

Journal of Applied Research on Children: Informing Policy for Children at Risk

Volume 11
Issue 1 *Implementation in Real World Settings:
The Untold Challenges*

Article 4

2020

The Implementation and Scaling of an Early Education Program

April Crawford, PhD

University of Texas Health Science Center at Houston, april.crawford@uth.tmc.edu

Cheryl Varghese, PhD

University of Texas Health Science Center at Houston, cheryl.a.varghese@uth.tmc.edu

Pauline Monsegue-Bailey, PhD

University of Texas Health Science Center at Houston, pauline.a.monsegue-bailey@uth.tmc.edu

Follow this and additional works at: <https://digitalcommons.library.tmc.edu/childrenatrisk>

Recommended Citation

Crawford, PhD, April; Varghese, PhD, Cheryl; and Monsegue-Bailey, PhD, Pauline (2020) "The Implementation and Scaling of an Early Education Program," *Journal of Applied Research on Children: Informing Policy for Children at Risk*: Vol. 11: Iss. 1, Article 4.

DOI: <https://doi.org/10.58464/2155-5834.1412>

Available at: <https://digitalcommons.library.tmc.edu/childrenatrisk/vol11/iss1/4>

The *Journal of Applied Research on Children* is brought to you for free and open access by CHILDREN AT RISK at DigitalCommons@The Texas Medical Center. It has a "cc by-nc-nd" Creative Commons license" (Attribution Non-Commercial No Derivatives) For more information, please contact digitalcommons@exch.library.tmc.edu



The Implementation and Scaling of an Early Education Program

Acknowledgements

The authors would like to acknowledge that funding for this early education program came from the Texas Workforce Commission and Texas Education Agency.

The Implementation and Scaling of an Early Education Program

April Crawford, Cheryl Varghese, Pauline Monsegue-Bailey

Abstract

The current paper discusses the implementation and scaling of an early education program (Texas School Ready; TSR). Implementation and scaling of the TSR program were initially met with challenges such as participant/site recruitment, participant retention, and staff training. These 3 challenges are highlighted along with the ways in which delivery and support systems were used to address and mitigate these challenges. We highlight several key continuous quality improvement measures (for administrators, coaches/coordinators, teachers, and students) that are used to monitor and improve the implementation of the TSR program across the state. Collectively, the delivery and support systems along with the continuous quality improvement measures allow for the TSR program to be implemented not only at scale but also in ways that are sustainable across communities.

Introduction

Bringing programs or interventions to scale continues to be an ongoing challenge across disciplines. Within education research, there is growing pressure to improve student achievement on a large scale; however, the process of enacting educational reforms or innovations is often met with real-world challenges of implementation.^{1,2} Despite decades of research on implementation and a vast array of studies proposing solutions to educational problems, many implementation challenges continue to persist and perplex practitioners and researchers. Problems of scale in education typically arise because it is difficult to change “the core of educational practice” and, even when programs are implemented successfully, it is often very challenging to sustain such programs.³ Researchers have long noted that educational innovations must be responsive to the needs of local contexts and school districts in order for the innovation to be implemented and sustained over time.⁴ In efforts to bridge the gaps between research and practice, researchers have begun to consider the conditions and populations most responsive to specific educational programs as well as the support and infrastructure needed for implementing educational programs.

Implementation science frameworks have become increasingly utilized as a way to help researchers and practitioners more effectively

introduce and implement new programs in different contexts. One implementation science framework is the Interactive Systems Framework for Dissemination and Implementation,⁵ which posits that there are 3 interplaying systems: synthesis and translation (using evidence-based practices to create products for practitioners), delivery (capacity and infrastructure of organizations to deliver services), and support (training or technical assistance). Each of these systems provides an infrastructure that supports scale-up and sustainability.

In the current paper, we first describe an early education program, Texas School Ready (TSR), as an application of the first system (synthesis and translation). We then identify how we used delivery and support systems to address 3 challenges (partner/participant recruitment, participant retention, and staff training) that emerged as we implemented and scaled TSR. We discuss ways that we have addressed each of these implementation challenges and describe how we use a quality improvement framework to facilitate ongoing implementation and scaling of TSR.

Synthesis and Translation

In 2003, the Texas state legislature identified a critical need to improve the quality of early childhood education, funding TSR as a research and implementation program to be integrated across Texas schools. Implementing the TSR model required ongoing collaboration and partnerships among educational agencies at the state, regional, and local levels (eg, public pre-kindergarten, Head Start grantees, childcare centers participating in the Child Care and Development Fund subsidy program). In the following sections, we first describe the TSR program and then describe key participants within the TSR program.

TSR Program. TSR was designed to improve the quality of pre-kindergarten classrooms through training and professional development.⁶ The TSR program consists of 3 core features: 1) online courses aimed at increasing knowledge of appropriate language, literacy, and responsiveness strategies; 2) training and resources to conduct student progress monitoring; and 3) training in the use of a supplemental curriculum (eg, books with linked language and literacy activities, activity guides). These core intervention features help teachers use language and literacy-based assessments and curriculum-linked instruction. Additionally, teachers also have access to a video library that includes video exemplars of a variety of language and literacy lessons (eg, book reading, phonological awareness, print and letter knowledge, written expression, and oral

language) that can be implemented in different classroom settings (eg, whole group, small group, transitions, and centers).

Research-based studies have highlighted that access to professional development may be one way to address the “last-mile” problem, which describes the challenge of translating research recommendations to classroom practices. This problem has persisted for decades.^{7,8} Increased investment in professional development emerged from a growing recognition that effective professional development has the potential to build and maintain a stronger teacher workforce. To that end, the TSR program also includes professional development opportunities for teachers, such as ongoing training and coaching. Generally, coaching sessions are structured so that teachers have opportunities to implement a specific action plan with guidance from their coach and reflect on their teaching practices with their coach. At the conclusion of coaching sessions, teachers work with their coaches to create new goals and action plans for improving future instruction. TSR’s coaching model is described more fully below in “Support Systems.”

