



Culture of Continuous
Learning Project



Strengthening Continuous Quality Improvement Practices in Early Care and Education through a Breakthrough Series Collaborative: Evaluation Report

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Overview

Young children benefit from high-quality early care and education (ECE) programs.¹ One way to ensure quality is to promote early educators' use of evidence-based practices. To that end, the Breakthrough Series Collaborative (BSC) is an innovative, flexible continuous quality improvement (CQI) methodology that uses organizational-level coaching to help program administrators and educators apply evidence-based practices to support children's well-being and adapt these practices to meet children and families' needs in their unique ECE contexts.²

For the BSC in early childhood contexts, teams from ECE centers—including leaders, educators, support staff, and parents—are brought together to implement improvements through rapid cycle testing, peer learning, and data-driven decision-making. These BSC teams choose from a set of evidence-based goals and practices to test in their ECE context through iterative cycles that help determine whether each small change in practice resulted in improvement.³ A broad collection of activities—including day-long learning sessions, monthly all-team calls, and monthly affinity group calls—helps teams within a BSC build connections among themselves and learn from each other. Each BSC also has coaches who provide ongoing quality improvement support, including coaching on using tools to support data-based decisions about whether a change in practice leads to an improved outcome. Although the BSC methodology has been effective in improving practice and outcomes in sectors such as health care, education, and child welfare, evidence in ECE contexts is still emerging.⁴

The goal of the Culture of Continuous Learning (CCL) project is to explore the implementation and outcomes of a BSC in ECE centers and systems. This report summarizes findings from Phase II of the CCL project, which examined the BSC as a methodology to support the use of evidence-based practices in ECE and sought to add to the evidence base for the CCL Theory of Change.⁵

Findings are drawn from a longitudinal mixed-methods case study that examined the implementation and outcomes of three BSCs supporting social and emotional learning (SEL) practices in a total of 19 Head Start and child care centers across three states. Each participating center formed a BSC team. Data sources included administrative data (e.g., BSC applications and attendance records), focus groups and key informant interviews with BSC team members and BSC staff, and surveys with BSC team members and with other staff and parents at the ECE centers. Data were collected at four timepoints: T1 (baseline, before the BSC started, March–April 2024), Time 2 (mid-point, during BSC implementation, October–December 2024), T3 (post-BSC, April–June 2025), and T4 (follow-up, six months after the conclusion of the BSC, October–December 2025).

Key Findings

BSC participation varied across centers, but centers with lower turnover and stronger organizational climate at baseline participated in more BSC activities.

- Six of the centers in the case study were characterized by “robust” participation in BSC activities, whereas 13 centers were “less robust.”
- Centers with lower turnover and stronger organizational climate at baseline participated more in BSC activities than centers with higher turnover or weaker organizational climate scores at baseline. Other facilitators of BSC participation included strong leadership support and encouragement; organizational culture of continuous learning; peer accountability; a collaborative team culture; unrestricted stipends; flexibility in BSC design and delivery; and financial, credentialing, and workforce supports.
- Barriers to BSC participation included lack of time, insufficient staffing and organizational capacity, unclear goals and expectations of the BSC, lack of participation from other teams, and technology platforms that were difficult to use.

Increases in CQI practices were both sustained and spread throughout ECE centers, especially among centers that robustly participated in BSC activities.

- Some indicators of CQI practices significantly increased within centers from baseline to post-BSC, and these gains were sustained six months later.
- Centers with more robust BSC participation showed even greater increases in quality improvement practices over time than centers with less robust participation.
- Although only BSC team members showed significant increases in CQI practices at post-BSC (T3), both BSC team members and center staff who did not participate directly in the BSC showed increases in CQI practices by follow-up (T4), suggesting spread in intra-organizational learning of CQI.
- In qualitative data, BSC team members described the BSC as building stronger communication and collaboration, both within their centers and across BSC teams.
- Although survey reports of overall data use did not significantly increase across all survey respondents, administrators showed significantly greater increases in data use compared to teachers and other staff. Additionally, in interviews and focus groups, BSC team members across roles described meaningful shifts toward becoming more comfortable using data to guide decisions and having a more inquiry-based mindset.

Some outcomes of interest improved over time, but findings were mixed overall.

