Project ENGAGE: The Impact of CARE for Teachers on Students' Success

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Introduction

This proposed EIR Mid-Phase project aims to implement, replicate, and take to scale the Cultivating Awareness and Resilience in Education (CARE) professional learning (PL) program, a mindfulness-based emotion skills psychoeducational program for teachers shown to significantly improve student motivation, engagement, and reading competence,¹ and to promote teacher well-being and supportive teacher-student interactions.^{2, 3} The proposed project aligns with EIR Program Priorities and its national significance in its potential to improve teacher wellbeing and capacity to support student learning and improve and address racial disparities in important student outcomes. We outline a strategy to take the CARE program to scale in new educational settings and to replicate and expand previous findings of program efficacy. The proposed project has three primary goals:

Goal 1: Implement CARE PL program in 66 elementary schools in 5 districts: Albemarle County Public Schools (Charlottesville, VA), Charlottesville City Schools (Charlottesville, VA), Jefferson County Public Schools (Louisville, KY), Northampton County Public Schools (Northampton County, VA), and Roanoke City Public Schools (Roanoke, VA).

Goal 2: Achieve high-fidelity implementation of CARE resulting in improved student motivation, engagement, and achievement.

Goal 3: Build capacity of district leaders to sustain the work following the grant period.

A previous study funded by IES (#R305A120180) examined the efficacy of CARE within the context of elementary schools in a high poverty urban setting (Upper Manhattan and the Bronx in NYC). The proposed study plans to extend the context of CARE delivery to include teachers in elementary schools located in smaller cities, suburban, and rural settings.

EIR Program Priorities

The proposed project is fully aligned with the EIR Mid-Phase program, addressing two absolute priorities (AP1 and AP5). The proposed project meets AP1—Moderate Evidence, supported by an IES funded cluster randomized controlled trial in which CARE had significant positive impacts on student engagement, motivation, and reading competence.¹ The project meets **AP5**— Educator Recruitment and Retention by enhancing the ability of districts to retain highly qualified, seasoned, and successful teachers in schools with high needs and/or experiencing a shortage of educators with a proven intervention strategy. The proposed project involves the development and testing of an effective scaling model for CARE, a field-initiated intervention that has been scientifically validated for supporting educator well-being and their capacity to support high need students. The intervention also addresses the difficulties schools have in attracting and keeping teachers, considering the extra demands and challenges teachers have faced during and since the pandemic. CARE improves teachers' psychological functioning and reduces teachers' stress, resulting in observable improvements in the quality of teacher-student interactions (e.g., teachers are more emotionally positive and responsive to students' needs),² and it promotes engagement, motivation, and reading competence,¹ all critical to student success.^{4,5}

A. Significance

A.1 National Significance

The U.S. Department of Education's EIR Program offers an extraordinary opportunity to improve outcomes for students in the nation's lowest-performing schools. Although persistently such schools have experienced years of intensive school improvement planning, many have not shown sufficient progress on student outcomes. In SY 2020–21, 58,974 public schools were eligible for Title I funds⁶ to provide additional academic support and learning opportunities to

help more than 25 million children in high-need schools master challenging curricula and meet state standards in core academic subjects. Progress on these outcomes has been limited, in part, by insufficient motivation and engagement needed for students to be academically successful. We argue that no turnaround or improvement strategy can be optimally successful or sustainable until students are fully engaged and connected to school. Unfortunately, across the U.S., student motivation and engagement in school declines throughout children's education.⁷⁻⁹

Concerningly, student motivation and engagement have been further impacted by the disruptions caused by the COVID-19 pandemic. In one survey of 630 teachers across the U.S., 68% reported that low student engagement was the most widespread problem impeding students' ability to reach grade level expectations since the pandemic.¹⁰ In a second survey of a nationally representative sample of 817 K–12 teachers, 88% reported that their students were less motivated to learn than they were before the pandemic.¹¹ Particularly among students from low-income and/or marginalized backgrounds, the educational disruptions caused by the COVID-19 pandemic have led to disproportionate loss in learning and engagement compared to their wealthier and/or White peers. Indeed, there were large income and racial disparities in online engagement during the pandemic.¹² Predictably, the pandemic declines in engagement portended parallel trends in student achievement years later with disproportionately steep declines among low-income and minority students.¹³

Improving student performance requires us to increase their engagement in learning. Engagement is the active component of motivation, both of which are central to academic achievement: motivation *drives* engagement, and student engagement is the primary mechanism by which student action contributes to their academic success.¹⁴ A systematic review of 35 years of engagement research found that elementary school students who are engaged in what they are

learning score higher in reading and mathematics.¹⁵ Authors emphasize that targeting student engagement in the primary grades is particularly important. Elementary school is a critical period for developing foundational skills, and there is strong evidence that the decline in student engagement that is well-documented in middle and high school initiates during the early elementary school years.¹⁵ Fortunately, both motivation and engagement are highly malleable and are shaped by classroom factors that can be effectively targeted through interventions.¹⁶⁻¹⁸ There is a critical need to evaluate and scale strategies that promote motivation and engagement among elementary school students during this pandemic recovery period.

In studies that examine the factors in education settings that contribute to academic achievement (e.g., funding, class size, teacher qualifications, curriculum), classroom-level factors account for the greatest proportion of student learning gains over and above students' prior performance and family background.^{14, 19, 20} Among these factors, the quality of teacherstudent interactions have an outsized effect on their motivation and engagement.^{15, 21, 22} High quality teacher-student interactions support student behavioral and emotional functioning, their coping with school stressors and support engagement in academics.²¹⁻²³ Students who experience positive interactions with their teachers are more likely to report that their psychological needs are fulfilled, increasing their motivation to persist through challenging work, re-engage after setbacks or failure, and enlist teacher support on academic tasks.²⁶ Thus, motivation and engagement are relational processes that emerge in the context of interactions with teachers,²⁷ reflecting relationally mediated participation in opportunities that are structured by teachers.¹⁶

