the classroom community. A key innovative strategy of the approach is the shared relationship teachers and students can build with *Bouncy* and with each other through storytelling, imaginative play, music and caring for Bouncy.

Teachers can follow the scripted implementation guide and multimedia resources. The

implementation guide includes scripted lesson plans and suggested whole-class, small-group, and individualized activities (see Appendix J10 for lists of program materials). Multimedia resources include downloadable interactive storybooks, music videos, print books, and activity sheets.

Instructional Strategies to Teach Self-Regulatory Skills, Using Developmentally

Appropriate Games and Activities. This component includes six scripted lessons of self-regulation skills coached by the animatronic Breathing Bouncy, making skill training play-based and hands-on. The Breathing Bouncy can teach children breathing exercises through demonstration and model positive self-talk. It sits at a “Bouncy Center,” a designated place in the classroom that is quiet, accessible, and filled with *Bouncy*-themed storybooks and access to Bouncy songs. Breathing Bouncy’s belly goes in and out at a slow-normal respiratory rate for young children, with distinctly audible breathing, providing early learners with kinesthetic cues along with a warm spoken and sung invitation to mirror the slow breathing and switch their brains to a calm state. Such intimate, coregulated breathing contributes to children’s feelings of security, belonging as well as to their self-efficacy about becoming calm and strong. This component is particularly innovative as it offers a practical solution for individual behavioral support without losing instruction time: When a student becomes upset or dysregulated, the teacher can quickly facilitate use of the animatronic by directing the student to the Bouncy Center and quickly resume teaching.

A System of Training, Resources, and Ongoing Support for Implementation. The third component of the program provides flexible, needs-based training and support that is powered by a classroom-subscribed online platform. Prior to receiving the Bouncy program, all teachers will be invited to attend a 2-hour training session to orient them to the intervention’s content, approach, strategies, and support system. During the 12-week implementation period, teachers

will have ongoing, direct access to a Ripple Effects implementation specialist through their online platform for implementation and technical support. In addition, the online platform provides teachers access to lesson plans, the program’s digital instructional elements, progress tracking tools, and a library of implementation resources for continuous learning. The platform’s suite of demonstration videos creates context-specific professional learning experiences for teachers, without requiring the investment of either money or time needed for in-person professional support. Asynchronous offerings allow teachers the flexibility to receive the learning they need when they need it, and the variety of resources saves time by enabling teachers to use the supports most appropriate to their current needs. The online forum gives teachers the opportunity to learn SEL best practices from teachers in similar types of settings.

At the beginning of the 12-week implementation, each school will be assigned an implementation specialist that will provide onsite training on how to use the program effectively. After the initial training, a Ripple Effects implementation specialist will follow up with teachers on a biweekly basis, provide coaching, and guide them to use the online platform for further training or support. Each teacher will have opportunities to engage in two virtual implementation and technology support sessions. To reduce coaching’s resource intensity and make the model cost-effective, Ripple Effects will periodically interface with teachers in the research and development (R&D) cycles to produce coaching videos that feature real teachers and authentic classroom scenarios and will become part of a training and implementation support system.

A3. Builds on but Expands Existing Strategies

A series of small-scale pilot studies evaluated the outcome of different program components as they were developed (e.g., ██████████ et al., 2023a; ██████████ et al., 2023b; ██████████ et al., 2022). Results demonstrate that combining classroom climate promotion and self-regulatory

skill training has promising potential to improve key mediators of achievement among high-needs early learners, including engagement with learning, self-regulation skills, and reduction in disruptive behaviors. Based on preliminary evidence gathered, we expect even more positive effects from the Bouncy program compared to other SEL programs for three main reasons.

First, most SEL programs rely on explicit instruction of social-emotional skills without addressing the importance of building a safe classroom environment for learning. Instead, the Bouncy program focuses on the emotional climate of the classroom to meet the basic needs of children. A single-subject design study of 13 prekindergarten students found preliminary evidence that the program is effective in comforting distressed children and stabilizing their autonomic nervous system to encourage exploration and learning (██████████ et al., 2023b).

Second, in contrast to other SEL programs, the program recognizes the importance of “playing with purpose” and imaginative play as a key instructional mode for early learners. Imaginative play has been found to uniquely improve emotional regulation in young children (Goldstein & Lerner, 2018). Using this approach allows students to develop secure attachments to a fictional character. In a study with 25 high-needs, prekindergarten–Grade 1 children from six schools in different settings, almost all bonded with Bouncy (██████████ et al., 2023a).