Evidence of both increased positive outcomes over time and *spread* of these outcomes beyond BSC team members varied across quantitative and qualitative data sources. For example:

- Survey measures of short-term outcomes such as organizational climate and shared leadership significantly decreased from baseline (T1) to post-BSC (T3). There were also no significant changes over time in survey measures of self-efficacy or attitudes and beliefs toward SEL and CQI. In contrast, qualitative data described improved workplace relationships and organizational climate, increased levels of distributed leadership across staff and parent roles, and increased confidence and intentionality in approaching both SEL and CQI among staff.
- For long-term outcomes, survey measures of family engagement reported by both staff and parents decreased from baseline (T1) to post-BSC (T3), and there were no significant changes in survey measures of SEL-promoting classroom practices, perceptions of children's challenging behaviors, and employee retention. Furthermore, decreases in measures of organizational climate, SEL culture, and family engagement from baseline to post-BSC in the full sample did not vary by BSC participation level. In contrast, the qualitative data described increases in some of the same longer-term outcomes: improved family engagement strategies and improved SEL classroom practices and environments.
- Facilitators of the spread of BSC practices to center staff who did not participate directly in the BSC included individuals who acted as champions within centers. Barriers to spread included siloing between classrooms and centers and the tendency for nonparticipating staff to not see themselves as part of the process.

BSC team members reported high levels of satisfaction with the BSC methodology and suggested that some BSC strategies were likely to be sustained beyond the end of the BSC.

- The majority (90%) of feedback survey respondents reported that they would recommend participating in a BSC to staff in other child care/Head Start centers. Likewise, the majority (88%) of final feedback survey respondents were "very satisfied" or "moderately satisfied" with their BSC

experience. In-person learning sessions were a highlight that BSC team members wanted to see more frequently.

- BSC team members identified four key areas in which BSC strategies were likely to be sustained beyond the end of the BSC: SEL strategies, family engagement, a CQI mindset, and organizational climate. BSC team members identified three facilitators that supported sustainability: practices with low implementation burden, the integration of practices into existing operations, and alignment of practices with broader systems, such as state quality improvement systems. BSC team members identified two barriers to sustainability: time and competing priorities, and staff turnover. BSC team members also identified the need for further support to help them sustain CQI practices, particularly when onboarding new staff and continuing to make sense of data.

Study Limitations

There were several limitations to this study, including reliance on self-report data, sample size and attrition, lack of a comparison group, length of the sustainability period, and the use of multiple statistical analyses without adjustment for multiple comparisons. In addition, this study could have included additional baseline and implementation-level factors in analyses.

Summary and Conclusions

Overall, across 19 centers in three states, there was evidence that mechanisms of change and some outcomes theorized to be related to BSC participation changed in a positive direction over time.

The clearest and most consistent finding was that BSC participation was related to an increase in CQI practices within ECE centers, such as using tools to identify areas for improvement and designing a change or strategy to try out. Increases in CQI practices were both sustained and spread throughout ECE centers, especially among centers that robustly participated in BSC activities. The BSC also successfully created a collaborative learning community across ECE centers. In-person peer learning and cross-center collaboration were among the most consistently and enthusiastically valued features of the BSC. Despite many competing demands and limited time and staffing, centers made a strong effort to participate in the BSC because they valued connecting with staff from other ECE centers; in some cases, these connections lasted beyond the project. BSC team members shared that this type of cross-center peer support is uncommon in their typical professional development activities and was a unique and highly valued feature of the BSC.

Evidence of change in short- and longer-term outcomes was mixed. Survey measures showed no significant improvements in SEL-promoting classroom practices, challenging behaviors, or employee retention over the course of the study. Several measures of organizational climate and family engagement unexpectedly declined during the BSC period, although most returned to baseline levels by follow-up. In contrast, qualitative data consistently described positive changes in organizational climate, educators' knowledge and attitudes about SEL, and classroom SEL practices that the survey measures did not reflect. In focus groups and interviews, BSC team members described concrete changes to how they structured their classrooms, communicated with families, supported children's emotional development, and approached problem-solving with colleagues. Discrepancies between the survey and qualitative data may be explained by several factors, such as the length of the BSC, the number of outcomes measured, ceiling effects, and structural changes at ECE centers. Given the discrepancies in findings regarding outcomes across quantitative and qualitative measures, further research and larger-scale studies are needed to strengthen the evidence regarding outcomes. See the Summary and Conclusions section in the full report for more details.