Key TSR participants. Key participants within the TSR program include: lead agents, TSR coaches and coordinators, teachers, and administrators. We conceptualize key participants as community- and school-based partners within the TSR model. In the sections below, we describe key responsibilities of the TSR participants (Table 1) as well as an overview of the TSR organizational structure (Table 2).

Table 1. TSR Participants and Participant Roles

TSR Participants	“Who”	Role
Lead agents	Community-based organizations who serve as the hub for TSR in local community	Recruit eligible Head Start, childcare programs, and public schools to participate in TSR for 3 years; coordinate the delivery of services to TSR participants in their community; hire coaches
Program	Children’s Learning Institute	Develop and deliver

Managers	(CLI) employees who oversee implementation of the TSR program across participating Texas communities	training; supervise lead agencies, coordinators, and coaches; conduct classroom visits and professional development webinars
Coordinators	Lead agent staff	Manage delivery of TSR services
Coaches	Lead agent staff	Provide classroom support to teachers
Teachers	District employees, Head Start employees, or childcare employees	Primary recipient of TSR program services (eg, coaching, professional development)
Administrators	School- or program-level administrator (director, principal)	Support TSR program implementation

Table 2. Organizational Structure of TSR Program

Program Manager	Number of Communities	Number of Coordinators	Number of Face-to-Face Coaches	Number of Remote Coaches	Number of TSR Classrooms
A	5	5	6	1	231
B	5	5	6	0	213
C	5	5	7	5	303

	D	5	5	4	2	214
	E	6	6	6	1	289
Total	5	26	26	29	9	1250

Lead agents. Lead agents represent specific community entities (eg, education service centers, local workforce development boards, United Way, community colleges). Lead agents recruit eligible Head Start, childcare programs, and public schools to participate in TSR for 3 years and coordinate the delivery of services to TSR participants in their community. Additionally, lead agents hire coaches who will work in the schools and childcare centers (coach salaries are reimbursed by TSR program funds).

Program managers. Approximately 5 program managers oversee the TSR model processes and procedures across the 26 school communities. Program managers collaborate with educational agencies, develop and deliver training, train teachers on effective coaching practices, and interpret data for quality improvement. Each program manager supervises 5 to 6 lead agencies and works directly with approximately 5 to 6 coordinators and 7 to 12 coaches. Program managers conduct classroom visits and professional development webinars that help support coordinators and coaches. For example, program managers provide feedback to coaches (approximately 5 to 6 times a year) on how to improve teachers' instructional practices.

Coordinators. Coordinators are assigned to each school community, and they are responsible for managing the delivery of services. These services include developing and maintaining collaborative relationships with education service centers, Head Start, and childcare entities; supervising staff; and supporting coaches' work with TSR teachers. In addition, coordinators may also serve as classroom coaches (depending on the size of the coaching staff and amount of available hours). Coordinators typically have at least 4 to 5 years of teaching experience and at least 3 years of coaching experience.

Coaches. Coaches are responsible for providing classroom support for teachers and are expected to have similar levels of teaching and coaching experience as coordinators. Coaches work with approximately 20-30 teachers per year, a caseload determined by a set number of coaching hours. For example, coaches are expected to have a base caseload of

approximately 70 coaching hours per month. The amount of coaching that teachers receive depends on their year of participation in the TSR program. First-year or replacement teachers (ie, little or no prior exposure to the TSR program) receive 4 hours of coaching per month. Second-year teachers receive 2 hours of coaching per month. Third-year teachers receive 1 hour of coaching per month. The number of coaching hours per year was determined based on previous study findings of the TSR program⁶; given the effectiveness of the monthly 4-hour coaching dosage, the TSR program continues to utilize a similar coaching dosage for first-year teachers. Coaching dosage decreases in subsequent years to account for teachers' growing capacity in delivering higher-quality instruction.

Over the past decade, multiple research studies have validated the TSR program as effective in positively influencing teaching practices, classroom environments, and children's learning.⁶ The effectiveness of the TSR program has been examined in 3 federally funded randomized controlled trials and other experimental studies.⁹ Teachers participating in the TSR program have been found to be more responsive to the individual needs of the children in their classrooms, show increases in their use of language-building strategies (particularly during book reading and general conversations with children), and demonstrate better classroom organization practices. Given the promise of the TSR program in improving both teacher- and child-level outcomes, we sought to expand implementation of the program throughout the state. This expansion brought about challenges, as highlighted in the sections below. In response to these implementation challenges, we have identified ways to ensure that the delivery and implementation of the TSR program could be maintained at a high level of quality and rigor.

Implementation Challenge 1: Partner/Participant Recruitment

The primary goal of expanding the TSR program is to implement a statewide program with sufficient coverage across the state. State funding allows for recruitment of approximately 350-400 new classrooms every year over a 3-year timeframe, but includes specific eligibility and recruitment criteria for sites to qualify for the TSR program. For example, sites must serve high populations of children considered to be at risk for school failure (eg, qualify for free or reduced lunch) and must have teachers who have not participated in the TSR program in the past 5 years. Given the large population and expansive geographic area of Texas, the TSR program is delivered through a decentralized delivery network that allows local lead agencies (eg, Head Start grantee, local education agency, nonprofit

organizations) to serve as the hub for TSR services in their communities. However, continually recruiting new providers in different areas is an ongoing challenge, especially since recruitment requires both teachers and administrators to commit to participation. Figure 1 shows the various community sites participating in the TSR program.

