Education Innovation and Research Program: Integrating Curriculum Development and

Professional Development for Kindergarten Readiness

<u>PROJECT NARRATIVE</u>

Table of Contents

Response to EIR Priorities: Absolute Priority 1 – Demonstrates a Rationale; Absolute Priority 2 – Field-Initiated Innovations – General

Integrating Curriculum Development and Professional Development

for Kindergarten Readiness

Absolute Priority 1: Demonstrates a rationale
Absolute Priority 2: Field-initiated innovations - General

Children's Literacy Initiative (CLI) will partner with Elizabeth Public Schools (EPS) and

Newark Public Schools (NPS) to address Absolute Priorities 1 & 2. In doing so, the project

will accomplish three goals: (1) Create a comprehensive, field-tested, high-quality Pre-K

curriculum (English and Spanish) and suite of implementation supports that will be free and

publically available on the CLI website; (2) Achieve high fidelity implementation in 20 centers

resulting in statistically significant improvements in student learning; (3) Build capacity of

district/center leaders[1] to sustain work following grant period. CLI selected EPS and NPS for

two reasons. First, each district contacted CLI to develop solutions to address the needs of

their Pre-K centers. Second, each district has a significant proportion of high-needs students:

LEA	% FRL	% White	% AA	% Hisp.	% ELL	% Asian	% Other
Elizabeth	88%	8%	22%	68%	13%	2%	N/A
Newark	79%	8%	44%	46%	12%	.8%	>1%

A. SIGNIFICANCE

A.1 National significance of the proposed project. Children who are not kindergarten-ready

are *half as likely* to read well by third grade (Early Care and Education Committee, 2006;

Applied Survey Research, 2011) and reading proficiency by 3rd grade is the most important

predictor of high school graduation and career success (Hernandez, 2011). The statistics are

more troubling for low-income families where children, on average, start kindergarten 12-14

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[1] For the purposes of this proposal, we use the term center leader to refer to principal if
classrooms are embedded with a school (we also use center to refer to school in this case).

months behind their peers in pre-literacy and language development, among the most essential domains of school readiness (Barrow & Pithers, 2016). Demographic shifts are augmenting the challenge, with 28% of 3-4 year-old children in Head Start programs speaking a language other than English in the home, 75% of whom speak Spanish (Barrow & Pithers, 2016; National Center for Education Statistics, 2017). Nationally, 22% of children under five live in poverty, meaning over the next five years, 4,250,000 children will already be at a significant educational disadvantage when they enter kindergarten (National Center for Education Statistics, 2016).

Fortunately, there is robust research showing that children who participate in quality Pre-K programs have better health, social-emotional, and cognitive outcomes than those who do not (e.g., Camilli, et. al., 2010; Chambers, Cheung, & Slavin, 2006; Chambers, et. al., 2013; Coghlan, et. al., 2009; Kuhl, 2011; Waldfogel & Washbrook, 2010). Having high-quality Pre-K means having high-quality Pre-K teachers, given teachers are the most important in-school factor impacting student outcomes (Palermo et. al, 2007). Yet, there is also ample evidence that many children do not have access to well-prepared teachers (Lieberman et. al, 2017). In many respects, the nation is facing a work-force development challenge for early childhood educators: only 35 state-funded programs require Pre-K teachers to have a bachelor's degree (Barnett et al., 2017) and most Pre-K teacher programs are not covering the knowledge and competencies needed to work effectively with young children (Putman, Moorer & Walsh, 2016).

Without providing Pre-K teachers with a developmentally appropriate research-based curriculum that provides the pedagogical and content scaffolding teachers need to foster student growth, and without providing them with the hands-on support they need to implement well, the nation will continue to see inequitable results with lasting and detrimental implications for our children, communities, and country.

Children's Literacy Initiative

A.2 The development or demonstration of promising new strategies that build on or are alternatives to existing strategies. CLI's demonstrated impact on Pre-K to 3rd grade teacher practice and student outcomes provides a perfect platform for building on and extending its approach to strengthen the Pre-K field. This project aims to combine CLI's success in embedded professional development for teachers with its curriculum development expertise to create a practical and replicable approach to supporting Pre-K teachers to ensure *all* children in the US are kindergarten-ready.

CLI validated its approach to embedded professional development with Investing in Innovation (i3) support in 2010, resulting in a study of educator practice that meets What Works Clearinghouse standards without reservations and provides strong evidence that CLI's intervention improves classroom environment and educators' literacy practices (Parkinson, Salinger, Meakin, Smith, & Drummond, 2018). These outcomes, in turn, lead to measureable positive effects on literacy skills for high-need students (Parkinson, Salinger, Meakin, Smith, & Drummond, 2018). In 2015, CLI received, as the highest rated applicant, an i3 Scale-up grant.