Education research and policy often address these needs by focusing on supporting teachers and students in low achieving schools in large urban settings. However, teacher stress, declines in student engagement, and corresponding underachievement and racial disparities in education outcomes are also significant problems in smaller cities and suburban and rural settings. In Louisville, KY, for example, 4th grade students in the Jefferson County Public Schools (JCPS) score below the national and state average in mathematics on standardized achievement tests.³⁰ Only one-third of the students in JCPS are White, and the racial disparity in reading performance in the district is greater than in the state or nation, with Black and Hispanic students scoring up to 29 percentage points lower than their White peers. Similarly, although White 4th graders attending Albemarle County Public Schools (ACPS) in Virginia score higher in reading than students in the state, Black and Hispanic students in the district score 31 and 38 points lower than their White peers, respectively - bringing them below the national average.³⁰

Unfortunately, the professional capacity among teachers in many schools is often not sufficient to support the high-quality interactions necessary to optimize these outcomes. Teachers' own social-emotional competence (SEC) is required to cultivate the types of interactions that support student motivation, engagement, and achievement. Unfortunately, teacher stress and burnout can undermine teachers developing or effectively applying those skills throughout the school day and over the school year.⁵ Teacher burnout, in turn, has been shown to undermine their efforts to engage students, and can contribute to low levels of engagement. ^{28, 29}

Prior to the COVID-19 pandemic, teachers reported some of the highest levels of occupational stress among workers in the United States.³¹ The pandemic has had a profound impact on the well-being and mental health of educators, particularly in terms of increased levels of stress.³² The pandemic-induced disruptions to the traditional education systems, such as school closures, the sudden shift to online instruction, and the implementation of new health and safety protocols, presented teachers with unprecedented challenges.³³ The abrupt transition to remote teaching, coupled with the demands of adapting instructional strategies and technologies,

heightened job demands and created additional sources of stress.³⁴ Teachers faced the dual responsibility of addressing the academic and emotional needs of their students while navigating their own personal anxieties and uncertainties.³⁵ Furthermore, the declines in student engagement persist, placing an additional emotional and professional burden on teachers to improve engagement in their classes. The cumulative effect of these stressors may have resulted in elevated levels of psychological distress and burnout among educators. Compared to healthcare and office workers, teachers exhibited a notably higher occurrence of adverse mental health outcomes during the pandemic.³⁶ High levels of stress are associated with likelihood of leaving the profession.^{37, 38} Particularly, Black teachers were more likely to leave than White teachers.

Stress and burnout also contribute to variation in the quality of teachers' interactions with their students. A national study of American classrooms revealed that the quality of interactions offered to young elementary school students is generally low, and even lower for less advantaged students.^{19, 39, 40} The results of our previous research on CARE demonstrated that helping teachers manage stress, develop their SEC, and manage their own well-being can improve student outcomes by improving the observed quality of interactions that teachers have with their students.² When teachers can manage stress, have strong social-emotional skills, and build supportive relationships, they can more effectively provide all students with high quality opportunities to learn in class.^{4, 5} Students who feel connected with their teachers are more likely to feel motivated to engage in learning opportunities in class.^{25, 26} The result is a virtuous (instead of vicious) cycle in which teachers and students engage in classroom teaching and learning in ways that contribute to a productive and prosocial classroom environment.^{5, 23}

A.2 A Promising Strategy

The CARE program is an effective strategy for addressing these issues. CARE is a

comprehensive manualized professional learning (PL) program designed to promote and support

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teachers' SEC and well-being so that they are more effective in engaging and motivating students. Following best practices in adult learning, CARE introduces material sequentially, using a blend of didactic, experiential, and interactive learning processes, including training in: (a) Emotion Skills, (b) Mindfulness/Stress Management, and (c) Caring & Listening Practices (see Appendix J8). In previous studies, CARE involved 30 hours of group instruction, presented as a series of five 6-hour sessions over the course of a school year.

Emotion Skills Instruction. Emotional exhaustion interferes with teachers' ability to provide instructional and emotional support. CARE combines didactic instruction with experiential activities to help teachers understand, recognize, and regulate emotional responses in the midst of the multiple cognitive and emotional demands of the classroom. Teachers learn the neuroscience associated with the stress response. Reflective practices support teachers' recognition of emotional states and their exploration of their habitual emotional patterns, tendencies, and reactivity profile. They learn how negative emotional states can interfere with their perception of students' behavior and activate implicit biases, which can lead to misapprehension of students' intentions and over-reactions, leading to punitive responses and negatively reinforcing cycles of disruption and frustration.

Mindfulness/Stress Reduction Practices. Mindfulness-based practices promote psychological flexibility and the ability to reflect upon one's experiences from a broader perspective, resulting in reduced stress and improved coping.⁴¹ Such strategies reduce automatic, reactive appraisals of student behavior that contribute to emotional exhaustion and support a mental set associated with effective classroom management. CARE introduces mindfulness practices including short periods of silent reflection, body awareness, or breath awareness and how to bring mindfulness into aspects of daily living. Through these activities, teachers bring greater awareness to their work and are more able to modulate their physical/emotional state thus

improving their relationships with students, classroom management, and instructional practices.

Caring and Listening Practices. To promote empathy and compassion, CARE introduces "caring practice" and "mindful listening." Caring practice (also called lovingkindness or compassion practice) involves a silent reflection during which one generates feelings of kindness and compassion by mentally offering well-being, happiness, and peace—to oneself and others. Practiced over time, this activity produces increases in daily experiences of positive emotions, which contribute to greater life satisfaction, and decreased illness and depressive symptoms.⁴²

CARE Delivery Model. CARE was developed by (Project PI) and with support from the Garrison Institute (GI). CREATE is a nonprofit agency that is licensed by GI to deliver CARE. Program materials include a Facilitator's Manual, Participant Workbook, and audio of guided practice for personal use.

Evidence of Efficacy of CARE. After 3 years of development and piloting, in 2009 IES funded a Goal 2 study (R305A090179) to refine CARE program materials and assess its impact on teacher stress and well-being, self-efficacy, and mindfulness among K–5 teachers.⁴³ CARE's efficacy was then tested in a large-scale cluster RCT (R305A140692) involving 224 racially diverse classroom teachers in 36 NYC elementary schools and 5,200 of their students. CARE teachers reported significant improvements in adaptive emotion regulation (ES=.25), mindfulness (ES=.28), and significant reductions in psychological distress (ES=.18) and time-related stress (ES=.20). On the CLASS observational measure of the quality of classroom interactions, CARE teachers demonstrated significantly higher levels of emotional support (ES=.22), positive climate (ES=.23), teacher sensitivity (ES=.23) and productivity (ES=.23).