Third, most existing self-regulation or other social-emotional skill training overly relied on metacognition (e.g., Bierman et al., 2013). Such an approach may be ineffective for young children because their metacognitive skills are often underdeveloped, and toxically stressed children are further preempted by a fight-or-flight response. By contrast, breathing exercises in the Bouncy program may be more effective because they teach young children to slow down and override an automatic response, a self-regulatory skill that can be acquired over time and with practice. The study conducted by ██████████ and colleagues (2023b) found that the program can

be an effective skill-building tool to reduce disruptive behaviors for early learners who exhibit chronic disruptive behaviors. Teachers reported that children exhibited better self-regulation skills, showed reductions in disruptive behavior, and used “Bouncy Breathing” to self-soothe when stressed.

Fourth, preliminary evidence shows that the program reduces teacher stress and increases their efficacy by freeing teachers from constant behavior management demands and asking teachers to do breathing exercises with students (██████████ et al., 2023a). Teachers reported increased efficacy and reduced stress. As one teacher noted, “Bouncy gives guidelines to follow—that does take stress off my plate.” The breathing animatronic can guide whole-class breathing exercises or provide immediate one-on-one behavioral support, thus reducing teacher burden and stress to manage behavior during instruction. This marks a significant advancement over most SEL programs, which rely solely on teachers to do all the work. By offering teaching assistance, the breathing animatronic addresses stress caused by excessive teacher workloads, potentially improving program implementation and reducing the risk of teacher burnout.

B. Quality of the Project Design

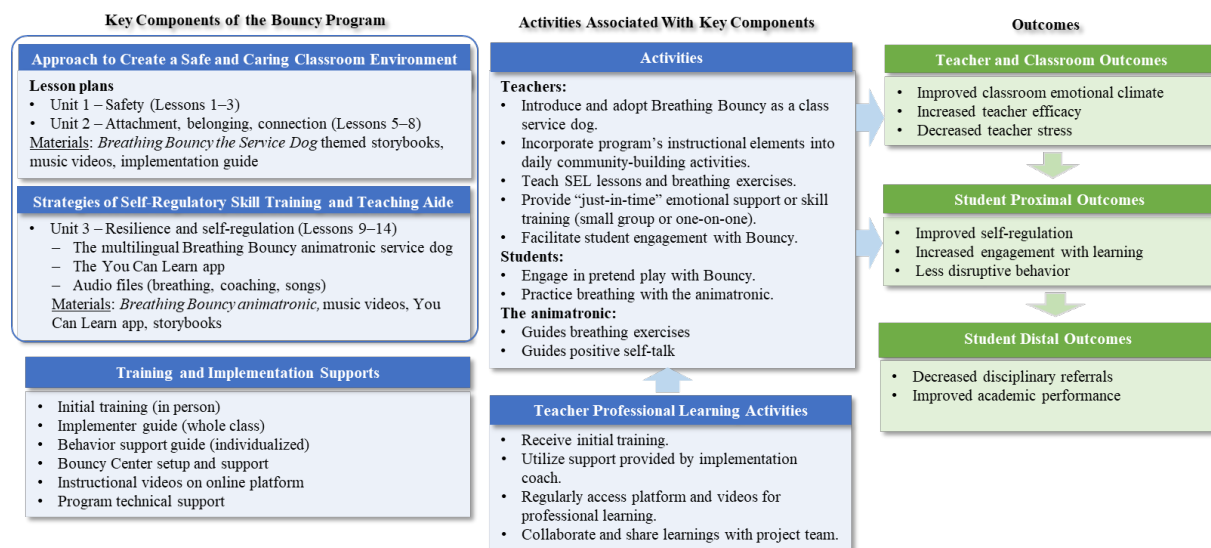
B1. Clearly Articulated Conceptual Framework Underlying the Proposed Project

The conceptual framework (as depicted in Exhibit 1 and elaborated in A2) integrates two of the Science of Learning and Development principles for practice (Darling-Hammond et al., 2020) with the recommendations from two What Works Clearinghouse (WWC) practice guides, *Reducing Behavior Problems in the Elementary School Classroom* (Epstein et al., 2008) and *Preparing Young Children for School* (Burchinal et al., 2022) (see Appendix J2 for identified strategies). The program includes three core components: (a) a character-based approach to creating a safe and caring classroom environment; (b) self-regulation skill training strategies,

assisted by a breathing animatronic; and (c) teacher training and implementation support consisting of initial training, scripted yet flexible lesson plans, written guide, ongoing tech support, a platform with extensive training videos and professional development (PD) resources.

The conceptual framework posits that (a) the first component will increase teacher self-efficacy, decrease stress, and improve classroom emotional climate; (b) the second component will improve student self-regulation skills, increase engagement, and reduce disruptive behaviors; and (c) both components will lead to reductions in disciplinary referrals, improvement in attendance rates, and better academic performance. We expect that the first component will have a positive impact on student outcomes through improved classroom emotional climate because students need to feel safe and connected with others to engage in higher order cognitive processes that are needed for learning. The training and implementation support component will ensure the first two components are implemented with fidelity to produce desired outcomes. When implemented with fidelity, the program will lead to improved outcomes that result from young students gaining self-regulatory skills that enable learning of important academic skills.