While these accomplishments highlight CLI's effectiveness improving practice and student outcomes in a K-3 environment, CLI has a growing body of evidence of impact in improving Pre-K practice. CLI has been working to support Pre-K instruction for over 15 years. In 2015, CLI spent 15 months making comprehensive revisions and field-testing its early literacy curriculum, resulting in Blueprint 3.0. The results are promising: after six months of use with 512 students in 25 classrooms, on average, students made twice the expected progress on the Peabody Picture Vocabulary Test (PPVT) (Grossman, Zarrow, & Di Leone, 2017). Research for Action (RFA) is currently conducting a quasi-experimental, mixed-methods evaluation of Blueprint 3.0 implemented in 35 treatment classrooms (compared to 40 classrooms conducting

business-as-usual). While too early to report on student outcomes, early results show the percentage of teachers reporting that they feel extremely knowledgeable about effective instructional practices nearly doubled while responses from teachers in comparison schools remained essentially flat (Research For Action, 2017). Further, the study finds a 10 percentage-point advantage for treatment teachers over control teachers reporting that students are making language and literacy progress after six months of the intervention.

With these results in mind, field-based educators and leaders working with CLI, including the partners in this project (see Appendix C), have encouraged the organization to expand beyond supporting Pre-K teachers in implementing effective early literacy practices to supporting the *full range* of developmentally appropriate early learning standards. CLI selected these districts because of the strong pre-existing relationships it holds with their superintendents[2], both of whom have expressed support for implementing a CLI comprehensive curriculum and supports and will assist in the recruitment of schools for the evaluation. The proposed project will enable CLI to build on and marry its expert Pre-K early literacy curriculum development success with its job-embedded professional development expertise to create an integrated approach to address the nation's urgent need for quality Pre-K. Further, CLI's project will root its systematic integration of curriculum development and professional development in extensive teacher input and field-testing, using insights gleaned from its internal data collection and external evaluation to drive its continuous improvement process. Finally, CLI will contribute to the Pre-K knowledge base by investing in a rigorous evaluation that is too often lacking in the field, testing for implementation fidelity and student learning impact.

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[2]Roger León will become Superintendent of Newark Public Schools on July 1, 2018.

A.3 Demonstrates a rationale - Components that are informed by research or evaluation.

The driving rationale behind this proposal is straightforward and found in CLI's theory of action in Appendix G: to improve student learning, teachers need 1) a developmentally appropriate research-based curriculum, combined with 2) comprehensive, multiple, and ongoing forms of professional development to support implementation fidelity. Below is an examination of the underpinning research base that substantiates this rationale.

A well-implemented, developmentally appropriate curriculum is a critical factor in student academic success (Workman & Ullrich, 2017; Atchison, Diffy, & Parker, 2018). However, not just any curriculum contributes to student achievement; it must be *high-quality* (NCQTL, 2015; Philips et al., 2017; Atchison, Diffy, & Parker, 2018). While there are numerous quality frameworks, The National Center on Quality Teaching and Learning (NCQTL) identifies 13 components that need to be present in an effective curriculum (NCQTL, 2015):

NCQTL Components of an Effective Curriculum	
1. Grounded in child development principles	8. Responsive teaching
2. Evidence-based	9. Supports for individualized instruction
3. Shows effects on child outcomes	10. Culturally and linguistically responsive
4. Comprehensive across learning domains	11. Ongoing assessments
5. Depth for each covered learning domain	12. Professional development opportunities
6. Specific learning goals	13. Family involvement materials
7. Well-designed learning activities	

However, only one of the 16 Pre-K comprehensive curricula reviewed by NCQTL demonstrated evidence of each of the components and only two demonstrated evidence of child outcomes (NCQTL, 2015). In a review of research, Jenkins & Duncan (2017) conclude there is an "overall lack of empirical support for the effectiveness of the two most widely-used Pre-K programs, HighScope and Creative Curriculum." *The field needs better options*.

Children's Literacy Initiative

As an increasing number of districts implement bilingual education to meet the needs of diverse students (Wilson, 2011), CLI's comprehensive curriculum in Spanish will address this field-based need. This is significant because of increasing "[e]vidence that the provision of instruction in Spanish can promote reading and math skill development among these very vulnerable children who are struggling to learn English, especially when they attend high-quality programs" (Burchinal et al, 2012). Blueprint 4.0 will adhere to each of the NCQTL components, in both English and Spanish, with keen attention to the language development supports necessary for all students to be successful.

Having a high-quality curriculum is essential for success, but it must be implemented well to achieve impact (Hamre et al., 2010; Wasik, Bond, & Hindman, 2006). Unfortunately, most teacher professional development is fragmented in focus and of insufficient duration to help teachers implement new strategies (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). One-time workshops, the most prevalent model of professional development, have an abysmal track record for changing practice and improving student achievement (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

In contrast, coaching, or job-embedded professional development, is one of the most powerful tools for improving practice because it enables continuous understanding, interpretation, and application of new strategies (Parkinson, Salinger, Meakin, Smith, & Drummond, 2018; Elish-Piper & L'Allier, 2011; Taylor, Pearson, Peters, & Rodriguez, 2005). Pre-K policy makers, researchers, and advocates are bringing increased attention to the need for high-quality coaching in the Pre-K setting. The most recent Head Start performance standards require all programs to implement a "research-based, coordinated coaching strategy" (Head Start, 2016). Twenty-five states now require coaching for educators in at least one of their

publicly funded early education programs. However, a report from Bellwether Education finds that "the press to meet state requirements for coaching has caused some providers to implement low-quality models. Successful coaching depends on quality coaches who can align their work with classroom curriculum" (O'Keefe, 2017).

While coaching alone is a promising approach to improve student learning and an important opportunity to further apply and study CLI's validated model in Pre-K, there is even greater potential when combined with the additional forms of professional development CLI outlines in its exceptional approach below.