Marginal effects were found for classroom organization (ES=.19).² Students in classrooms with teachers who received CARE had significantly higher levels of engagement in learning (ES=.10), academic motivation (ES=.08), and reading competence (ES=.06) at the end of the year as compared to controls.¹ The effect sizes for these effects ranged from 0.07 (motivation and reading competence) to 0.12 (engagement). There are no directly comparable studies against which to evaluate the magnitude of these effects. However, given the more distal nature of the tested outcomes and recent empirical benchmarks regarding education related interventions would characterize these as medium sized effects.⁴⁴ A small RCT of a 3-day version of CARE compassion (d =.35), and two of its subscales, common humanity (d =.49) and mindfulness (d =.66).⁴⁵ In addition, CARE participants showed significantly lower average heart rates (d = -0.60). On teacher outcomes, CARE compares favorably to effect sizes of organization-sponsored, occupational stress-reducing interventions (d=.08–.14)^{46,47} and classroom-management interventions that aim to modify student-teacher exchanges (g = .08).⁴⁸

A.3 Potential to Increase Understanding

The proposed project will increase our understanding of teachers' SEC and well-being and their relationships to student engagement, motivation, and academic learning. The project aims to replicate previous findings at a larger scale and in a wider range of contexts than in previous research providing opportunities to examine the impact of CARE in ways that were previously not possible. The scale of the project will allow us to examine outcomes at multiple levels (e.g., individual students and teachers and whole schools), and to examine moderating effects of student demographic factors such as race and ethnicity on study outcomes.

CARE's Impacts in New Contexts. Previous research on CARE focused on the high-

poverty, urban, elementary school context. By implementing CARE in elementary schools in urban (medium sized cities), suburban and rural contexts, we will increase our understanding of CARE's impact on student outcomes in new contexts. We may find that CARE is more or less effective at achieving desired outcomes in some contexts than others.

Supporting Teacher Retention. Teacher attrition is a growing problem and increased dramatically during the COVID-19 pandemic. In previous research CARE significantly reduced teacher psychological distress and increased efficacy in teaching. This project will also track teachers' administrative data to allow us to examine school-level attrition rates over time to examine whether participation in CARE results in teachers more likely to remain in the field.

Costs of CARE at Scale. Previous research estimated the costs for implementing the CARE program at scale to be \$515 per teacher.⁴⁹ This project will include a comprehensive cost effectiveness model to determine the actual costs at scale.

B. Strategy to Scale

The proposed project aims to deliver the 3-day version of CARE to three cohorts of elementary school teachers working in five districts in two states (approximately 680 teachers over the course of the five-year grant period). The project will provide the program and support districts need to establish the capacity to continue delivering CARE to the districts' teachers after the project period by training in-district personnel to be certified as CARE facilitators.

B.1 Barriers to Implementation and Strategies to Address Them

Barriers to CARE Implementation. There are three primary barriers to implementing CARE at a large scale: 1. CARE is time intensive and districts struggle to provide adequate PL time to provide CARE to their teachers, 2. The phone coaching element designed to support

teachers' implementation has been difficult to scale, since it requires multiple trained coaches and it is difficult to schedule, 3. There are a limited number of certified CARE facilitators.

Strategies to Address Barriers. The proposed project will address these three barriers to facilitate scaling as follows: 1. The proposed project will deliver CARE in two full days of inperson training and one full day of remote training, rather than four full days plus a booster as was studied in previous research. Because it is more feasible, the 3-day model has become the standard in the field for CARE program delivery; however, it has not been tested in an RCT to see if it is as efficacious as the original model. 2. To address the challenges of taking the coaching model to scale, the proposed project will develop and test a new strategy involving delivering the coaching content via an online learning management system (LMS) accessed via the web or app to support and monitor teachers' implementation of the skills they learn in CARE. This strategy will allow us to not only deliver the coaching content to the participants asynchronously at a convenient time for the teachers, but it will also provide a way to deliver the participant workbook and the audio recordings of the CARE practices, and to monitor and encourage participant engagement in the coaching content and practices. 3. To address the shortage of certified CARE facilitators, the proposed project will identify and train CARE facilitators-in-training (FITs) at each project site to build local capacity and study new approaches for scaling the facilitator training process. Currently the CARE facilitator training process requires participation in a facilitator training and multiple opportunities for trainees to facilitate CARE programs that are video-recorded and evaluated. We plan to identify and train local CARE facilitators and give them opportunities to deliver CARE to the control group teachers under the project team's supervision to ensure quality and fidelity of implementation.

B.2 Management Plan

The project partners (UVA and AIR) have many years of experience leading large-scale, multiyear, multi-site projects that involved implementing programs with fidelity. For example, the PI recently successfully completed the IES-funded Goal 3 study of CARE and is currently PI of an early-phase EIR-funded project (#U411C190159). Below are details of the timelines and milestones and the teams responsible for accomplishing all tasks.

Project Structure and Communication. The project structure includes an overall Management Team (MT; organizational chart, Appendix J1), an Advisory Board and LEA leaders. will provide overall management as PI and will be responsible for maintaining and adhering to timelines, problem-solving when obstacles arise, and reporting to the DOE-EIR project officer. She will monitor costs to ensure the efficient use of resources. She will be supported in this work by Co-PI and a Project Administrator. The MT will also include and and and and and a Carter (CREATE).

have worked both with UVA and AIR on previous projects. The MT will coordinate all project activities and ensure that they are executed as specified in the project timeline and project plans. This ongoing progress will be tracked against the plan using a project monitoring tool that will align with the Project Objectives and Performance Measures. will convene the MT by bi-weekly calls and the MT will have yearly face-to-face meetings. Each LEA will designate a representative to support activities within the district and provide monthly progress reports to the MT. An Advisory Board will be formed to provide broad oversight to the project and will meet quarterly with the MT.

General Education Provisions Act (GEPA) Requirement. In addition to the elements of

the CARE program that satisfy the requirement of Section 427 of GEPA, we will address potential barriers that may impede equitable access to participation in the project. For example, our recruitment materials will use accessible language and graphics representing diverse populations. The CARE facilitators will be diverse in terms of gender, race, and ethnicity, and we will employ a diverse group of classroom coders who will be randomly assigned to classrooms to minimize coder bias. Finally, the project itself is designed to target racial and ethnic disparities in discipline, engagement, and academic achievement. The scale and diversity of the participating districts will allow us to examine whether schools in which teachers engage in CARE show reduced racial disparities in discipline, engagement, and academic achievement.