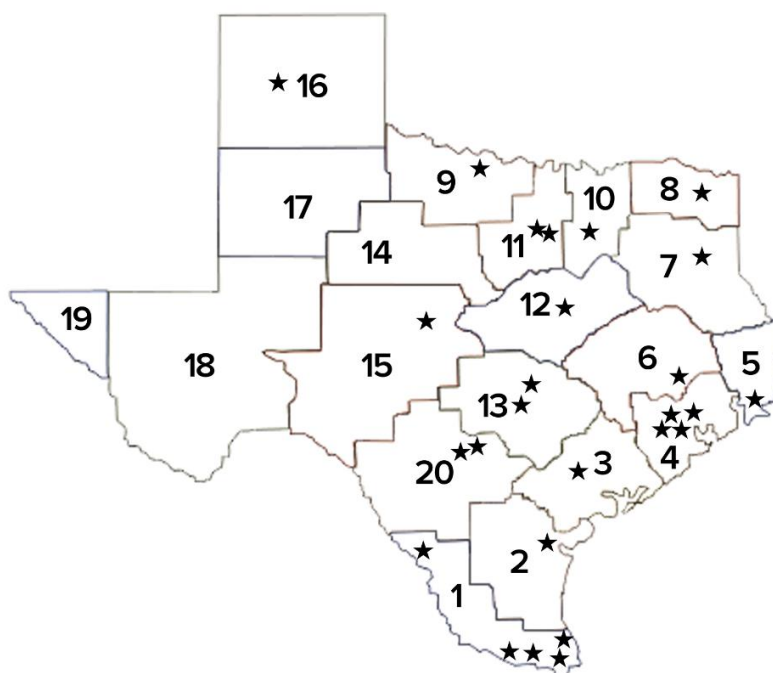


Figure 1. Number of community sites by region that are participating in the Texas School Ready program. Stars indicate the location of TSR lead agencies that oversee the program locally.

Implementation Challenge 2: Participant Retention

Despite utilizing a variety of recruitment strategies, participant turnover has been a continual challenge across sites. Teachers working in high-needs sites often experience greater levels of teacher stress and burnout, ultimately contributing to higher levels of teacher turnover.¹⁰ This is especially magnified in early childhood contexts, where there are additional challenges such as low teacher pay, limited administrative support, and few school resources. Given that the TSR program is implemented across mixed delivery systems (eg, child care centers), challenges of turnover can vary based on context. For example, there are

higher levels of turnover in childcare, particularly in communities that serve higher proportions of economically disadvantaged families.¹¹

Teacher turnover in early care and education programs can adversely affect both the quality of care for young children and the working climate for other staff members.¹² Participant turnover in the TSR program can be especially problematic because it often contributes to (a) retraining new staff and (b) limited effectiveness of TSR on teacher- and child-level outcomes. Participant turnover can impact the number of training sessions teachers are able to complete during the school year. This often leads to a need for more intensive support for replacement teachers, who may have missed important content covered during training sessions and need to “catch up” to learn content. Additionally, there are limited slots for participating within the TSR program; as described in the sections below, sites complete an extensive application to participate in the TSR program, making it challenging to replace participants when there is turnover. Previous data have highlighted reasons for teacher turnover, including higher-paying jobs, difficulties with school administrators, and lack of implementation support.

Delivery Systems

We have developed an extensive application process to facilitate partner/participant recruitment within the TSR program along with a series of implementation monitoring metrics to determine the capacity and infrastructure of sites to implement the program. Although participant retention continues to be a challenge (which is typical across the early childhood sector), recruitment strategies are designed to identify sites and participants that show commitment to the program, helping to mitigate participant turnover. These processes are detailed in the sections that follow.

General recruitment strategies. We developed a variety of recruitment strategies. They included creating statewide maps that identify areas that would qualify for the TSR program, conducting onsite evaluation needs, and providing teacher and school-level incentives (eg, continuing education units, classroom tablets) for participation in the program. Recruitment efforts are also embedded within ongoing outreach efforts, which encompass marketing collateral, webinars, conference presentations and exhibits, and our own regional training events.

Application process. Every 2 years, community-based organizations can apply to become TSR lead agents, serving as the hub for TSR in their local community. Lead agents take on the primary responsibility

for completing and submitting applications to participate in the TSR program. The application requires commitment letters from school and childcare directors; these letters often detail the recruitment of a group of at least 20 providers who will be trained under TSR staff. Site participation in the TSR program requires schools to provide at least 3 hours of academic-based instruction and requires school administrators to identify ways for teachers to attend professional development sessions and participate in coaching sessions offered through the TSR program.

Applications are scored based on a points system, and points are awarded to the extent to which lead agents provide descriptive and compelling rationale for the sections in the application. TSR funding allows for approximately 26 communities across Texas to be selected to participate in the TSR program. Lead agents who re-apply to the TSR program are evaluated based on their implementation of the program in previous years. Additionally, metrics such as the status of attrition and key indicators from the risk index (described in more detail below) are considered for returning lead-agent applicants. Recruitment is also dependent on lead agents' locations and staffing. In areas without lead agents, we have an internal waiting list for individual schools that are interested in participating. Selected schools are offered opportunities to receive remote coaching (described in the "Staff Training" section).