A.4 Exceptional approach to the priorities established in this competition. Beyond being exceptional for building on and integrating its demonstrated expertise and results in curriculum development and professional development for Pre-K, CLI's approach is exceptional in three additional ways. First, the project is exceptional for its deliberate and systematic approach to using field input and feedback throughout the development process. Second, the project is exceptional for its alignment and integration of curriculum and professional development supports in ways that enhance fidelity of implementation. Finally, the project is exceptional for its attention to building leadership capacity to sustain impact beyond the project period.

A.4a An Exceptional Approach to Field-Initiated Development: CLI's development process is based on a three-phase cycle that integrates research-based content and field-based practice.

<u>Draft:</u> Using a framework grounded in early childhood development research, as well as a matrix of state early childhood learning standards with an emphasis on early language development, CLI has augmented its early literacy expertise with a team of leading Pre-K content experts from fields including STEAM (Science, Technology, Engineering, Art, and Math), social-emotional development, English language development, occupational therapy, deaf studies, speech and

language pathology, and arts education (see Appendix B). As CLI and content experts develop the English version of the curriculum, the Associate Director of ELL and Bilingual Services will review lessons and identify those that require modifications for Spanish literacy development. Once all themes have undergone a draft, review, and refine process, CLI will review the entire curriculum to ensure consistency, add centers, create hands-on manipulatives for small group work, and create a Program Guide to help teachers launch their classroom and new curriculum. As with its early literacy curriculum Blueprint 3.0, CLI will draft family engagement resources to extend and support learning beyond the classroom. Details of the development process, timelines, and milestones are found in Section B.

Pilot: Over the course of the development phase, CLI will conduct a total of 20 pilots to understand what works for teachers and students and what proves challenging or absent. Teachers will be selected in collaboration with the district partners. CLI will seek teachers with a range of experiences and educational backgrounds to ensure the curriculum and supports meet the needs of a diverse work force. Additionally, CLI will look for a range of classroom compositions including Spanish-speaking, English-speaking, ELLs, and special-needs students. Teachers will be paid a stipend to participate (centers that participate in the piloting will not be placed in the pool for randomization for the study). Prior to pilot implementation, teachers will be coached on the themes and lessons under review. Teachers will then use the draft lessons in practice. Through classroom observations, focus groups, and interviews, CLI will collect and analyze pilot implementation data to inform ongoing iterations of the curriculum.

Because trainings and ongoing supports are integral aspects of implementation fidelity, not simply an add-on, the CLI development process includes similar feedback loops and work with teachers to create services and supports they find most helpful, while also maintaining a

Children's Literacy Initiative

focus on cost-effectiveness so the intervention can be implemented at scale. As intended by this Early Phase competition, CLI's supports and services will be informed by data gleaned from the pilots, enabling them to further evolve to support sustained implementation fidelity.

Refine: Pilot sessions will inform every aspect of continued development, including content, lesson design, language, layout, student engagement, and understanding. The development process is not linear; rather, areas that were refined will have an opportunity to go back to the pilot phase to ensure revisions achieve the intended result.

A.4b An Exceptional Approach to Supporting Implementation Fidelity: Given teacher turnover, education levels, funding constraints, and the demonstrated link between implementation fidelity and student achievement, a truly exceptional and cost-effective approach to teacher support is required. Below, CLI outlines its multi-methods approach to teacher support, incorporating a web of best practices for ongoing teacher development that best fit within the structure of a Pre-K program.

Teacher Trainings: Two full-day seminars will help teachers understand the developmental underpinnings, the scope and sequence, and how to use the curriculum and supports to impact student learning while expanding their own professional knowledge. These trainings are intended to set the foundation for implementation on which ongoing support is grounded. Modeling, reflection, guided practice, partner and small group work, and role playing help educators synthesize learning and prepare them to implement what they learn in their classrooms.

Coaching: CLI follows educators from training to classroom with tailored high-quality coaching that research and external evaluation of CLI's work show are necessary to impact student learning (Parkinson, Salinger, Meakin, Smith, & Drummond, 2018; Elish-Piper & L'Allier, 2011; Taylor, Pearson, Peterson, & Rodriguez, 2005). To manage costs and make sense for Pre-

Children's Literacy Initiative

K teachers, CLI proposes to innovate its coaching approach into a two-tiered support model. Tier 1 is its demonstrated approach to embedded on-site coaching. Each implementation site will receive six full days of on-site coaching, enabling CLI coaches to build relationships and trust with teachers, understand their specific context, support lesson planning and delivery, model lessons, and provide instructional feedback over time. Each teacher will receive 12 hours of coaching over the course of the year from these day long sessions. Tier 2 is online virtual coaching sessions called CoachMe. Having established a personal coaching relationship with teachers on-site, CLI is allocating 10 online video coaching hours per teacher to maintain coaching support and continuity in between on-site sessions. Virtual coaching provides Pre-K teachers the flexibility they need given the real-life constraints of their context. Teachers will receive a stipend for completing coaching hours. By combining these tiers, CLI coaching will have similar quality, intensity, and duration as its model that yielded statistically significant teacher practice improvements and student learning at a fraction of the cost, as well as exceeding NEIIR quality benchmark of 15 in-service hours for lead and assistant teachers (O'Keefe, 2017). CLI coaches are highly qualified educational professionals who have (1) Master's in Reading, Early Childhood Education, or Elementary Education (as of this writing, 90% have this degree); (2) teaching certification; and (3) 4+ experience in a Pre-K classroom with demonstrated results.