B.3 Research Team Capacity

The proposed project requires the combined expertise and effort of experienced partners who share a strong history of collaboration (University of Virginia, American Institutes of Research, and CREATE). The University of Virginia (UVA) meets eligibility requirements as an EIR applicant. Numerous trials of intervention studies that have significantly improved both student achievement and the quality of teachers' classroom practices have been conducted by

and her colleagues who have extensive experience in conducting and coordinating school-based research focusing on teacher development. The American Institutes for Research (AIR), one of the largest education and social science research institutions in the world, will conduct the independent evaluation. UVA is partnering with multiple districts (see letters in Appendix C). The strength of the research team, history of collaboration across all parties will contribute to project success and manage risks that might undermine project success.

CREATE is a non-profit organization that delivers research-tested mindfulness-based SEL programs and has an exclusive license with the Garrison Institute, owner of the CARE IP, to

deliver CARE. UVA will partner with CREATE (see letter of support in Appendix C) who will manage CARE program delivery. In the book of the Bennett Endowed Chair Emeritus at Penn State and founded the Prevention Research Center. He is the Chairperson of the Board of Directors for CREATE. In the been research partners in CARE studies for over a decade. Fidelity monitoring and evaluation of CARE will be conducted by UVA, using the same protocol developed for the Goal 3 RCT (see Appendix J11).

B.4 Dissemination Plan

We will use multiple approaches to disseminate project information. First, we will use a Project ENGAGE website at UVA as a resource for sharing our project milestones, our biographies, and our conference papers and publications. We will update the website regularly to provide information on our progress. Second, we will produce an annual report to share with our partner LEAs. This report will provide important feedback to stakeholders and will apprise readers on the progress of our project. Third, we will present our model and findings at both academic and practitioner-oriented conferences. Fourth, we will publish our findings in academic and practitioner-oriented journals. We will also use UVA and AIR's public relations offices to develop and disseminate press releases. Taken together, we will use practitioner and research venues to ensure a wide distribution of the results of Project ENGAGE to interested audiences.

C. Project Design

C.1 Conceptual Framework

The proposed project is based upon the prosocial classroom model,⁵ which theorizes that teachers' SEC and well-being are critical to their capacity to build supportive relationships with students and to effectively manage the classroom, factors associated with supportive classroom

climate and desirable student outcomes (see Figure 1 in Appendix G). The proposed project's theory of change is outlined in Figure 2 in Appendix G.

The CARE program's key components are emotion skills instruction, mindful awareness, and stress reduction practices, compassion and listening practices, the participant workbook, and the LMS resources serving as an online coaching platform. We will monitor the implementation of the CARE program by video recording trainings and coding adherence, facilitation quality and participant responsiveness to the program using existing fidelity measures (see Appendix J11). We will also monitor participants' use and engagement in the LMS platform. Based upon previous findings,^{1,2} we expect proximal impacts on teachers' social-emotional skills and wellbeing, and teacher-student interaction quality and distal impacts on student engagement, motivation, academic achievement, behavior problem, and attendance outcomes. At the school level, we expect to see overall gains in achievement and teacher retention and reductions in disparities in disciplinary actions, student engagement and motivation, and academic outcomes.

C.2 Project Goals and Objectives

In this section we describe how we will meet the project goals and objectives including specific milestones, teams responsible, and the associated timelines. Table 1 presents an overview of the project goals, objectives, outcomes, and performance measures. Following Table 1 we outline each milestone, the team responsible, and the timeline for each goal and objective.

Strategies	Outcomes	Measures	
Objective 1: Implement CARE PL program in a total of 66 elementary schools in Albemarle County Public Schools (ACPS; Charlottesville, VA), Charlottesville City Public Schools (CCPS; Charlottesville, VA), Jefferson County Public Schools (JCPS; Louisville, KY), Northampton County Public Schools (NCPS, Northampton County, VA), and Roanoke City Public Schools (RCPS, Roanoke, VA).			
Goal 1.a Recruit Schools Reach out to school leaders and share information about the project. Schedule meetings to share information about expectations and answer	66 school leaders agree to partner on the implementation of CARE and participate in data collection for 1 year.	Measure 1.a District and school signatures on project memorandum of understanding (MOU) outlining the benefits	

Strategies	Outcomes	Measures
questions. Recruit a total of 66 elementary schools.		and requirements for participation for 66 schools.
Goal 1.b Implement CARE for all teachers Coordinate with CREATE and schools to schedule 23 CARE PL sessions (with 30 teachers each). Hold 20 CARE sessions.	680 Grade K–5 teachers complete the CARE PL program.	Measure 1.b CARE participant attendance sheets.
Goal 1.c Monitor CARE program delivery CARE PL sessions are video recorded and coded by trained fidelity coders. Facilitators complete fidelity measures after each program day. Teachers complete satisfaction surveys after each program day.	Program facilitators implement CARE PL with fidelity. Teachers report satisfaction with PL programs.	CARE Fidelity of Implementation (FOI) Measures: Measure 1.c.1 CARE Fidelity Rating Form (FRF) Measure 1.c.2 CARE Facilitator Record Sheet (FRS) Measure 1.c.3 CARE Participant Program Evaluation Form
Objective 2. Achieve high-fidelity implen	nentation of teacher CARE skills	
Goal 2.a Support teacher implementation with digital coaching platform Create learning management system (LMS) coaching platform and content. Share access of LMS coaching platform to teachers and monitor use. Objective 3: Build capacity of the district	600 teachers access and participate in the coaching platform. Teachers report satisfaction with the coaching platform. Teachers report use of CARE skills during coaching period.	Measure 2.a. LMS user data Measure 2.b. LMS Coaching satisfaction survey Measure 2.c. LMS user report of CARE skills grant period
Goal 3.a Support continued implementation of CARE PL for school leaders Coordinate with CREATE and schools to schedule CARE Leader PL sessions with district leaders. Hold 2 CARE Leader PL sessions per district.	School leaders understand fundamentals of CARE model including curriculum and PL. School leaders know how to use FOI tools to assess implementation of CARE at their schools.	Measure 3.a CARE Leader Survey
Goal 3.b Support continued implementation with CARE facilitation training for school personnel 30 school personnel identified to become CARE facilitator-in-training (FIT). FITs complete CARE and facilitator training. FITs facilitate with fidelity	30 school personnel are qualified to facilitate CARE with fidelity.	Measure 3.b Summary Score of FOI measures (e.g., average of FRF and FRS)

Objective 1 Milestones, Teams Responsible, Timeline

Objective 1: Implement CARE PL program in 60 elementary schools located in five districts in

Charlottesville, VA, Louisville, KY, Northampton County, VA, and Roanoke, VA.