Risk Index. Given the pervasive nature of teacher turnover in early childcare settings, we developed a risk index measure to quantify and understand patterns of TSR program implementation; this ultimately helps to inform the selection and retention of quality lead agents. The risk index is comprised of percentages and patterns of active participants, teachers, and students; assessment tracking measures; and implementation completion rates. The risk index provides a snapshot of data that allows for greater tracking of implementation challenges specific to sites. Utilizing the risk index also allows us to better anticipate challenges that may be specific to sites or regions experiencing higher levels of teacher turnover and to understand how to appropriately allocate resources and develop strategic plans for training new staff within those sites. Completion data from the risk index are generated 3 times per year--in November, January, and April--and are aligned with the times that key observational measures (Classroom Environment Checklist, Classroom Observation Tool, and Child Progress Monitoring) are completed. The risk index also captures the number of instructional goals that coaches set for teachers as well as the number of goals teachers met. Program managers review risk index results and facilitate webinars to discuss improvement plans with TSR coordinators and coaches within each school community. For example, from program years

2016 to 2018, teachers completed approximately 90% of the Child Progress Monitoring within the completion timeframe. During the same program years, coordinators and coaches completed the Classroom Environment Checklist, Classroom Observation Tool, and Short Term Goal measures on teachers' instructional practices with an 80% completion rate. Given participant turnover, acceptable completion rates range from 70-80%. Completion rates below the 70% threshold signals concern and indicates further need for key staff to intervene at the site-level. Surveys distributed to administrators, teachers, coordinators, and coaches are another resource used to measure program implementation. Collectively, these measures not only help to troubleshoot implementation issues along the way, but also help to capture a targeted view of participation patterns across community sites.

Implementation Challenge 3: Staff Training

In the TSR program, professional development initially consisted of specialized workshops and multiday training sessions; however, it became increasingly clear that more intensive professional development support was needed to help teachers implement the TSR program with high levels of quality. As a result, coaching-based support is now offered to teachers as part of the TSR program. During the early years of scale-up for the TSR program, coaches were primarily university-based employees who were responsible for traveling to various community sites to work with teachers. As the program expanded across the state, this became unsustainable. A new support delivery model (described below) was conceptualized as a way to not only build sustainability within communities, but also increase the likelihood that schools and teachers could independently use the TSR program with minimal support.

Support Systems

The support system embedded within the TSR program comprises a strategic organizational structure that ultimately facilitates the implementation of the TSR program at scale. The support system consists of key technical assistance (eg, personnel such as coordinators and coaches, professional development) for TSR program participants. In the section below, we describe the intensive professional development offered to key personnel (described on page 3–5) as a way to address the third implementation challenge--staff training in sustainable and high-quality ways.

Professional Development

Program manager professional development. Professional development for program managers typically begins in the summer prior to the school year and consists of TSR program processes and procedures, coaching strategies and instructional practices, preschool content, and interpreting data to inform decisions. The professional development for program managers is led by key staff at the Children’s Learning Institute (CLI). Approximately 5 topics per year are delivered in the professional development sessions, and these topics are selected based on responses to surveys and performance on work tasks.

Coordinator and coach professional development. At the beginning of the school year, coordinators and coaches are trained on the TSR program and implementation systems. The training covers content related to an online platform (CLI Engage), coaching practices, organizational and communication strategies, progress monitoring, and key literacy content (see Table 3 for a more comprehensive overview of the training content and rationale). Approximately 4 professional development sessions are administered throughout the year for coordinators and coaches within the communities. Program managers typically lead the professional development sessions and design content based on the needs of the community. Community needs were determined by unmet coaching goals across content areas (eg, classroom management, social and emotional development, oral language) or through the Teacher Behavior Rating Scale (described in more detail below), community site visits, and coaching feedback sessions. Ongoing video collaborative calls with coaches occur twice a month to improve coaching practices.

Table 3. TSR Coordinator and Coach Trainings

Coordinator/Coach Training Content	Training Rationale
TSR Program Overview	Provides coaches in-depth layout of TSR program
Project Materials	Describes how to use resources and materials teachers and staff use to implement TSR

CLI Engage Platform	Describes how to utilize CLI Engage technology platform for facilitating professional development, inputting coaching data, collecting progress monitoring data, uploading videos, and accessing curriculum activities
Camtasia and Technology Tools	Provides practice opportunities for video editing and annotating coaching feedback for teachers
Classroom Environment Checklist, Classroom Observation Tool, Short Term Goal Report	Describes how to use the 3 measures to identify classroom management needs, instructional practices, and short-term goals for teachers
Coaching Strategies and Coaching Practices	Reviews coaching strategies (eg, side-by-side coaching, co-teaching, modeling, video reflective feedback, instructional planning)
Coaching Video Feedback	Provides practice opportunities for identifying coaching needs and formulating a plan to support teachers' instructional goals
Progress Monitoring	Reviews progress monitoring measures, including how to interpret and utilize progress monitoring data
Reporting and Data Interpretation	Describes how to interpret data from reports and risk index to differentiate coaching needs
eCIRCLE Professional Development Facilitation	Provides content training on facilitating eCIRCLE professional development (eg, classroom management, letter knowledge, phonological awareness, math, science, and oral language, daily schedule, and lesson planning)
Preschool Literacy, Math and Science Content	Reviews content on core TSR program instructional components

Project Reporting and Paperwork	Describes implementation plan, schedule, and reporting process and tools for communicating with program managers, administrators, teachers, and TSR staff
---------------------------------	---

Teacher professional development. First- and second-year TSR teachers complete 22 online professional development courses that are facilitated by their assigned coaches. The professional development content primarily covers the following areas: phonological awareness, vocabulary development, writing, math, science, print awareness, lesson planning, and intentional teaching. Third-year TSR teachers attend 4 webinars on various content (eg, daily schedule, lesson planning, intentional teaching, and reflection) throughout the school year.