Exhibit 1. Conceptual Framework Underlying Bouncy and the Proposed Project



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

This project will accomplish two primary goals: (a) to strengthen the program’s components and (b) to evaluate the program’s efficacy in improving teacher and child outcomes. We expect the project will reach more than 300 teachers and 6,000 K–Grade 1 students across 60 elementary schools in three districts from Illinois, Massachusetts, and Texas over the 4.5-year project period. Under the two goals, the project will accomplish four objectives (see Exhibit 2).

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

Strategies	Outcomes	Project output measures
Objective 1: Expand the teacher training and implementation support system to support implementation and promote sustainability (January 2025–June 2026)		
Strategy 1.1. Create professional development (PD) and demonstration videos.	By December 2025, 10 PD and coaching videos are created (e.g., introduction to Bouncy during circle time and transition, animatronic use demo).	Measure 1.1. At least eight videos are created; at least 80% of teachers in pilot schools agree that Bouncy is feasible to implement and supports students’ needs.
Strategy 1.2. Expand and strengthen the online platform.	Online platform is expanded to include progress monitoring tools,	Measure 1.2. At least 60% of study teachers from BPS, Joliet PSD 86, and Lamar CISD use the platform.
Strategy 1.3. Conduct a pilot study with the expanded training & implementation support system.	Successful delivery of training & support by Ripple Effects and program implementation by teachers.	Measure 1.3. At least 80% of teachers received initial training and two support sessions.
Objective 2: Enhance the breathing animatronic through two R&D cycles (January 2025–June 2026)		
Strategy 2.1. Integrate speech synthesis technologies into the animatronic to increase accessibility.	By December 2025, integrating speech recognition, Natural Language Processing and speech synthesis is completed.	Measure 2.1. All technology integration is completed; at least 80% of teachers agree that the features increase accessibility.
Strategy 2.2. Update software to allow connection with the online platform.	By March 2026, the animatronic can be connected to the online platform.	Measure 2.2 At least 80% of teachers use the online platform to monitor animatronic usage.
Strategy 2.3. Collect, analyze, and regularly share and discuss implementation feedback with Ripple Effects.	Implementation data are summarized and shared, when available, during biweekly AIR/Ripple Effects meetings.	Measure 2.3. All meeting notes summarize feedback from study participants, when data are available.
Strategy 2.4. Refine Breathing Bouncy.	Bouncy is regularly revised, based on pilot data.	Measure 2.4. Two interim memos summarize revisions to Bouncy based on pilot data.
Objective 3: Implement and test the revised Bouncy program for impact (July 2026–June 2028)		
Strategy 3.1. Identify 56 elementary schools to participate in an impact study.	School leaders and teachers agree to participate in the impact study.	Measure 3.1. All signatures are collected on the project memo of understanding to secure 56 elementary 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 Bouncy intervention in all treatment elementary schools.	Bouncy is implemented with a high degree of fidelity in at least 22 elementary schools.	Measure 3.3. All indicators in the fidelity matrix meet adequate thresholds for low (60%), moderate (60%–80%), and high

Strategies	Outcomes	Project output measures
		(80%+) fidelity levels that reflect participation in each program component.
Objective 4: Analyze, report, and disseminate findings about Bouncy (July 2028–June 2029)		
Strategy 4.1. Assess the impact of Bouncy on teacher 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 Bouncy program and lessons learned.	Teachers and state and local leaders are aware of Bouncy.	Measure 4.1. At least two infographics are produced and two conference presentations are given after Bouncy refinements.
Strategy 4.3. Share Bouncy broadly.	School/district leaders interested in improving school readiness and student outcomes in the early grades learn about Bouncy.	Measure 4.2. Representatives from schools and districts attend a virtual event to learn about Bouncy.

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

Expand the Teacher Training and Implementation Support System to Support

Implementation and Promote Sustainability (Objective 1). Teachers from previous pilot studies requested additional PD and support resources that are context-specific and accessible online. The project will develop 10 videos of teachers using Bouncy in whole-class, small-group, and one-on-one settings with students exhibiting disruptive behaviors. The videos will become a teacher playbook to increase implementation fidelity and needs-based implementation supports to scaffold teacher growth opportunities. These resources will be instrumental to future scale-up efforts for the impact evaluation and beyond. In addition, Ripple Effects will improve implementation guidance and rubrics, create additional resources, and integrate progress monitoring and tracking tools. Also, Ripple Effects will develop training and implementation support protocols to ensure that future Ripple Effects implementation specialists deliver high-quality technical support to teachers. AIR will conduct a pilot study (in four schools) to gather teacher feedback on and further improvement to the expanded training and support system.