CLI's Literacy Education and Resource Network (LEARN.cli.org): Currently focused primarily on K-3 instructional practices, CLI intends to build out LEARN to have the same high-quality instructional demonstration videos, independent learning modules (ILMs), and resources for Pre-K. Each instructional theme in CLI's Pre-K curriculum will be aligned to corresponding videos that introduce the theme and delve deeper into theme implementation to differentiate and maximize student learning. Parents and guardians will have access to videos and resources linked

Children's Literacy Initiative

to the curriculum, complete with demonstrations for how to apply lessons at home and utilize

typical home experiences to ignite learning and develop literacy and STEAM skills.

A.4c An Exceptional Approach to building leadership capacity to sustain impact beyond

the project period: To be sustainable, cost-effective, and scalable, CLI must transfer key

implementation capacity to center leaders, especially given high rates of teacher turnover. Center

leaders will form a professional learning community (PLC) and participate in two sessions a year

focused on supporting teachers to create effective classroom environments, identifying essential

elements of effective instruction, constructing effective feedback, identifying teacher strengths

and needs, providing professional development, and leading family engagement activities.

A critical outcome of the PLC is to ensure that center leaders have the capacity and

resources needed to on-board new teachers while effectively supporting returning ones. Center

leaders will have complete access to all CLI agendas, facilitator guides, PowerPoints, coaching

tools, and templates to replicate and lead trainings, as well as provide classroom implementation

support. CLI will use a gradual-release model, where center leaders begin as participants in all

CLI-led teacher trainings and workshops. The following year, center leaders co-lead with CLI

facilitators, preparing them to implement independently at the conclusion of the project.

Teachers and center leaders will also have continued access to LEARN.cli.org.

B. PROJECT DESIGN AND MANAGEMENT PLAN

B.1 The extent to which goals, objectives, and outcomes are specified and measurable. The

project will accomplish three key goals: 1) Create comprehensive, field-tested, high-quality Pre-

K curriculum in Spanish and English, 2) Achieve high-fidelity implementation resulting in

improved student learning, and 3) Build capacity of district/center leaders to sustain work

Children's Literacy Initiative

following grant period. Project goals, objectives, and outcomes with associated measures are

clearly specified in Table 1 below:

Table 1: Goals, Objectives, Outcomes, and Measures

Objective	Outcomes (*measures*)
Goal #1: Create high-quality, comprehensive, field-tested, curriculum that is aligned to state standards (English & Spanish) and implementation supports by SY20-21.	
1.1 Curriculum is aligned to standards and development benchmarks	• Teachers & directors report curriculum covers key topic areas (*surveys*) • Curriculum meets state standards (CLI created *curriculum matrix*)
1.2 Pilot tests of Blueprint modules and implementation supports (seminars, coaching, LEARN, CoachMe) are carried out to inform further development	• Pilot data exist for each core Blueprint module (*formative data*) • Data from pilots are filtered back into development work (*meeting notes, observational data*)
1.3 Curriculum and implementation supports address needs of classroom teachers and center directors	• Teachers and directors report that curriculum meets their needs (*surveys*)
1.4 Curriculum is publically available on CLI's website	• Curriculum is download (*number of downloads*)
Goal #2: High-fidelity implementation resulting in improved child outcomes in early language (PPVT) and mathematics skills (Woodcock-Johnson) beginning in SY20-21	
2.1 Implement new Blueprint curriculum in classrooms	• Teachers implement curriculum with fidelity (*FOI measures, surveys*) • Teachers report curriculum is user-friendly (*surveys*) • Teachers report understanding of curriculum (*surveys*)
2.2 Support curriculum implementation with professional development for teachers (seminars, coaching, LEARN, CoachMe)	• Teachers attend seminars (*operations data*) • Teachers attend group coaching sessions (*operations data*) • Teachers report satisfaction with seminars and group coaching (*surveys*)
2.3 Support families in enriching their children's Pre-K experiences	• Families report positive perceptions of family nights and LEARN (*surveys*) • Families report providing children with literacy and STEAM experiences at home (*surveys)*
Goal #3: Use embedded professional development to build capacity of district/center leaders to sustain work following grant period (train new teachers to implement with fidelity and support all teacher development)	
3.1 Support curriculum implementation with	• Directors understand fundamentals of CLI model, including Blueprint & professional development (*surveys*)

Children's Literacy Initiative

professional development for directors (seminars, coaching, LEARN, CoachMe)	• Directors know how to use FOI tools to assess implementation of Blueprint at their sites (*surveys*)
3.2 Co-lead key implementation activities with center directors	• Directors co-lead with fidelity (*observational data*)
3.3 Center directors train and support new teachers in use of curriculum	• New teachers implement curriculum with fidelity (*FOI data*)

B.2 The adequacy of the management plan. CLI has 30 years' experience, including large-scale, multi-year, multi-state projects such as its i3 validation, which external evaluators noted was implemented with fidelity across the three study years. CLI also has experience developing curriculum, having developed Blueprint 3.0 in 15 months, ahead of schedule and under budget. This project will use the same approach that kept those projects on time, on budget, and on track. Below are details of the timelines and milestones, followed by a description of the teams responsible for accomplishing all tasks.