Coaching and Learning Sessions. Coaching models have been found to improve teachers' instructional practices through individualized feedback and support.² Teachers in the TSR program receive targeted coaching based on their instructional goals and needs. Coaches are trained to use a data-driven approach that encompasses the use of several key observational measures (eg, Classroom Environment Checklist, Classroom Observation Tool, Short-term Goal Setting System). In the TSR coaching model, coaches provide performance-based feedback based on data gathered from the observational tools. By doing so, coaches are able to help teachers attend to specific instructional practices and use data to develop instructional goals and instructional plans to track teachers' progress over time (eg, beginning of year, middle of year, end of year). This is the basis of the continuous improvement routines that aim to minimize gaps between actual performance and possible performance, which is often accomplished by making incremental improvements to a particular process or skill. The continuous improvement cycle begins by assessing where teachers are in the quality of their practice (analyzing data), as well as the individual needs of children in the classroom; reflecting on these needs to set goals for improvement (planning); practicing goals by engaging in professional development and practice activities; and assessing the teacher's progress to begin the cycle again with a new set of goals (Figure 2). Based on data from the classroom observational measures, coaches work with teachers to set goals to improve classroom instruction.

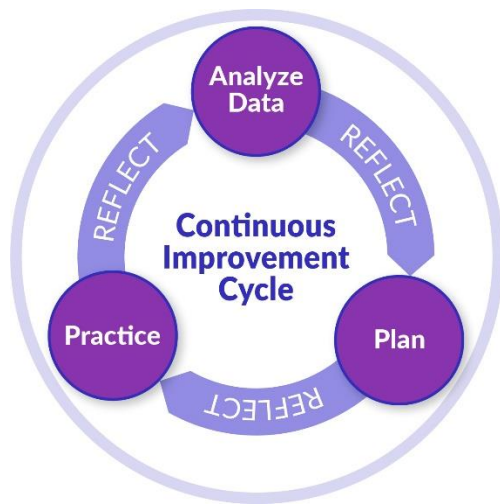


Figure 2. TSR coaching continuous improvement feedback loop.

Although the TSR program is primarily delivered to teachers through face-to-face coaching models, remote coaching delivery models have recently been used as a way to support scalability and access to the program.¹¹ Through remote coaching delivery models, the TSR program is able to work with teachers in more geographically isolated areas. Teachers record and upload videos of their classroom instruction. Coaches provide annotated feedback on the videos and schedule video calls with teachers to review this feedback.

Continuous Improvement Efforts

The delivery and support systems not only allow for implementation of the TSR program at scale, but also allow for engagement in a cycle of continuous quality improvement. Implementing programs at such a large scale requires ways to ensure that programs are implemented with integrity and that programs have the desired effects. Throughout the implementation of TSR, we use a variety of quality improvement metrics, which consist of observational data on teachers' and coaches' practices, child assessment data, and administrator surveys. The quality improvement framework, in conjunction with support embedded within the TSR program (eg, coaching, online suite of resources), allows us to understand whether the program continues to have positive impacts on teachers and children.

Measures of Quality Improvement

In efforts to continually evaluate and improve the quality of the TSR program, we use several key quality improvement measures. Data from these measures are used to inform key staff and stakeholders about changes needed to improve the TSR program. The sections below describe the key quality improvement measures for 4 specific participant groups (administrators, coaches/coordinators, teachers, and students).

Administrator/lead agency training and surveys. The TSR program facilitates 4 training sessions a year for school administrators. The first session is delivered by community coordinators and coaches, and the training primarily focuses on the logistics and expectations of implementation. The second session focuses on how sites can access and utilize TSR resources (including a workforce registry and electronic suite of instructional resources). The third session is content specific and varies from year to year; topics are selected based on information gathered from site visits and quality improvement data. For example, one year, content for this training focused on lesson planning and daily schedules and how administrators could support these efforts because of noted challenges that teachers experienced in these areas. The last training session focuses on sharing implementation data and progress updates about participating children and teachers. The last session also includes time for administrators to complete a survey. At the end of every school year, the TSR program also collects survey data from administrators, coordinators, coaches, and teachers. Survey questions for administrators target specific domains that inform program implementation (eg, participation years, coaching, professional development, progress monitoring, interest in webinars, CLI Engage, benefits and challenges; see Table 4 for sample survey questions for administrators). Responses from survey data are analyzed and synthesized for administrators, coordinators, coaches, and teachers.

Table 4. Sample TSR Administrator Questions

- | |
|--|
| <ol style="list-style-type: none"> 1. How many years has your site participated in the Texas School Ready (TSR) program? 2. Were you informed about the coaching calls between the TSR coach and teachers at your school? 3. Did you receive a coaching calendar each month? 4. How do you assist teachers in utilizing the information received in the administrator training (provided in January) about the “Daily Schedule”? |
|--|

5. Did you utilize CLI Engage to check on your teachers' assessment progress?
6. What has been the most beneficial thing about the TSR program for your site?
7. What has been the most challenging aspect of the TSR program for your site?

Coach observations. To ensure quality across TSR coaches, we developed a new set of generalizable coaching competencies. The competencies are specific coaching behaviors derived from a decade's worth of coaching interventions.¹² CLI has identified 79 competencies across 7 competency areas: (1) Adult Learning Theory; (2) Characteristics of Effective Specialists; (3) Observation Skills; (4) Providing Feedback; (5) Fostering Reflective Thinking; (6) Demonstration and Articulation; and (7) Supporting Continuous Improvement. Two members of the CLI university staff conduct 5 site visits each in the spring of each academic year. The university staff members aim for adequate geographical coverage across the state, resulting in 10 site visits conducted in various parts of the state. University staff members observe coaching sessions conducted by TSR coaches and coordinators—a subset of these sessions are preselected by CLI staff to ensure that observations are conducted with a variety of TSR coaches and coordinators. A different set of TSR coaches and coordinators are observed each year of the 3-year TSR program. Subsequently, members of CLI staff are able to observe and provide feedback to approximately half of the TSR coaches and coordinators employed across the state.