Enhance the Breathing Animatronic Through Two R&D Cycles (Objective 2). During the first R&D cycle, Ripple Effects staff will integrate speech recognition, natural language processing, and speech synthesis technologies to increase accessibility of the animatronic, which will be trained to respond in real time to children’s cues and in multiple languages. The

enhancement will include software updates that connect the animatronic to the online platform, allowing teachers to efficiently manage settings and monitor progress and dosage, while securely protecting student privacy and data. When these program components have been strengthened, The pilot study will gather in-depth formative data from teachers in the 4 pilot schools using the breathing animatronic AIR to provide feedback on accessibility and usability and make recommendations for continuous improvement.

Implement and Test the Revised Bouncy Program for Impact (Objective 3). We will recruit 56 elementary schools across two cohorts. Based on a multisite school-level randomized controlled trial (RCT), the evaluation will generate evidence of impact on teacher and student outcomes, which have not yet been tested with a rigorous study. The districts are not currently using programs that provide just-in-time emotional supports available throughout the day for all students or programs specifically focused on self-regulation will constitute the business-as-usual comparison condition for the study. While districts have used or are now using approaches that may address behavior or attendance outcomes, these do not explicitly focus on self-regulation or classroom climate nor do they target K–Grade 1 classrooms. Finally, the Bouncy program is distinct from any other program in use in its needs-based teacher implementation support, emphasis on reducing implementation burden, and use of robotic technology.

Analyze, Report, and Disseminate Findings About the Bouncy Program (Objective 4). AIR will conduct analyses of impact and implementation data, develop publications and infographics, and deliver presentations to disseminate the findings. Ripple Effects will share the videos, guides, and other resources and insights gleaned during the implementation process through the online platform with all elementary schools in the partner districts (see Appendix J5 for dissemination strategies).

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

The project is designed to meet the critical needs of underserved K–Grade 1 students enrolled in urban districts and will prioritize schools with underserved populations, defined as schools with the following characteristics: enrollment of ethnic minority students of 50% or greater or enrollment of students who live in low-income homes of 50% or greater. For the purpose of this EIR project, a high-needs student is defined as a child who is performing below grade/age expectations and/or is considered part of an underserved population.

The national poverty- and adversity-related gaps in readiness and other outcomes that exist for early-grade students are magnified in the urban communities of Boston, MA; Joliet, IL; and Lamar, TX, where this project will take place. In preparation for the proposal, the project team met with leaders from each partner district who shared the most urgent needs their districts are currently facing. Upon award of the grant, we will hold additional meetings with district staff to better understand the extent to which Ripple Effects augments the SEL curricula and planned PD opportunities and will designate key staff to work with districts in recruiting schools and onboarding teachers (see Appendix C for letters of support from districts that describe plans to support recruitment and implementation efforts).

Boston Public Schools (MA). The city’s elementary students are 44% Hispanic, 28% African American, 15% White, and 9% Asian. Nearly 70% are economically disadvantaged. Nearly half of BPS students speak a first language other than English. BPS is under state and federal oversight for its failure to serve students with disabilities and English learners. The district also suffers from a postpandemic explosion in chronic student absenteeism, with rates highest among the youngest students. More than one third of BPS elementary students missed 10% or more school days and 12.6% missed 20% or more school days. Most BPS elementary

schools use exclusionary discipline practices, such as in-school and out-of-school suspensions. Black and Hispanic students are more likely to experience all types of discipline.

Joliet Public School District 86 (IL). Joliet is a mid-sized city located 35 miles outside of Chicago. Joliet PSD 86 is a high-poverty, low-performing school district, with 95% of students eligible for free or reduced-price lunch. The district serves a diverse student population, with most students belonging to ethnic minorities: 68% are Hispanic and 20% are African American; 33% are English learners. In fall 2023, only 20% of kindergarten students were rated as ready in math, 33% in language and literacy, and 44% in social-emotional development. Overall, only 17% were rated as ready in all three areas, with disparities among racial groups: 25% of White students were rated ready but only 17% of Hispanic and 14% of African American students were rated ready. Postpandemic, the district also suffers from chronic absenteeism, and the problem is particularly severe in the early grades, with 38% of kindergarten and 33% of Grade 1 students missing 10% or more school days in 2023. Out of 9,508 K–8 students, there were 1,258 exclusionary disciplinary actions in 2023, resulting in significant loss of learning time.