Table 2 shows the process and timeline to implement CARE. In Spring 2024, AIR will secure approval from their IRB and all of the LEAs' research review boards. LEA leaders will work with the project teams to recruit schools. The project will then proceed as follows:

Pilot (Years 1–2): A sample of 6 elementary schools from the participating LEAs will be selected to participate in a pilot to implement and evaluate our proposed scaling strategies. Approximately 80 Grade K–5 teachers from these schools will participate in CARE during the Fall 2024 and Winter 2025. CARE programs will be assessed for fidelity of implementation.

Cohort 1 (Years 2–4): We will select a sample of 30 elementary schools from all participating LEAs. For half of these schools selected at random, Grade K–5 teachers will either receive CARE in Fall 2025 and Winter 2026 or will be in the waitlist control group that will receive CARE in Fall 2027 and Winter 2028 taught by a local facilitator-in-training. CARE programs will be assessed for fidelity of implementation.

Cohort 2 (Years 3–5): We will select a sample of 30 elementary schools from all participating districts. For half of these schools selected at random, Grade K–5 teachers will receive CARE in Fall 2026 and Winter 2027 or will be in the waitlist control group that will receive CARE in Fall 2028 and Winter 2029 taught by a local facilitator-in-training (FIT). CARE programs will be assessed for fidelity of implementation.

For the pilot and each cohort, we will begin by presenting information about CARE to leaders of schools assigned to receive CARE. This meeting will be followed by a teacher orientation to provide information about the project, the CARE program, and how training and support will be provided.

Fidelity monitoring. The UVA team will manage CARE program fidelity monitoring.

Attendance will be monitored and anonymous post-CARE evaluation forms will be collected and submitted to CREATE and the management team (MT). The CARE Implementation Monitoring Materials (Appendix J11) will be employed to monitor the quality and fidelity of the CARE programs. An implementation report will be presented to the MT at the conclusion of each training period. Coders will receive instruction on the coding manual and trained using videos that illustrate both "exemplary" and "non-exemplary" examples of instruction. All CARE programs will be video recorded and a random selection of 25% of programs will be coded. Two coders will independently rate implementation (quality of facilitation, adherence to manualized facilitator activities, meeting participant objectives) and coders will be randomized across trainings to minimize coder bias. Coder interrater reliability will be calculated, and disagreements will be resolved by consensus with support from the coding supervisor. The outcome evaluation will be monitored through an ongoing report provided by AIR to the MT. All reports will compare completion rates of the data collected against study targets.

Goal	Milestone	Team(s)	Dates
1.1	IRB and districts' research approvals secured	AIR	Spring 2024
1.1	School principals confirm school participation	LEAs, UVA, AIR	Spring 2024 - Fall 2025
1.1	Pilot schools identified	UVA, AIR	Spring 2024
1.2	Pilot Grade K–5 teachers from all pilot schools complete CARE	CREATE	Fall 2024, Winter 2025
1.2	Cohort 1 Grade K–5 teachers from treatment schools complete CARE	CREATE	Fall 2025, Winter 2026
1.2	Cohort 2 Grade K–5 teachers from treatment schools complete CARE	CREATE	Fall 2026, Winter 2027
1.2	Cohort 1 Grade K–5 teachers from control schools complete CARE	CREATE/LEA	Fall 2027, Winter 2028
1.2	Cohort 2 Grade K–5 teachers from control schools complete CARE	CREATE/LEA	Fall 2028, Winter 2029*
1.3	Pilot CARE program sessions are assessed for fidelity	UVA	Fall 2024, Winter 2025

Table 2 Objective 1 Milestones, Teams Responsible, Timeline

Goal	Milestone	Team(s)	Dates
1.3	Cohort 1 CARE program sessions are assessed for fidelity	UVA	Fall 2025, Winter 2026
	Cohort 2 CARE program sessions are assessed for fidelity	UVA	Fall 2026, Winter 2027

*After the grant period, facilitators will present booster sessions without project supervision.

Objective 2 Milestones, Team Responsible, Timeline

Objective 2: Achieve high-fidelity implementation of teacher CARE skills.

Table 3 represents the process and timeline to monitor fidelity of teachers' implementation of

CARE skills.

Table 3 Objective 2 Milestones, Team Responsible, Timeline

Goal	Milestone	Team(s)	Dates
2.1	Content for the learning management system (LMS) is uploaded	CREATE/UVA	Spring 2024
	CARE LMS is made available to Pilot teachers and monitor participation and engagement in CARE coaching activities and practices	CREATE/UVA	Fall 2024, Winter 2025
2.1	CARE LMS is made available to Cohort 1 treatment teachers and monitor participation and engagement in CARE coaching activities and practices	CREATE/UVA	Spring 2025
2.1	CARE LMS is made available to Cohort 2 treatment teachers and monitor participation and engagement in CARE coaching activities and practices	CREATE/UVA	Fall 2025, Winter 2026
2.16	CARE LMS is made available to Cohort 1 control teachers.	CREATE/UVA	Fall 2027, Winter 2028
2.8	CARE LMS is made available to Cohort 2 control teachers.	CREATE/UVA	Fall 2028, Winter 2029*

*After the grant period LMS will continue to be available for district use.

Objective 3 Milestones, Team Responsible, Timeline

Objective 3: Build capacity of the district leaders to sustain work following the grant period.