Goal #1- Create comprehensive, field-tested, high-quality curriculum and supports in English and Spanish: Table 2 represents the process and timeline to create, pilot, refine, and produce CLI's comprehensive curriculum and associated implementation supports. Beyond the milestones and timeline for creating the suite of materials to improve Pre-K learning, further detail on the development and production process is found in the team descriptions below. (Note Team abbreviations for Tables 2 – 4: C, Content; P, Production; O, Operations; F, Field.)

Table 2: Goal #1 Milestones, Timeline, and Team Responsible

Obj.	Milestone	Team	F18	S19	F19
1.1,1.3	Draft all content and collateral for curriculum, professional development, family engagement, LEARN, and leadership development	C			
1.2	Develop and refine focus group protocols for pilots and focus groups	C			

Children's Literacy Initiative

1.2	Pilot and conduct 20 focus groups for feedback on all content and collateral for curriculum, professional development, family engagement, LEARN, and leadership development	C			
1.1,1.3	Refine all content and collateral for curriculum, professional development, family engagement, LEARN, and leadership development	C/ P			
1.1,1.3	Curriculum to the printer	O			
1.4	Curriculum is made publically available	P			

Goal #2 - High Implementation Fidelity Resulting In Improved Student Learning: CLI's professional development is effective because it meets the following research-based criteria: intensive and ongoing (NEIIR, 2017; Yoon, Duncan, Lee, Scarloss and Shapley, 2007); includes planned follow-up (Corcoran, 1995; Garet et al, 2001; Joyce and Showers, 2002); and is content-focused and classroom-based (Birman, Desimone, Porter and Garet, 2000; Corcoran, 1995; Garet et al 2001; Porter et al, 2003). In all, CLI is providing each teacher with over 32 hours of professional development per project year, including 10 hours of seminar time, 12 hours of 1:1 in-person coaching, and 10 hours of 1:1 virtual coaching. Doing so ensures teachers have sufficient quality, intensity, and duration of professional development to maximize impact. Table 3 sets out the milestone, team responsible, timing, and dosage to accomplish Goal #2.

Table 3: Goal #2 Milestones, Timeline and Team Responsible

Obj.	Milestone	Team	S19	F19	F20	S21	F21	S22	F22	S23
2.1	Teachers use Blueprint 4.0	F								
2.1	Develop fulfillment process	O								
2.2	Implement teacher trainings	F			2	2	2	2		
2.2	Provide on-site coaching*	F			6d	6d	6d	6d		
2.2	Provide ILMs for teachers	F			1	2	2	2	2	2
2.2	Provide CoachMe	F			10h	10h	10h	10h		
2.3	Provide family nights	F			1	1	1	1	1	1
2.3	Provide ILMs for families	F			1	1	1	1	1	1

*Coaches will spend full days providing coaching to all teaches in a center.

Children's Literacy Initiative

Goal #3 - Build capacity of district/center leaders to sustain work following grant period: To ensure project goals are sustained beyond the grant period, especially given the high attrition rate of Pre-K teachers, CLI will engage in the activities outlined in Table 4 to build the capacity of center leaders (each row pertains to activities related to center leaders).

Table 4: Goal #3 Milestones, Timeline and Team Responsible

Obj.	Milestone	Team	F20	S21	F21	S22	F22	S23
3.1	Participate in teacher workshops	F	2	2	2	2		
3.1	PLCs	F	2	2	2	2		
3.2	Prove ILMs	C/F	2	2	2	2		
3.2	Participate in CoachMe	F	5h	5h	5h	5h		
3.2	Co-lead teacher workshops	C/F			1	1		
3.3	Provide new teachers with full implementation support	F						

CLI has a clear structure to ensure the right staff are focused on the right aspects of developing, implementing, and continuously improving the project. Dr. Frank Grossman, Chief Academic Officer and Deputy Executive Director, will oversee all aspects of the project. All staff involved are veteran leaders and top-notch professionals, the majority of whom have advanced degrees in education or respective content areas (see Appendix H). Each team described below has a defined area of responsibility, regular opportunities to meet and review data to inform decision making, and a clear scope of authority to take action.

Project Leadership Team, comprising leaders from all teams involved in the project, will meet monthly and tend to all aspects of grant management, ensuring the project is meeting all deadlines and within budget. The team will review implementation data and student achievement data. This team will also manage high-level district/partner relationships.

Content Team, led by Caryn Henning, is responsible for developing all aspects of the curriculum, professional development, and support content. This team will meet weekly to

ensure content meets the goals and expectations set forth by the team, review the writing of the curriculum, and review feedback from focus groups and field tests to further deliverable development.

Operations Team, led by Ify Ajuba, is responsible for logistics to create and deliver all aspects of the project, from distribution of Blueprint 4.0 to each classroom to the number of completed coaching hours. This team will meet monthly to review progress on tasks and milestones and ensure continued alignment with the production timeline. The operations team will solicit and review proposals from various printers, logistics, and distribution companies to maximize cost-effectiveness and efficiencies.