Teacher observations. Two teacher observation measures are used to monitor the quality of instruction and measure whether teachers are benefitting from participating in the TSR program.

Teacher Behavior Rating Scale (TBRs). Program managers and trained research assistants used the TBRs to document changes in teacher behaviors.¹³ The TBRs measures (a) responsive teaching behaviors, (b) lesson plans/dynamic assessments, (c) centers, (d) book-reading behaviors, (e) print and alphabet knowledge, (f) phonological awareness, (g) written expression, (h) oral language use with students, (i) math, and (j) team teaching. Developed as a way to quantify teacher behaviors over time and as a process measure to inform and guide mentors working with individual teachers, gains in the TBRs have been predictive of greater gains in children's language and literacy scores. Inter-rater reliability for the TBRs subscales is high, with estimates ranging from .80 to .98; additionally,

internal consistency estimates exceed .70 for all subscales. Figure 3 shows the total TBRs scores for teachers participating in the TSR program during the 2016-2018 school years. The figure shows that teachers participating in the TSR program made gains on the TBRs during the academic year; the figure also shows that teachers who participated for 2 years not only started with higher TBRs scores, but also continued to make gains in instructional quality during the year. Figure 3 shows the first- and second-year results of teacher instructional behaviors.

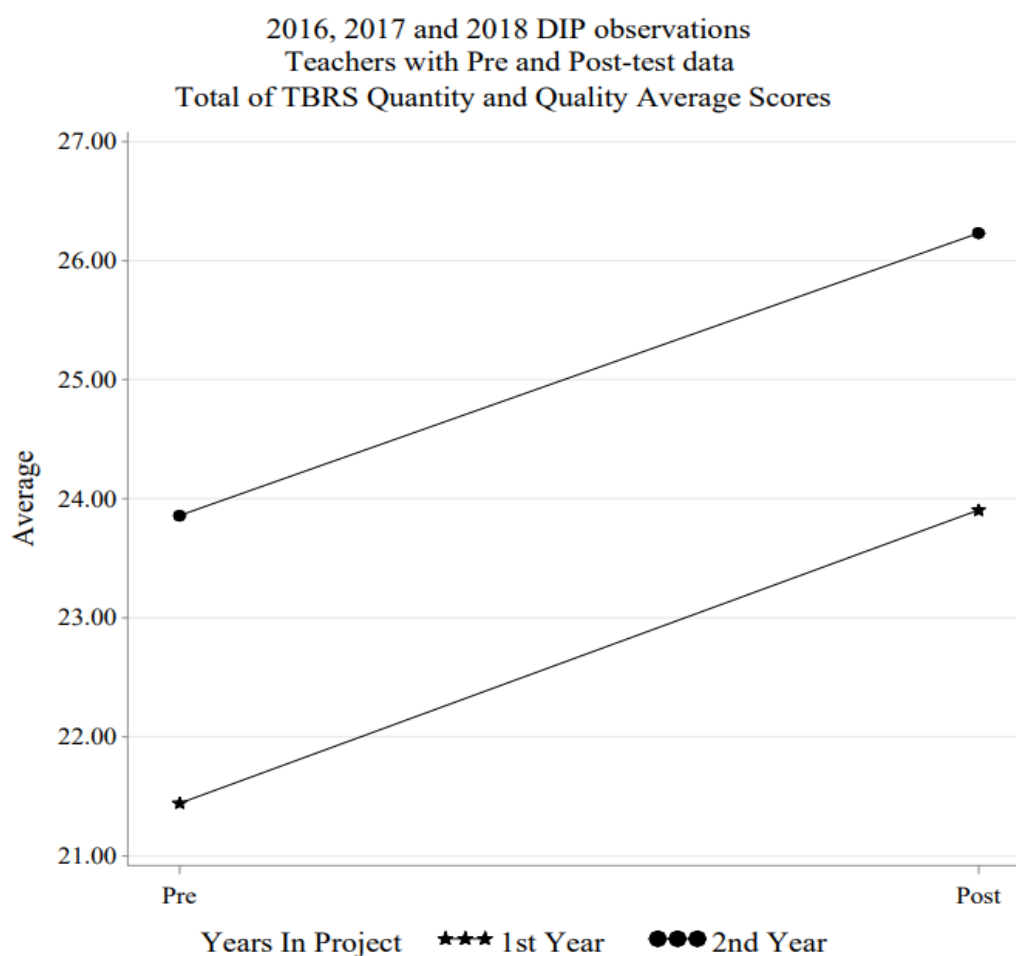
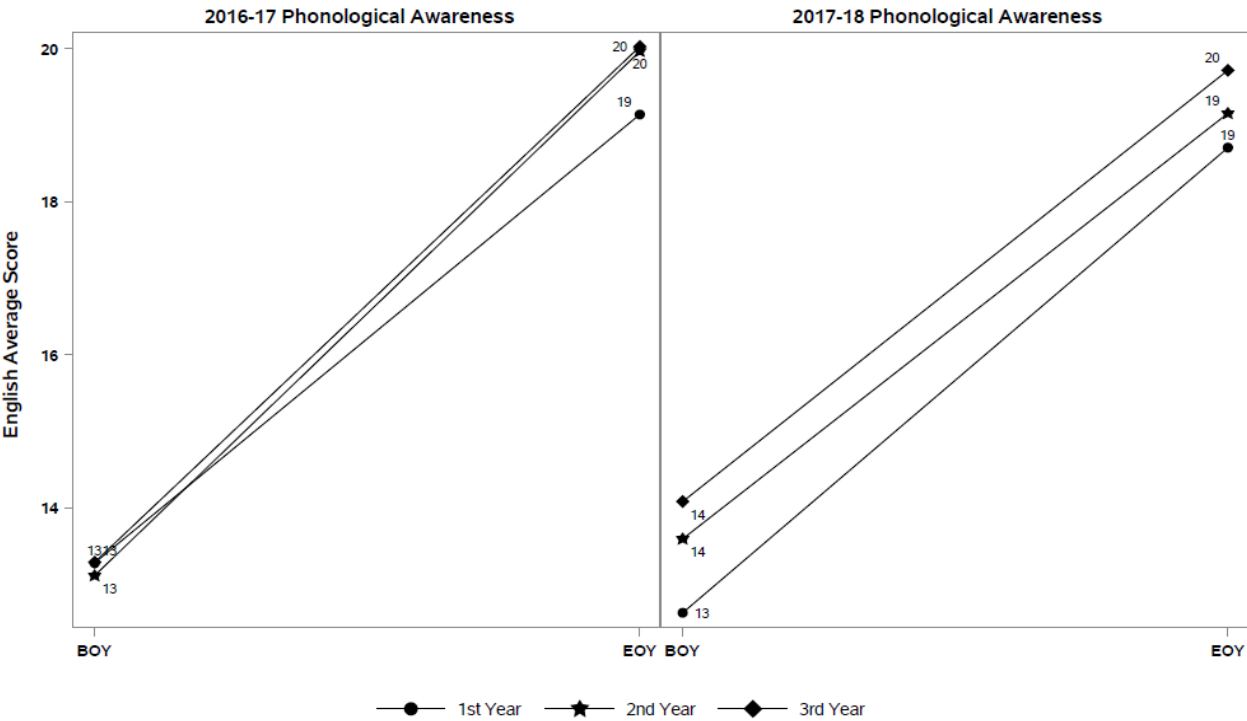