Lamar Consolidated Independent School District (TX). Lamar CISD is the fastest growing school district in the Houston area, receiving an average of more than 2,000 new students annually. Due to the area’s “unprecedented hypergrowth,” seven new elementary schools are opening from fall 2024 to 2026. The district is struggling to meet the challenges of increased enrollment, teacher shortages, overcrowding of schools, and rezoning of school boundaries. District leadership is very excited to bring the Bouncy program to their new and neediest elementary schools. Almost two thirds of elementary students belong to ethnic minority groups: 41% are Hispanic and 22% are African American. Almost half of the district’s elementary students are economically disadvantaged, 20% are English learners, and 43% are

categorized “at risk.” Postpandemic, chronic absenteeism rates have doubled to 19%, with rates highest among Hispanic (23%) and economically disadvantaged students (24%).

C. Quality of Project Personnel

This project brings together a highly qualified interdisciplinary team with complementary expertise from AIR’s project management and evaluation teams and Ripple Effects’ implementation support and technology enhancement teams. Together, the project team has the necessary expertise in project and task leadership, SEL programming, program implementation, technology, and research methods (see Appendix B for résumés and Exhibit J4 in Appendix J4 for the project’s organizational chart).

Adequacy of Resources. AIR is uniquely qualified to lead the overall project, given our strong project management skills, organizational structure, and deep knowledge of rigorous evaluation. 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 42 Investing in Innovation (i3) grants from 2010 to 2023. Ripple Effects is a woman-owned education technology enterprise co-founded in 1996 by child advocate and Emmy award-winning media producer [REDACTED]. Prior to founding Ripple Effects, [REDACTED] was the executive director of Committee for Children, where she originated the Second Step curriculum. [REDACTED] and [REDACTED] co-founded Ripple Effects as an organization that leverages technology to address SEL program implementation fidelity, cultural adaptation, and learning personalization issues.

[REDACTED], *principal investigator*, has more than 14 years of experience leading and conducting education research and evaluation and will lead the project. She will draw upon experience as project director on three EIR evaluations of school-based SEL programs, oversee the coordination of tasks, and monitor the project budget and deliverables. [REDACTED],

recruitment lead, has extensive experience engaging districts and schools, will lead the recruitment effort. [REDACTED], *data collection manager*, will lead data collection as she currently does for another EIR-funded evaluation. [REDACTED], *R&D study lead*, will lead the R&D evaluation, drawing on his 8 years of previous experience as the director of technology and R&D for the University of Chicago. [REDACTED], *impact study lead*, will oversee the impact study, as she did for multiple federally funded projects. [REDACTED], *early childhood and equity expert*, will provide guidance and input throughout the course of the project. [REDACTED] is a chief scientist for early childhood research at AIR and a strong advocate for early childhood equity. [REDACTED], *SEL content expert*, will provide quality assurance reviews related to the evaluation plan and the project's measurement development, analyses, and reporting.

Ripple Effects, our partner for this work, will lead the development and implementation team. [REDACTED], *co-principal investigator*, will lead the Ripple Effects team and is the main contact with AIR. [REDACTED] has 30 years of experience in curriculum development and has overseen partnerships with hundreds of districts nationally to implement the Bouncy program. [REDACTED], *lead product developer*, will lead the development and refinement of Breathing Bouncy animatronic and training videos. She draws on 3 decades of work in educational technology and specializes in process improvement, cross-team collaboration, and agile product development. [REDACTED], *PD expert*, will support the development and refinement of training videos, the implementation guide, and other tools. [REDACTED], *implementation team lead*, a former K–12 educator and district instructional coach, will lead teacher training and manage the implementation support team.

Inclusion and Recruitment of Underrepresented Staff. 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. Consistent with AIR's commitment to advancing standards for diversity, equity, and inclusion, the project team represents a diverse group of individuals with experience working with urban communities and underserved populations. Most key project team members are from traditionally underrepresented groups. We will recruit additional project staff using diversity recruitment resources, including advertising in listservs and virtual postings that target underrepresented groups, such as Historically Black Colleges and Universities and the National Latina/o Psychological Association. We will create job descriptions and interview questions that prioritize lived experience and diverse perspectives, especially those represented in our study schools.

D. Quality of the Management Plan

D1. 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 Ripple Effects 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 also produce high-quality deliverables. Ripple Effects 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 overall management of the grant, AIR's R&D evaluation team will meet regularly with Ripple Effects 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 Ripple Effects will own the intervention

materials. Our management structure (see Exhibit J4 in Appendix J4) allows our team to create and maintain firewalls between the team responsible for program 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.