Production Team, led by Mike Jones, is responsible for designing, filming, and producing all print and digital assets for the project. This team will meet weekly. Layout of the theme guides, lesson plans, instructions, and other materials will be done concurrently with the writing of the lessons and materials themselves, allowing for content to be user tested and refined. The production team is also responsible for ensuring digital content, in both English and Spanish, creates a user experience that is engaging, informative, and free of design barriers that might impede users from meeting their content objectives.

Field Team, led by Frank Grossman, consists of on-the-ground staff in Elizabeth and Newark as well as members of the Operations, Content, and Research and Evaluation Teams. The Field Team will meet weekly to review and plan the day-to-day logistics of project implementation. This team supports and supervises CLI coaches. Coaches check in weekly with senior CLI staff for supervision and support and attend monthly full-day trainings. The team fosters collaboration with partners during all phases of the plan and acts as the liaison between organizations as needed. This team is responsible for all field-based piloting and implementation.

Research and Evaluation Team. Led by Brooke Di Leone, this team meets weekly to handle all aspects of program evaluation for CLI, such as sending surveys to program participants (teachers, principals, center directors, etc.) to better understand perceptions of CLI's work, gathering student assessment data to determine impact on student literacy skills, and monitoring implementation data (e.g., coaching topics covered) to ensure fidelity to the CLI model.

B.3 The extent to which performance feedback and continuous improvement are integral to the design of the proposed project. There are three primary continuous improvement aspects of this project. First, during the Development Phase, CLI will garner field-based feedback about curriculum materials, professional development, and online resources to make sure they meet the needs of the field. Data will be collected through focus groups and observations. Focus group protocols will address on the following questions: What do teachers find useful? What engages the children? What supports are essential? What do teachers need more of? What are the implementation barriers? How did the children respond to particular lessons and activities? Observations will be guided by the following viewing lenses: timing and pacing of the lessons; teacher-child interactions; modifications made (both planned and impromptu); children's engagement; use of materials; use of scaffolded language; and note taking documents.

The second aspect of continuous improvement focuses on a series of structured case studies conducted by RFA to inform real-time adjustments. Key information gathered will include barriers to and facilitators of implementation fidelity (see Appendix H). At the conclusion of each implementation year, RFA will deliver an implementation report for CLI to use in planning, containing qualitative and quantitative data summaries and recommendations for action to inform next steps for all project implementation teams.

The final aspect of continuous improvement is the processes put in place by CLI to collect, analyze, and act on formative data for critical project activities. In particular, the formative evaluation will consist of surveys distributed to seminar attendees following trainings, surveys of families following family night events, annual surveys of CLI coaches, and focus groups with families. Key topics explored will be satisfaction with events, perceptions of CLI's work and impact, family engagement, and student engagement. CLI's surveys will be designed by the research and evaluation team with input from the field and content teams. CLI will regularly summarize these formative data and review summaries in key meetings for planning purposes.

B.4 The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication. At the conclusion of the grant, CLI will make the Blueprint curriculum in Spanish and English available to the public to download free of charge from its website. Additionally, LEARN, CLI's free online platform, provides educators with a comprehensive research-based resource to read about, watch, and discuss the best practices for balanced literacy instruction. Launched just a year ago and already with over 40,000 unique users, the numbers clearly prove that LEARN is an important dissemination platform.

CLI regularly presents at national and regional conferences. In the last year alone, CLI presented at American Educational Research Association (AERA), Learning Forward, National Association for Elementary School Principals, NAEYC, and i3 Project Directors Conference, among others. Next year, CLI is slated to co-present with RFA on the results of RFA's current evaluation of CLI's Pre-K initiative at the School District of Philadelphia's Research to Practice conference (co-sponsored with the Mid-Atlantic REL), as well as at AERA.

C. EVALUATION PLAN

RFA will serve as the independent evaluator, drawing on significant experience and expertise in conducting early literacy program evaluations and developing and validating measures of the fidelity of implementation of instructional materials. RFA also brings deep knowledge of CLI via an on-going evaluation of the impact and implementation of Blueprint (BP) 3.0 in Philadelphia. RFA's methodological expertise and nuanced understanding of CLI will ensure a rigorous evaluation of BP 4.0's impact and implementation.

The evaluation will produce three studies (see Table 5). The **impact study** will examine the effect of the intervention, including job-embedded professional development for teachers and BP 4.0 curriculum, on students' kindergarten readiness measured by early language and math skills during Intervention Year 2. The **implementation study**, which spans Intervention Years 1-3 will explore 1) how CLI's fidelity of the BP 4.0 intervention relates to the status of teachers' implementation of BP 4.0 and 2) how the status of curricular implementation relates to student outcomes. The **transfer and sustainability study**, which will take place in Intervention Year 2-3, will explore the status of BP 4.0 implementation as CLI transfers key implementation capacity to center leaders.

Table 5. Timeline of Implementation Activities/ Study Years Aligned to School Years

SY 2018-19	SY 2019-20	SY 2020-21	SY 2021-22	SY 2022-23
Curriculum and PD Development and Piloting		Intervention Year 1	Intervention Year 2	Intervention Year 3
Research Tool Development and Field Testing			Impact Study	
		Implementation Study		
			Transfer and Sustainability Study	

Prior to Intervention Year 1, RFA will develop and pilot a suite of instruments to measure the fidelity of CLI's intervention and teacher use of the curriculum. Evaluation activities throughout

will complement CLI's continuous improvement processes by providing objective performance data aligned to intended implementation and student outcomes.