Figure 3. Teacher Behavior Rating Scale.

Classroom Observation Tool (COT). Coaches use the COT to capture teaching practices that have been linked to child outcomes.^{14,15} Coaches observe a 2-hour block of teachers' instructional practices and use data to develop instructional goals and instructional plans to track teacher's progress over time. Beginning-of-the-year (BOY) observations occur September-October and middle-of-the-year (MOY) observations occur February-March. The COT domains include: (a) classroom management and community, (b) social and emotional development, (c) center and independent workstation activities, (d) oral language/use, (e) read-alouds, (f) phonological awareness, (g) print knowledge, letter knowledge, and early reading, (h) written expression, (i) math, (j) science, and (k) English-language learners; (l) student progress monitoring, assessment, and lesson planning. Inter-reliability estimates ranged from .73 to .87.

Student assessments. CIRCLE Progress Monitoring (CPM) is used to monitor children's learning and is a critical component of the TSR program. Teachers are required to complete CPM at 3 time points during the implementation school year. Coaches use CPM results to help teachers individualize student learning and modify instructional practices. The CPM measurement tool is aligned with the Texas Prekindergarten Guidelines and Head Start Early Learning Framework. The assessment includes observation measures (eg, book and print) and direct assessments (eg, phonological awareness, letter naming). CPM reports include specific activities (by grouping level) and help teachers integrate results into their instructional planning. Figure 4 shows an example of CPM data for students' growth in phonological awareness and rapid letter naming during 2016-2018 for teachers who participated in the TSR program for 1, 2, or 3 years. These types of reports are generated throughout the year and shared with key stakeholders of the TSR program. Data from these reports help CLI staff identify students who are and are not making gains throughout the year and to then intensify support provided to teachers and coaches in the learning areas in which children are struggling the most.