Exhibit 3. Management Plan, Timeline, and Milestones

Management Plan, Timeline, and Milestones		
Key Milestones	Timeline	Who
Secure Institutional Review Board and district research approval	Jan.–Mar. 2025	AIR
Develop and refine implementation and outcome measures	Mar.–Sept. 2025	AIR
Recruit four pilot schools	Jan.–May 2025	RE
Assemble professional development video production team, develop training videos, and revise implementation support system (including the online platform)	Feb.–July 2025	RE
Assemble technology enhancement team to enhance the animatronic in the first research and development (R&D) cycle	Feb.–Dec. 2025	RE
Further enhance the animatronic in the second R&D cycle	Jan.–Mar. 2026	RE
Recruit and train implementation support staff	Mar.–July 2025	RE
Develop and refine implementation and outcome measures	Mar.–Sept. 2025	AIR
Implement the refined Bouncy with teachers in pilot schools	Sept. 2025– Apr. 2026	RE
Conduct focus groups/interviews; analyze acceptability and feasibility data	Jan.–June 2026	AIR
Plan the randomized controlled trial (RCT) study and Cohort 1 school recruitment	Jan.–July 2026	AIR
Revise the implementation support system to incorporate lessons learned	Apr.–July 2026	RE
Revise the animatronic component based on acceptability and usability data	Apr.–July 2026	RE
Provide initial training, ongoing implementation, and tech support to 14 Cohort 1 treatment schools	Sept. 2026– June 2027	RE
Gather qualitative and quantitative implementation data from Cohort 1 treatment schools	Sept. 2026– June 2027	AIR
Begin RCT by collecting baseline data in all 28 Cohort 1 schools	Sept.–Oct. 2026	AIR
Conduct classroom climate observations in all 28 Cohort 1 schools	Apr.–June 2027	AIR
Collect end-of-year survey and assessment data in all 28 Cohort 1 schools	Apr.–June 2027	AIR
Recruit 28 schools for Cohort 2	Jan.–May 2027	RE, AIR
Gather school record data on consented students in Cohort1 schools	July–Dec. 2027	AIR
Provide Bouncy to K–Grade 1 teachers in 14 Cohort 1 control schools at no cost	Sept. 2027– June 2028	RE
Provide ongoing implementation and tech support to 14 Cohort 2 treatment schools	Sept. 2027– June 2028	RE
Collect baseline survey and assessment data in all 28 Cohort 2 schools	Sept.–Oct. 2027	AIR
Conduct classroom climate observations in all 28 Cohort 1 schools	Apr.–June 2028	AIR
Collect end-of-year survey and assessment data in all 28 Cohort 2 schools	Apr.–June 2028	AIR
Gather implementation data from Cohort 2 treatment schools	Sept. 2027– June 2028	AIR
Provide Bouncy to K–Grade 1 teachers in 14 Cohort 2 control schools at no cost	Sept. 2028– June 2029	RE
Analyze observation, teacher survey, teacher ratings, assessment, and school records data on consented students for both RCT cohorts	July 2028–June 2029	AIR
Disseminate findings through diverse outlets and mechanisms	July 2028–June 2029	AIR, RE

Note. RE = Ripple Effects. The pilot includes four schools in 2025–2026 and the RCT includes 56 schools in 2026–2028.

E. Quality of the Project Evaluation

AIR will conduct an independent evaluation of the Bouncy program that includes both an implementation study and an impact study. For the implementation study, we will document fidelity of the Bouncy implementation and identify factors that may hinder or facilitate implementation. For the impact study, we will examine the impact of the Bouncy program using a school-level randomized design that will meet WWC evidence standards without reservations. The impact study will examine whether, for whom, and under what conditions the Bouncy program impacts (a) teacher self-efficacy, stress, and classroom emotional climate and (b) student self-regulation, engagement, behavior, and academic outcomes. Research questions for the implementation study and impact study are presented in Exhibit 4.

Exhibit 4. Research Questions and Corresponding Analysis

Research questions (RQs)	Data source	Study
RQ 1. To what extent is the Bouncy program implemented with fidelity?	Program records Teacher focus groups Meta data	Implementation study
RQ 2. What are the factors that hinder or facilitate implementation?	Teacher interview/focus groups	Implementation study
RQ 3. What is the impact of Bouncy on teacher self-efficacy, stress, and classroom emotional climate ?	Teacher survey CLASS observation	Impact analysis
RQ 4. What is the impact of Bouncy on student self-regulation, engagement, behavior, and academic outcomes ?	Teacher ratings Direct assessment School records data	Impact analysis
RQ 5. How do teacher characteristics (years of teaching, baseline stress) moderate the impact of Bouncy on teacher outcomes?	Teacher survey School records data	Moderator analysis
RQ 6. How do student characteristics (gender, EL, race, baseline behavior) moderate the impact of Bouncy on student outcomes?	Teacher ratings Direct assessment School records data	Moderator analysis
RQ 7. To what extent is the impact of Bouncy on student outcomes mediated by teacher self-efficacy, stress, and classroom emotional climate ?	Teacher ratings Direct assessment School records data	Mediation analysis

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

The evaluation of Bouncy will consist of four phases. The first is a 6-month planning phase. The second involves an R&D pilot with four schools in 2025–2026 (Pilot Cohort). During the third phase, we will conduct a school-level RCT to evaluate the implementation and impact of the Bouncy program and address the evaluation RQs with two cohorts of schools in 2026–2027 (Cohort 1) and 2027–2028 (Cohort 2). For each of the three cohorts, the Bouncy program will be implemented as a 1-year intervention. The final phase focuses on reporting.