C.1 Methods of evaluation will produce evidence about the project's effectiveness that meets WWC standards

C.1a Impact will be evaluated using a school-level randomized control trial (RCT) that meets WWC standards without reservations. The impact study will examine the following research question: *What is the impact of Blueprint 4.0 curriculum in Pre-K classrooms on student early language and math skills? (RQ 1).* Previous curricular impact studies report muted findings in the first year of implementation as teachers learn new pedagogical and curricular approaches (PCEC, 2008). Therefore, impacts will not be assessed until Intervention Year 2.

School Selection and Randomization. Prior to Intervention Year 1, CLI will work with two high-need New Jersey school districts to recruit 40 public schools (10 in Elizabeth and 30 in Newark) that 1) have classrooms that serve mostly four-year-old students, 2) have not implemented any version of the Blueprint curriculum nor received CLI training, and 3) serve at least 45 students who are proficient in English. As discussed in the introduction, CLI selected these districts because nearly all students in these districts are historically underserved (NJ Department of Education, 2018), and CLI has strong pre-existing relationships with the superintendents. In each district, half of participating schools will be randomly assigned to the treatment condition (N=20) and will receive the BP 4.0 curriculum and a suite of professional development services from CLI. For the duration of the impact study, schools in the control condition (N=20) will use a local curriculum-as-usual, with no exposure to BP 4.0. *Student Sample.* The student sample will include students who are proficient in English and enrolled in Pre-K classrooms in Elizabeth and Newark. RFA will obtain parental consent and screen for English proficiency prior to administering student assessments. Assuming a within-year student

attrition rate of 13% (PCEC, 2008, p.24), RFA conservatively estimates obtaining pre- and post-test achievement scores for a total of 1,950 students, or 87% of the original study sample of 2,240. We expect this will meet WWC criteria for low overall and differential attrition (WWC, 2017), as previous curricula impact studies document low within-year student attrition and no evidence of differential attrition between treatment and control groups (PCEC, 2008). Further, to examine whether the student sample meets the WWC standard for baseline equivalence after attrition, RFA will use pre-test student assessment scores to test for a *Hedge's g* of 0.05, the WWC standard for sample baseline equivalence threshold (WWC, 2017). ***Power Analysis.*** Assuming power 80%, Type-1 error 5%, an intraclass correlation of 0.06 (based on RFA's current BP 3.0 evaluation)[3], and proportion of variance explained by pre-test measures at the school level 0.8 (PCEC, 2008), the minimum detectable effect size (MDES) is estimated at 0.16. This effect size falls within the lower bound of estimated effects of preschool curriculum-based interventions on both early language and math skills ranging from null to 0.40 (PCEC, 2008).

Student assessment data collection. RFA will administer the PPVT, 4th Edition and the Woodcock Johnson Applied Problems (WJ), 4th Edition to collect pre- and post-test student assessments of kindergarten readiness literacy and math skills, respectively (see Section C3). RFA will assesses students only in English. The WJ-Applied Problems subtest does not have a Spanish version of the assessment. While the PPVT has a parallel Spanish-language version (TVIP), the scoring process is different. Most notably, it does not offer a normed growth scale score, which is the main indicator for research on change in outcomes over time.

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[3] Based on PPVT data from a sample of 1,100 students in 22 Philadelphia Pre-K centers with demographic characteristics similar to Elizabeth and Newark (Research for Action, 2017).

Prior to administration, RFA will hire and train approximately 20 experienced, local assessors to conduct assessments, which will take about 30 minutes per student to complete. *Analysis.* To address *RQ1*, RFA will produce intent-to-treat impact estimates using a 3-level hierarchical linear model (HLM), controlling for covariates at the student (e.g., pre-test scores and school administrative data on student demographics), teacher (e.g., teacher education and teaching experience measured by RFA surveys), and school levels (e.g., publicly-reported school average achievement and demographics). This approach accounts for clustering of students at both classroom and school levels. *Evaluation Note.* To cut costs of the evaluation, RFA will not assess students who are not proficient in English, nor will RFA assess intervention impacts on outcomes related to Science components of the curriculum. However, RFA will assess teacher perceptions of these impacts using annual teacher surveys, described below.

C.1b The implementation study will evaluate fidelity of the intervention and status of teacher implementation of the BP 4.0 curriculum. The implementation study will explore two research questions: i) *How does the fidelity of CLI's BP 4.0 intervention affect teachers' implementation of BP 4.0 in Intervention Years 1-3? (RQ 2)*, and ii) *How does teachers' implementation of BP 4.0 moderate the impact of the BP 4.0 intervention on student outcomes? (RQ 3)* Results will also provide CLI with timely feedback for continuous improvement, help interpret overall impacts, and explain any variation in impact across teachers and sites. *Teacher sample.* Assuming BP 4.0 will be implemented in an average of four classrooms in each of 20 treatment schools, including Spanish-speaking classrooms, implementation data will be collected from approximately 80 teachers each Intervention Year. *Implementation data collection.* Each year, RFA will review written materials and conduct informal interviews with CLI's curriculum developers to understand critical components of BP 4.0. During Intervention Year 1, data on