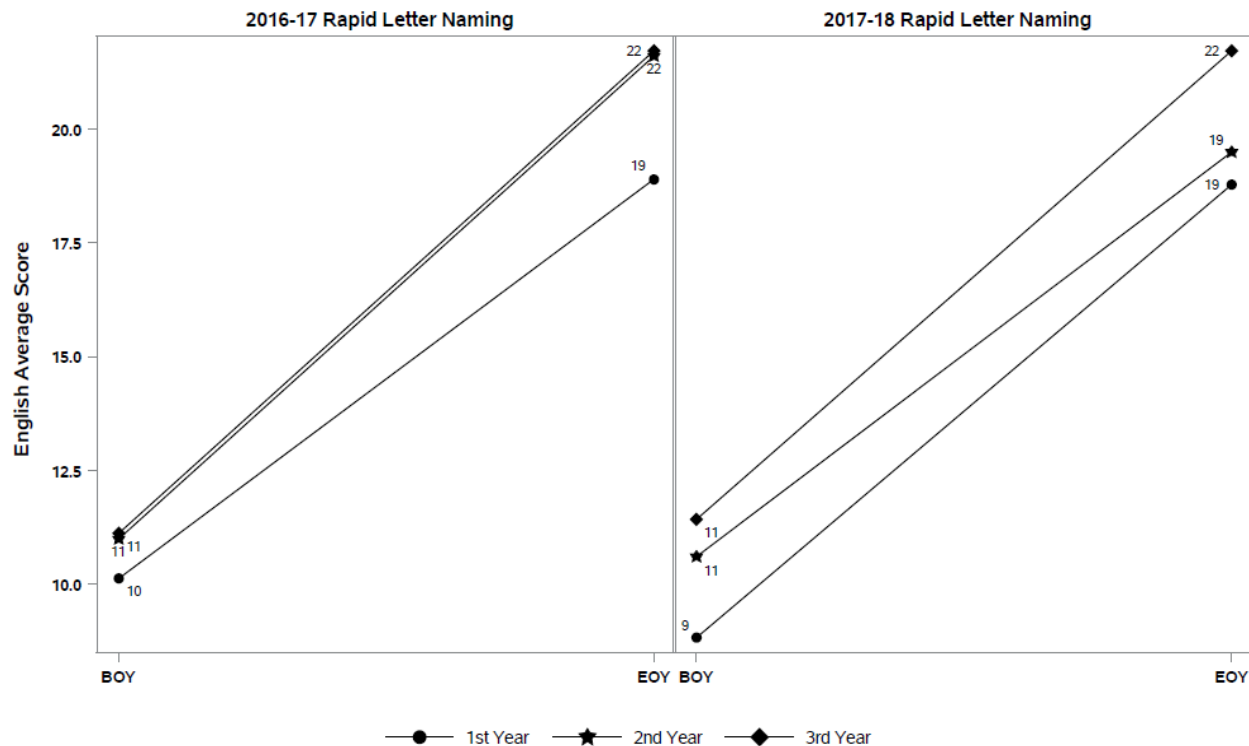


Figure 4. CIRCLE Progress Monitoring data.

Conclusion

Research on traditional methods of implementing and scaling up educational programs fails to motivate deep implementation, sustained change, or buy-in among practitioners.¹⁶ Thus, to implement TSR in ways that were both scalable and sustainable, we enlisted support from the larger community, provided professional development for educators and others who were expected to incorporate new practices, and made sure that TSR was aligned with existing school priorities. Key delivery and support systems are used to bring TSR to scale in ways that are sustainable and responsive to the needs and capacity of community sites across the state. The effectiveness of support systems, in particular, are typically contingent on the knowledge and skill levels of key participants (eg, coaches need sufficient content knowledge to support professional development around specific content areas).¹⁷ Additionally, key measures of quality improvement are continually used to examine the effectiveness of the TSR program for participants (administrators/lead agents, coordinators/coaches, teachers,

and students). Data from these measures inform the content of training sessions and support provided to community sites. Processes across the delivery and support systems within the TSR model can inform implementation and scale-up efforts for other service-oriented programs.

References

1. Berman P, McLaughlin MW. Implementation of educational innovation. *Educ Forum*. 1976;40(3):345-370. doi:10.1080/00131727609336469.
2. Cohen DK, Ball DL. Innovation and the problem of scale. In: Schneider B, McDonald S, eds. *Scale-up in Education: Ideas in Principle*. Lanham, MD: Rowman & Littlefield; 2007;1:19-36.
3. Coburn CE, Stein MK, eds. *Research and Practice in Education: Building Alliances, Bridging the Divide*. *Choice Rev Online*. 2010;48(04). doi: 10.5860/choice.48-2214.
4. Klingner JK, Boardman AG, McMaster KL. What does it take to scale up and sustain evidence-based practices? *Exceptional Child*. 2013;79(3):195-211. doi: 10.1177/001440291307900205.
5. Wandersman A, Duffy J, Flaspohler P, et al. Bridging the gap between prevention research and practice: the interactive systems framework for dissemination and implementation. *Am J Community Psychol*. 2008;41(3-4):171-181. doi: 10.1007/s10464-008-9174-z.
6. Landry SH, Anthony JL, Swank PR, Monseque-Bailey P. Effectiveness of comprehensive professional development for teachers of at-risk preschoolers. *J Educ Psychol*. 2009;101(2):448-465.
7. Borko H. Professional development and teacher learning: mapping the terrain. *Educ Researcher*. 2004;33(8):3-15. doi:10.3102/0013189x033008003.
8. Lemons CJ, Toste JR. Professional development and coaching: addressing the “last mile” problem in educational research. *Assess Effective Intervention*. 2019;44(4):300-304. doi: 10.1177/1534508419862859.
9. Landry SH, Swank PR, Smith KE, Assel MA, Gunnewig SB. Enhancing early literacy skills for preschool children: bringing a professional development model to scale. *J Learning Disabil*. 2006;39(4):306-324. doi:10.1177/00222194060390040501.

10. Simon NS, Johnson SM. Teacher turnover in high-poverty schools: what we know and can do. *Teachers College Record*. 2015;117(3):1-36.
11. Whitebook M, Sakai L. Turnover begets turnover: an examination of job and occupational instability among child care center staff. *Early Child Res Q*. 2003;18(3):273-293.
12. Johnson LR, Pai SA, Bridges M. Advancing the early childhood workforce: implementation of training and retention initiatives in the bay area. Policy Brief 04-1. Policy Analysis for California Education, PACE (NJ1). <https://eric.ed.gov/?id=ED491700>. 2004.
13. Landry SH, Crawford A, Gunnewig S, Swank PR. Teacher Behavior Rating Scale (unpublished instrument). University of Texas Health Science Center at Houston; 2002.
14. Crawford AD, Zucker T, Van Horne B, Landry SH. Integrating professional development content and formative assessment with the coaching process: the Texas School Ready model. *Theory Into Practice*. 2016;56(1):56-65. doi:10.1080/00405841.2016.1241945.
15. Crawford AD, Zucker TA, Williams JM, Bhavsar V, Landry SH. Initial validation of the prekindergarten Classroom Observation Tool and goal setting system for data-based coaching. *Sch Psychol Q*. 2013;28(4):277-300. doi:10.1037/spq0000033.
16. Means B, Harris CJ. Towards an evidence framework for design-based implementation research. *Yearbook of the National Society for the Study of Education*. 2013;112(2):350–371.
17. Piasta SB, Justice LM, O'Connell AA, et al. Effectiveness of large-scale, state-sponsored language and literacy professional development on early childhood educator outcomes. *J Res Educ Effectiveness*. 2017;10(2):354–378. <https://doi.org/10.1080/19345747.2016.1270378>