In this section, we explain the objectives and performance measures associated with each of these goals. Table 4 illustrates the Goal 3 process and timeline. From the outset, school leaders will participate in annual CARE Leader PL programs to learn the fundamentals of the CARE model including curriculum and teacher PL and how leadership can support implementation and sustainability with fidelity. After the first CARE Leader PL sessions, with the support of the MT,

participating districts will identify school personnel who may be qualified to become CARE facilitators-in-training (FITs). These individuals will engage in CARE FIT training during the project by first participating in the CARE program, then attending a CARE FIT training, then cofacilitating with a certified CARE facilitator, and then independently facilitating a program. CREATE offers site licensing that allows districts to continue to provide CARE independently at a reduced cost, enhancing sustainability. The districts will present the last session of the control group trainings independently (Winter 2029) after project completion.

 Table 4. Objective 3 Milestones, Team Responsible, Timeline

Goal	Milestone	Team(s)	Dates
3.1	Pilot school leaders participate in CARE Leader PL sessions	CREATE	Spring 2024
3.2	Pilot FITs are identified	LEAs	Spring 2024
3.2	Pilot FITs complete CARE program with pilot teachers	CREATE	Fall 2024, Winter 2025
3.1	Cohort 1 school leaders participate in CARE Leader PL sessions	CREATE	Spring 2025
3.2	Cohort 1 FITs are identified	LEAs	Spring 2025
3.2	Cohort 1 FITs complete CARE program with Cohort 1 treatment teachers	CREATE	Fall 2025, Winter 2026
3.2	Pilot and Cohort 1 FITs complete the CARE Facilitator Program	CREATE	Spring 2026
3.1	Cohort 2 school leaders participate in CARE Leader PL sessions	CREATE	Spring 2026
3.2	Cohort 2 FITs are identified	LEAs	Spring 2026
3.2	Cohort 2 FITs complete CARE program with Cohort 2 treatment teachers	CREATE	Fall 2026, Winter 2027
3.2	Cohort 1 FITs co-facilitate Cohort 2 CARE program as interns	CREATE	Fall 2026, Winter 2027
3.2	Cohort 2 FITs complete CARE Facilitator Program	CREATE	Spring 2027
3.2	Pilot and Cohort 1 FITs present CARE to Cohort 1 control group teachers under supervision	LEA/CREATE	Fall 2027, Winter 2028
3.2	Cohort 2 FITs co-facilitate CARE to Cohort 1 control group teachers as interns	LEA/CREATE	Fall 2027, Winter 2028
3.2	CARE program for Cohort 1 control group teachers is assessed for fidelity	UVA	Fall 2027, Winter 2028
3.2	Cohort 2 FITs present CARE to Cohort 2 control group teachers under supervision	LEA/CREATE	Fall 2028, Winter 2029*
3.2	CARE program for Cohort 2 control group teachers is assessed for fidelity	LEA	all 2028, Winter 2029*

*After the grant period facilitators will present booster session without project supervision.

C.3 How Project Will Address Teacher and Student Needs

Teachers experience high occupational stress, which can interfere with their capacity to engage

in supportive interactions with their students, effective classroom management strategies, and deliver instruction effectively.⁵ These high levels of stress were exacerbated by the COVID-19 pandemic. As a result of participating in the CARE program, we expect teachers will learn strategies to support their own SEC and well-being evidenced by reductions in psychological distress and increases in effective emotion regulation and well-being. This should result in improvements in teacher-student interactions and improvements in student learning. When teachers can manage stress, have strong social-emotional skills, and can build supportive relationships and high-quality interaction with students, they can be more effective in creating a supportive learning environment and supporting students' outcomes.⁵

D. Project Evaluation

D.1. Evidence That Meets WWC Standards Without Reservations

AIR will conduct an independent evaluation to answer nine research questions (RQs) about the impact of CARE on teachers, students, and schools (RQs 1–6); the implementation of CARE's scaling strategy (RQs 7 and 8); and the cost-effectiveness of CARE (RQ9; see Exhibit 5). We propose to address these RQs using a blocked school-level cluster randomized controlled trial (RCT) that will collect valid and reliable data on relevant outcomes so that our findings will meet the What Works Clearinghouse (WWC) standards without reservations.

 Table 5. Research Questions and Corresponding Analysis

Research questions (RQs)	Analysis
RQ1. What is the impact of CARE on the quality of teacher interactions with students and on teacher SEC, well-being, and retention?	Impact study
RQ2. What is the impact of CARE on student engagement, problem behavior, and academic outcomes?	Impact study
RQ3. What is the impact of CARE on school climate?	Impact study
RQ4. To what extent is the impact of CARE on teacher SEC, teacher well-being, and the quality of teacher interactions with students moderated by teacher and school characteristics?	Moderator analysis

RQ5. To what extent is the impact of CARE on student outcomes moderated by student, teacher, and school characteristics?	Moderator analysis
RQ6. To what extent is the impact of CARE on student outcomes mediated by teacher SEC, teacher well-being, and the quality of teacher interactions with students?	Mediation analysis
RQ7. To what extent is the CARE program and its scaling strategy implemented with fidelity?	Implementation study
RQ8. What are the factors that hinder or facilitate the implementation and scaling of CARE?	Implementation study
RQ9. What are the monetary costs of implementing CARE in schools and the cost- effectiveness of CARE for student outcomes?	Cost-effectiveness study

Evaluation Design. The AIR team will conduct a multisite school-level RCT with three successive cohorts of elementary schools. The pilot cohort (2024–25) will include six schools and will provide initial implementation data to address RQs 7 and 8 and to inform refinement of the CARE program for at-scale implementation in the two later cohorts. The at-scale implementation of CARE (2025/26–2026/27) will occur across two cohorts of 30 schools each that will comprise our analytic sample. Within each cohort, schools will be randomly assigned to treatment or control within blocks (i.e., districts and groups of schools within districts, see Appendix J2 for district characteristics), with teachers and students in the same schools receiving the same experimental assignment. Schools are the appropriate unit of assignment, because CARE will be delivered in group sessions to teachers and administrators including principals, and a key scaling strategy of the current project is to establish a CARE leadership team at the school (versus relying on external providers to guide the work). By conducting school-level randomization, the evaluation can minimize threats to internal validity such as contamination that are common in studies using within-school randomization. The impact sample will provide sufficient power for detecting the impact of CARE on all outcomes (see p. 26 for power).