teacher engagement with BP 4.0 and CLI supports will be collected via on-site teacher interviews with one randomly-selected teacher from each of the 20 treatment schools. RFA will collect data on the status of BP 4.0 implementation from all treatment teachers during Intervention Years 1-3 via online surveys and instructional logs. Surveys will measure perceptions of knowledge, quality of instruction, attitudes toward BP 4.0, and perceived impacts of BP 4.0 on student skills (including whether impacts are similar for students who are not proficient in English). Instructional logs will measure implementation status of select BP 4.0 modules. In addition, CLI will provide administrative records of teacher participation in key project components, including teacher training seminars, tiered coaching, and online LEARN modules. *Analysis.* Interviews will be transcribed and analyzed using *dedoose* to identify and compare themes within and across districts to address RQ 2&3. Data from surveys, logs, interviews with CLI developers, and document reviews will be used to generate two fidelity indices: fidelity of intervention and status of teacher implementation of BP 4.0 (see Section C4). Descriptively, the fidelity of intervention index will assess the coherency of training focus, duration, intensity, and alignment to BP 4.0 of professional development activities. In addition, RFA will model associations between fidelity of intervention and status of implementation of BP 4.0 within a multiple regression framework, controlling for teacher characteristics (RQ2). RFA will also estimate 2-level HLM to examine how LEVEL 2 indicators of the status of BP 4.0 implementation moderate treatment effects on LEVEL 1 student outcomes (RQ3).

C.1c Transfer and sustainability study: Changes in implementation as CLI transfers its roles to districts. The sustainability study will explore two research questions: i) *How does implementation of BP 4.0 change across Intervention Years 2 and 3 as CLI transfers BP 4.0 training and support to district personnel? (RQ4)*, and ii) *How do district personnel and teachers*

perceive the sustainability of BP 4.0? (RQ5) **Teacher sample.** With an estimated teacher

turnover rate of 30% (Porter, 2012), RFA expects 24 new treatment teachers in each of

Intervention Years 2 and 3. ***Data collection.*** During Intervention Years 2-3, data on new teacher

training and support will be collected via interviews with 8 randomly-selected newly hired

teachers in Intervention Year 2 (trained by CLI) and an additional 8 teachers in Year 3 (trained

by center leadership). In Intervention Year 3, RFA will also interview center leadership involved

in supporting teachers. ***Analysis.*** Interviews will be transcribed and analyzed using *dedoose* to

identify themes related to RQ4 and RQ5. Themes will be compared between Intervention Year 2

and 3 to explores changes after CLI transfers its role to school districts. In addition, RFA will use

data from surveys and logs collected from all new teachers in Intervention Years 2 and 3 to

conduct t-tests of average differences in BP 4.0 implementation of new teachers trained by CLI

in Intervention Year 2 (N~24) to new teachers trained by center leadership in Year 3 (N~24).

C.2 Dissemination strategies and guidance for replication. The evaluation will produce

annual reports following each Intervention Year, with specific guidance for replication and

testing in other settings and to contribute to the body of knowledge linking teacher instructional

quality to student outcomes. RFA will use multiple social media strategies to publicize publicly-

available reports, share results at conferences of practitioners and researchers, and publish

findings in peer-reviewed journals. RFA will produce valid and reliable instruments of BP 4.0

intervention fidelity, teachers' implementation of BP 4.0, and easy-to-administer, open-source

data collection protocols. RFA will work closely with CLI to ensure all tools are 1) suited for

future monitoring of BP 4.0, and 2) open-source and available via their websites.

C.3. The evaluation will provide valid and reliable, objective performance data for student

outcomes aligned to CLI's logic model (see Appendix H). RFA will examine two indicators of

kindergarten readiness, student language and math skills, using valid assessments: the PPVT, 4th Ed. for receptive vocabulary and the WJ- Applied Problems subtest, 4th Ed. for math skills. The PPVT is highly correlated (r=.82) (Dunn & Dunn, 2007) with other vocabulary tests, such as the Expressive Vocabulary Test, Second Edition (EVT-2) and demonstrates high internal consistency with a split-half reliability of 0.89-97 (Dunn & Dunn, 2013). WJ-Applied Problems subtest is highly correlated (r=0.82-94) with other measures of student achievement, such as the Kaufman Test of Educational Achievement-Second Edition (KTEA-II) with an internal consistency between .92-.93 (McGrew, LaForte, & Schrank, 2014).

C.4. The proposed evaluation will provide objective, and where possible, valid and reliable implementation data aligned to CLI's logic model (see Appendix G). Key components of the intervention include the BP 4.0 curriculum and a suite of professional development supports for teachers including training seminars, job-embedded coaching, on-demand skype coaching (CoachME), and online learning modules (LEARN). To measure *fidelity of these key intervention components*, RFA will develop and validate an intervention fidelity index using data from CLI-provided records of resources delivered. To measure *status of teacher implementation* of the BP 4.0 curriculum, RFA will use data from informal interviews with CLI curriculum developers, document reviews, teacher surveys, and instructional logs to develop and validate a BP 4.0 implementation index. RFA draws on a critical component framework to identify essential components of BP 4.0 and organize them into multi-dimensional measurement areas (Century, Rudnick, & Freeman, 2010; Ruiz-Primo, 2006; Bond et al., 2000). See Appendix H for additional information about the framework for measuring the implementation of instructional curricula and instrument development process.