Impact Evaluation Designed to Meet WWC Standards Without Reservations. Three study design features are pivotal for obtaining evidence that is eligible to meet WWC standards without reservations. First, **the study will use a blocked random assignment design that increases the likelihood of baseline equivalence in the analytic sample** between students and teachers within treatment and control schools. Within blocks (districts or clusters of similar schools within districts), AIR will randomly assign schools to treatment and control, with all K–Grade 1 teachers and students in the same schools receiving the same experimental assignment. Schools are the appropriate unit of assignment because teachers who teach the same grades at the same school often share materials and engage in grade-level planning activities. Using school-level randomization, the evaluation can minimize threats to internal validity (such as contamination) that are common in studies employing within-school randomization. Second, **the study will not include late joiners.** We will recruit study teachers prior to school random assignment based on their teaching assignment during the intervention year and will not include any teacher joiners in the impact analysis. In addition, we will collect student consent at the beginning of the intervention year. Only students with positive consent prior to random assignment will be included in the impact analysis. Third, **differential attrition is expected to be low.** AIR and Ripple Effects have established strong partnerships with three school districts to

minimize school-level attrition. 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 for the study to meet WWC standard without reservations. We will offer control schools the Bouncy program for free if they want it after completing the one-year wait period, but only if they participate in the full length of the impact study, which provides an incentive for control schools to continue engaging with the study even if they preferred to receive the program 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. Additionally, as the impact study focuses on the impact of the Bouncy program at the end of the 1-year implementation, teacher turnover and student mobility within the same school year are expected to be low. Response rates are expected to be high because key student outcomes are based on teacher ratings or administrative data.

Adequate Power in Study Given its Large Sample Size. The proposed sample size for the impact study is 56 elementary schools, with a conservative estimate of five teachers¹ and 100 K–Grade 1 students (20 per classroom, 30% with challenging behavior) per school. This sample will be drawn from three urban districts (Joliet PSD, IL; BPS, MA; Lamar CISD, TX (Appendix J1 for characteristics of districts). Assuming school-level attrition of six schools, 20% teacher attrition, and 25% student attrition, we calculated the power for the analytic sample of 50 schools, 200 teachers, and 3,500 students. The study is designed to detect an effect size of 0.15–0.20 standard deviations for student self-regulation and behavior outcomes and 0.16–0.18 for student engagement and academic outcomes (Appendix J9 for power analysis).

Data Collection to Include Multiple Measures and Sources. WWC standards require that

¹ On average, there are two to three classrooms per grade in BPS, three classrooms in Joliet, and four classrooms in Lamar.

outcome measures demonstrate face validity, are reliable, are collected in the same way across conditions, and are not overaligned with the intervention. All proposed measures for the Bouncy evaluation meet these requirements. We will measure teacher outcomes using teacher surveys and classroom observations. We will measure student outcomes using teacher ratings, a direct assessment of self-regulation, and district administrative data. We will collect teacher and student outcome data in the fall (pretest) and spring (posttest) of the implementation year (see Appendix J3 for the project timeline) using measures that are directly related to the intended outcomes and that meet WWC validity and reliability requirements (WWC, 2020). Below we summarize key outcome measures. Detailed description of all measures is in Appendix J6.

Valid and Reliable Measures of Relevant Outcomes. Teacher outcomes. Teacher self-efficacy will be assessed by the *Teachers' Sense of Efficacy Scale* (Tschannen-Moran & Hoy, 2001), a 12-item scale with demonstrated satisfactory reliability ($\alpha = 0.78\text{--}0.85$). Teacher stress will be measured by the 4-item *Perceived Stress Scale* (Cohen et al., 1983; $\alpha = 0.77\text{--}0.78$). We will conduct classroom observations to measure classroom emotional climate. For each study teacher, we plan to video-record two class sessions in the early fall and two sessions in the spring. All video-recorded lessons will be coded using the Classroom Assessment Scoring System (CLASS K-2, Pianta et al., 2008) and by certified CLASS observers. The CLASS K-2 protocol has established convergent and predictive validity and interrater reliability. Student outcomes. Attendance and disciplinary behaviors of all students will be measured by extant data from district administrative records. Self-regulation of all students will be measured by direct assessments using the *Flanker Task Dimensional Card Sort* (DCCS). Student engagement, behavior, and academic outcomes will be measured by teacher ratings of six students with challenging behavior. Student engagement will be measured by the attention subscale of *Teacher*

Observation of Classroom Adaptation-Revised (TOCA-R; Werthamer-Larsson et al., 1991, $\alpha = 0.87$). Behavior will be measured by the aggression subscale of TOCA-R, $\alpha = 0.96$). Academic outcomes will be measured by teacher ratings of *student academic skills in reading and mathematics* (Brown et al., 2023, $\alpha = 0.98$ for math and .96-.97 for reading).