All schools participating in the evaluation will be public elementary schools serving high proportions of high-need students. Each study school must meet at least one of the following eligibility criteria: (a) It is eligible for schoolwide Title I or (b) at least 40% of its students are

eligible for free or reduced-price lunch. Teachers in the two cohorts of our analytic sample of schools will receive the 1-year intervention in 2025–26 or 2026–27. Schools assigned to the control condition will receive the CARE program provided by district CARE facilitators after completing a 1-year wait period. Teachers in both treatment and control schools will participate in their districts' normal professional learning requirements and opportunities, but teachers in treatment schools also will participate in CARE.

Outcome Measures. The AIR team will use (a) a K-5 teacher survey, classroom observations, and district administrative data to measure teacher outcomes, (b) teacher ratings of K-5 students and district administrative data to measure student outcomes, and (c) an anonymous survey administered to K-5 teachers and Grade 3–5 students to measure school climate outcomes (see Appendix J3 for the data collection schedule). AIR will pilot-test all instruments with pilot schools to evaluate the reliability and validity of the adapted measures using Rasch analysis.⁵⁰

Teacher Outcomes. There are five key teacher outcomes: teacher SEC, well-being, teacher retention, and the quality of teacher interactions with students. *Teacher SEC* will be measured by the Emotion Regulation Questionnaire⁵² and the Mindfulness in Teaching Scale.⁵³ *Teacher well-being* will be measured by the eight-item Patient Health Questionnaire depression scale (PHD8), the seven-item Generalized Anxiety Disorder scale (GAD-7), the Job Satisfaction with Current Work Environment scale⁵⁴, and other wellness measures such as burnout and experiences of stressful events. *Teacher retention* will be measured by the five-item Intent to Leave scale.⁵⁵ *Teacher retention*, defined as a measure of teacher continuation, compares teachers' employment and school assignment in the current school year with those of the next school year and will be based on district administrative data. All teacher-reported measures use Likert-scale

items unless otherwise stated and have established reliability and validity (see Appendix J4).

The quality of teachers' interactions with students will be assessed by classroom observations. For each study teacher, we plan to video-record two class sessions (one English language arts and one mathematics) in the early fall (as baseline) and two class sessions in the spring of the intervention year. All video-recorded lessons will be coded using the Classroom Assessment Scoring System (CLASS, using grade-appropriate protocols)²⁷ and by certified CLASS observers at AIR, and a subset (15%) will be double-coded by independent coders to assess interrater reliability. We will use the overall score as the primary teacher outcomes measure and the domain scores (i.e., Emotional Support, Classroom Organization, and Instructional Support) as secondary measures. Both protocols that we will use have established convergent and predictive validity and interrater reliability.^{56,57}

Student Outcomes. *Student motivation and engagement* will be measured by teacher ratings of students, using 10 items from the academic motivation and engagement subscales from the Academic Competence Evaluation Scales (ACES). Extensive validation studies have established reliability ($\alpha = 0.90$ and above) for the ACES total and subscale scores.^{58,59} *Student behavior* (attention and aggression) will be measured by the Teacher Observation of Classroom Adaptation-Revised (TOCA-R).⁶⁰ These measures have established content and predictive validity. *Student academic achievement* data will be gathered from district administrative records. We will use students' scores on standardized state assessments in mathematics and English language arts. Because the study involves multiple grade levels and assessments from two states, we will convert scaled scores to *z* scores separately for each grade and state using the statewide means and standard deviations. We also will collect student demographics (e.g., gender, ethnicity, English learner status) as well as student attendance and discipline data.

School Climate Outcomes. In the spring of the follow-up year for each impact cohort, an anonymous survey will be administered to staff and students to measure the impact of CARE on school climate. The Organizational Health Inventory for elementary schools (Collegial Leadership, nine items; Teacher Affiliation, eight items; $\alpha = 0.94$ for both subscales)⁶¹ will be used to measure perceptions of the quality of relationships in school as a key measure of school climate. In addition, the Panorama School Climate Survey (Grades 3–5 version) will be administered to measure student perceptions of the overall social and learning climate of the school. All Panorama student survey scales have a reliability of at least 0.70.⁶²

This impact evaluation is designed to meet WWC standards without reservations for three reasons: First, the study will not include late joiners. We will identify study teachers before 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, students will be recruited and consented within the first 6 weeks of the intervention year, and the study will not add any student late joiners in impact analysis. Second, attrition at the school level is expected to be low. UVA has established strong partnerships with participating districts and will provide resources for district staff to support school engagement to minimize school-level attrition. Also, UVA will train local CARE facilitators to provide CARE to the control schools after the implementation year to reduce school-level differential attrition. In addition, given that CARE is a 1-year program, teacher turnover and student mobility within the same school year are expected to be low. The evaluation team has allocated extensive data collection and follow-up support and generous incentives to minimize teacher-level attrition. However, due to the historically low rates of school staff participation in surveys post pandemic, we recognize that it may be challenging to secure high response rates for some of the teacher and student outcomes.

In the event of high attrition at the school level, **the study's blocked random assignment design increases the likelihood of baseline equivalence in the analytic sample** on key blocking variables between treatment and control schools such as district or groups of schools within district. To check for baseline equivalence at the teacher and student levels, AIR will collect comprehensive school-, teacher-, and student-level baseline data and have built-in resources for extensive follow-ups including staff time and travel. Final impact estimates will control for baseline characteristics (including any baseline differences) to improve the precision of the impact estimates. Even if attrition rates rise, the study will use statistical techniques such as matching to establish baseline equivalence and meet WWC standards without reservations.

The study has adequate power with a large sample size. Accounting for attrition, we have conservatively estimated, after accounting for attrition, that the analytic sample includes eight K-5 teachers and 160 K-5 students per school in 56 schools in the analytic sample; that is approximately 448 teachers and 8,960 students. The study can detect an effect size of 0.15–0.18 *SD* for K-5 student engagement and behavior, 0.18–0.19 *SD* for Grades 3-5 student academic achievement, and 0.22–0.25 *SD* for teacher outcomes. These effects are similar in sizes to those reported in the earlier studies of CARE.^{1,2} The study also is powered to detect an effect size of 0.16–0.21 *SD* for school climate (see Appendix J7 for power calculation details).

Impact analyses will use the most appropriate analytic strategies. We will use two- or three-level hierarchical linear modeling (HLM) to estimate the intent-to-treat impact of CARE on teacher and student outcomes respectively to accommodate the nested nature of the design. We will estimate treatment-control differences within blocks, adjusting for residual imbalance (see Appendix J6 for analytic model details). The differences will provide the estimated effect of CARE on teacher, student, and school climate outcomes (RQs 1–3). HLM models also will be

used for moderation and mediation analyses (RQs 4-6).

D.2. Generation of Guidance About Effective Strategies Suitable for Replication

Standards for Excellence in Education Research promote the accumulation of scientific knowledge through transformational research that supports replication.⁶³ The proposed evaluation team will demonstrate integrity and transparency by preregistering design and methods. During data analysis, we will dedicate resources and effort so that we will be able to share codebooks that carefully document our data and analyses, and we will make our deidentified data openly available. Future researchers will be able to reproduce our results using our data sets, and detailed information on the context and components of the current study will allow others to build on our work.

The proposed evaluation will generate replicable information about the effectiveness of CARE in four ways. First, the evaluation includes a large and diverse sample of schools in four districts in two states for the findings to be relevant to a broad range of schools. The school sample—including 60 high-need urban, suburban, and rural elementary schools with different geographic and demographic characteristics—will allow us to test scaling strategies across settings and explore how strategies apply across locales and in large or small districts.

Second, we will examine whether impacts differ for various types of teachers, students, and schools through **moderator analyses** (RQs 4 and 5). Moderator analyses can guide future program scaling efforts by identifying settings and populations for which the program is more or less effective. Evidence of differential impacts across groups can indicate the need for further refinements to support future scaling in different contexts. We will include moderators at different levels of analysis to test whether CARE works differently in different places, for different teachers, or with different students. Student-level moderators will include

race/ethnicity, free or reduced-price lunch status, English learner status, special education status, and baseline behavior. Teacher-level moderators will include grade level, years of experience, and baseline classroom engagement. School-level moderators will include state, urbanity, school enrollment, and school demographic composition (e.g., percentage of students from low-income or racially underserved families).

Third, we will collect and analyze **high-quality data on the implementation fidelity** (RQ7) of key program components from multiple sources, including program operations data, teacher surveys, observations, and measures of fidelity of implementation from the previous RCT.² Across data sources, AIR will identify variation in implementation fidelity and explore how such variation is linked to school, teacher, and student characteristics. Documentation of variation is important to understand how the program can be implemented on a broader scale and under conditions that may not be optimal. Also, AIR will use teacher focus groups and school leader interviews asking about individual and organizational factors that may influence implementation, to **identify factors that may hinder or facilitate implementation**. These data will inform future refinement of scaling and strategies to improve replication success (see Appendix J5; RQ8).

Fourth, to **provide information on whether CARE is a cost-effective investment** and to identify ways to make it more cost-effective, AIR will conduct a cost-effectiveness analysis (RQ9) using the Resource Cost Model (RCM) using program cost data provided by UVA and collected from study schools. Focusing on both personnel and nonpersonnel resources, we will populate the RCM using the *CostOut* tool and generate cost-effectiveness estimates based on cost estimates and the results of impact analyses. AIR also will gather information from waitlist control schools to document costs in the business-as-usual condition. These data will help identify program components that are costly, strategize to reduce costs, and provide accurate cost

information for districts to consider when selecting programs and sustaining practices.

D.3. Clear Articulation of Components, Mediators, Outcomes, and Acceptable Implementation

The CARE logic model specifies two major components: (a) training in emotion skills, mindfulness/stress reduction, and caring/listening practices, as well as support for ongoing implementation, and (b) intermediate teacher outcomes (i.e., teacher SEC) that mediate CARE's impact on teacher well-being and the quality of teacher-student interactions, which in turn mediates the program's impact on student outcomes (i.e., student engagement, academic achievement, behavior problems, and absenteeism).

The CARE intervention is delivered in a 2-day initial training session in the fall and a booster session in the spring. Between sessions, teachers will receive virtual support through the learning management system as participants apply emotion skills and mindfulness practices to their teaching. AIR will measure the number of hours of training delivered, the engagement and responsiveness of the teachers attending the training, teachers' ratings of the usefulness of the intervention, and LMS use. An observer will rate the quality of each training session. The analysis will provide evidence of the extent to which activities are implemented and of the variations in implementation across schools. AIR will analyze data from teacher focus groups and school leader interviews to understand their perceptions of the core program components, identify factors that may hinder or facilitate implementation, and identify areas for improvement. Our evaluation establishes clear thresholds for acceptable implementation of CARE itself and the scaling strategy. For the CARE program, acceptable dosage requires that teachers attend two training days and use the support LMS three times during the implementation year. For a school to scale CARE adequately, at least half of its teachers should meet the 2-day training requirement. In the pilot, AIR will test and finalize the proposed thresholds. We will develop

(and refine during the pilot) an implementation rubric based on the results of previous studies of CARE^{1,2} to classify implementation as adequate or not.

D.4. Methods That Provide Performance Feedback and Periodic Assessment of Progress

The evaluation is designed to examine project implementation, assess project progress in achieving its goals and provide iterative feedback for program improvement through frequent collection and analysis of both implementation and outcome data. AIR will conduct analyses at multiple time points, provide interim briefs with key findings (including available impact findings), and jointly interpret the evidence with UVA to support the continuous improvement processes (see Appendix J1 for evaluation team structure). The findings will help UVA learn from successful strategies and identify common or localized problems of implementation that may need intervention. The evaluation team will meet with UVA regularly to share progress and discuss challenges, define model implementation, and engage stakeholders in understanding and interpreting the findings.

AIR will regularly collect implementation fidelity data to document any changes in implementation quality over time. Qualitative data collected during both the pilot and impact phases of the evaluation will allow the evaluation team to closely track the progress of program implementation and shed light on factors that may hinder or facilitate the implementation and scaling of CARE (RQ8). These data will flow into feedback to UVA for program refinement and continuous improvement purposes.

In addition to regular monitoring of implementation fidelity, the evaluation will assess the impact of CARE on key outcomes—for Cohort 1 and then for Cohort 2—as well as on the overall sample. Assessing impact for Cohort 1 will allow us to conduct an interim assessment of the progress that treatment schools are making toward achieving the intended outcomes.