Impact Analyses to Use Appropriate Analytic Strategies. We will use two-level hierarchical linear models (HLMs) to estimate the “intent-to-treat” impact of the program on teacher outcomes and a three-level HLM for the impact on student outcomes to accommodate the nested nature of the data (with students nested within teachers and teachers nested within schools). We will estimate treatment and control differences in outcome measures within blocks, adjusting for residual imbalance in student, teacher, and school baseline characteristics, as appropriate (see Appendix J8 for analytic models). The differences will provide the estimated effect of Bouncy on teacher and student outcomes (RQs 3 and 4).

Using an RCT design, the impact study will **generate rigorous evidence on the effectiveness of the Bouncy program and document differential effects.** The evaluation includes a large sample of students, teachers, and schools from districts of varying needs, and will add to the limited empirical research that exists on SEL programming in the early grades. In addition, the evaluation will assess outcomes using multiple measures and will conduct moderation analysis to assess differential impacts of Bouncy on different groups of participants (students with/without challenging behaviors, ELLs vs not, early career/veteran teachers) to understand for whom and/or under which conditions the program is beneficial (RQs 5–6).

E2. Methods Provide Performance Feedback and Periodic Progress Assessment

The pilot phase (2025–2026) will include all K–Grade 1 teachers and their classrooms in four schools (Pilot Cohort). In this stage, we will test research instruments, finalize indicators of

implementation fidelity, and implement the program components as they are developed and refined. The timing of the pilot will allow us to provide feedback to Ripple Effects so they can make needed improvements before testing the effectiveness of the Bouncy program through the impact study. AIR will work with Ripple Effects to develop an implementation fidelity matrix using a structured process (e.g., Goodson et al., 2014) that defines each core program component, indicators of that component, and criteria for high and adequate implementation. The matrix will include guidance on how to combine data from individual indicators to determine the fidelity of implementation for overall program components.

Implementation Data Collection and Evaluation. To answer **RQ 1**, AIR will use quantifiable indicators to systematically measure implementation fidelity and monitor where implementation expectations are met. From all three cohorts of schools, AIR will use program records (e.g., training records, support session notes), monitoring data of breathing Bouncy use and teacher surveys to describe the level of implementation for each indicator at the school level and against the implementation fidelity matrix developed in the pilot phase (see Appendix J7). To answer **RQ 2**, AIR will gather data from teacher interviews and focus groups to understand their perceptions of the utility of program components, identify factors that may hinder or facilitate implementation, and identify areas for improvement. AIR will conduct 10 teacher interviews in pilot schools and a total of eight focus groups in Cohorts 1 and 2.

Providing Performance Feedback. The implementation study will provide formative data that offer performance feedback and assessment of progress throughout the duration of the project. AIR will share performance feedback through quarterly feedback meetings with Ripple Effects. For example, information on teacher perception of support could lead to improvements in delivery. AIR will provide feedback reports summarizing implementation data twice during

the pilot year and once per year in subsequent years.

Periodic Assessment of Progress Toward Outcomes. In addition to the implementation analyses, we will assess interim progress toward study outcomes periodically. The four interim reports (2026–28) will include preliminary analyses of impacts on teacher and 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, the Bouncy program includes three key components: (a) character-based approach to promote classroom climate, (b) self-regulatory skill training strategies, and (c) teacher training and implementation supports, which includes initial training, check-in sessions over the 12-week implementation period, and an online PD system. Together, these components are theorized to improve teacher efficacy, reduce stress, and improve classroom climate, which are mediators and in turn will improve student self-regulatory skills, engagement, academic performance, and reduce disruptive behaviors (mediation analysis, RQ 7).

The design will document delivery of program inputs and establish clear and measurable thresholds for adequate implementation. Proposed thresholds for the three key program components are: (a) 80% of teachers integrate *Bouncy* into their classrooms for community building; (2) 80% of teachers teach “Bouncy Breathing” and use the animatronic twice a week; and (3) 80% of teachers participate in initial training and at least one support session and 60% access the online platform weekly. During the pilot, AIR will work with Ripple Effects and pilot schools to establish clear fidelity thresholds for each program component and will identify components needing additional refinement. Then AIR will evaluate implementation fidelity with treatment schools during the two subsequent years using the established thresholds.

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