Overall, this study's findings indicate that the BSC is a promising professional development methodology that improves CQI practices within and across ECE centers. States should therefore consider the BSC as a method to address CQI in their quality improvement systems. Specific findings about facilitators and barriers of BSC implementation—such as access to unrestricted stipends and inaccessible technology, respectively—are factors for states to keep in mind when developing a roll-out of and/or scaling up a BSC initiative. Additionally, ECE centers should consider how the BSC methodology can be used in an ongoing way to support CQI in classroom-based and organization-wide practices. The peer-to-peer connections that the BSC fosters, both within and (especially) across centers, are a unique strength. Another feature of the BSC that makes it attractive to centers is its flexibility as a method that can be used to support the adoption and spread of evidence-based practices in many different content areas. Based on this study's findings, centers should consider ways to make the collection and use of data for decision-making a regular part of staff members' workday routines, from administrators to teachers and other staff. Centers should also consider how characteristics such as staff turnover affect BSC success; turnover emerged as a barrier both to implementation and to sustaining positive practice changes over time.



Introduction

Young children benefit from high-quality early care and education (ECE) programs.⁶ One way to ensure that ECE programs are of high quality is to promote the use of evidence-based practices by early educators. There are many methods to promote the use of evidence-based practices in ECE settings, including individual or group training and individual or group coaching. However, only coaching approaches have demonstrated the ability to move *knowledge* of evidence-based practices into *actual use* of those practices. The Breakthrough Series Collaborative (BSC) is an innovative and flexible continuous quality improvement (CQI) methodology that uses organizational-level coaching to help educators adapt evidence-based content to support children's well-being in their unique ECE contexts. By building organizational capacity for continuous improvement, the BSC has the potential to help ECE centers move knowledge into practice and make sustained improvements to evidence-based practices that lead to better outcomes for children and families.⁷ Our literature review found that the BSC methodology is effective in bringing about improvements in practice and outcomes in other sectors such as health care, education, and child welfare, but evidence in the ECE context is still emerging.⁸

This study is part of the project, the [Culture of Continuous Learning Project \(CCL\)](#). CCL Phase II is funded from 2021-2026 by the Office of Planning, Research, and Evaluation in the Administration for Children and Families. The project team includes staff from Child Trends, UMass Boston, Mathematica, and JRA Consulting. The team has conducted a variety of activities to strengthen the field's understanding of continuous quality improvement approaches in early care and education. The BSC is a CQI methodology that is aligned with the Administration for Children and Families' (ACF's) goal of promoting quality early learning environments, and improved child outcomes.

The Culture of Continuous Learning (CCL) project explores the implementation and outcomes of a BSC in ECE *centers* and *systems*. The goal of the first phase of the CCL project (September 2016 – September 2021) was to explore the BSC as a CQI methodology to support the implementation and outcomes of evidence-based practices in ECE *centers*. Seven Head Start and child care centers within a single community participated in the BSC in Phase I of the CCL project. Findings from Phase I showed improvements in ECE organizational climate and teaching practices for supporting children's social and emotional learning (SEL) in the seven centers.⁹ Based on these promising findings, the CCL project entered Phase II (September 2021 – September 2026) to evaluate the BSC as a CQI methodology to support evidence-based practices in ECE centers *at a larger scale and in different contexts*, and to explore how ECE *systems* can support this CQI model into the future. Phase II used a longitudinal mixed-methods case study approach to examine the implementation and outcomes of three separate BSCs, one in each of three states. The study followed a total of 19 Head Start and child care centers as they engaged in BSCs to support children's SEL. Those 19 ECE centers were organized into three BSCs, each with five to ten ECE centers from one state. Each

participating center chose a group of individuals to directly participate in the BSC; this group is referred to as the “BSC team.” Each BSC is made up of multiple BSC teams. The “BSC staff” are the individuals who facilitated the BSCs and oversaw implementation in participating centers. They were trained in the BSC methodology and ECE program operations to play these roles (see Appendix A for definitions of BSC roles and terms). BSC coaches provided content expertise to teams.

A combination of five key elements within a single approach sets the BSC methodology apart from other quality improvement initiatives and professional development models.

1. **Change Framework.** A set of evidence-based areas of influence related to the focus for improvement that guides the work of the BSC. Each area of influence is further broken down into more specific goals and practices for BSC teams to test in their respective centers. The Change Framework helps create a shared language and serves as an anchor for teams to prioritize and integrate changes at their centers. In the CCL project, the Change Framework described four key areas that drive change in SEL at centers; these four areas are aligned with the Pyramid Model,¹⁰ a tiered intervention framework of evidence-based practices for supporting SEL in ECE settings (see Figure 1).
2. **Model for Improvement.** BSC teams use a CQI method to translate the areas of influence within the Change Framework into small tests of change. The Model for Improvement encourages teams to continually assess: 1) what they are trying to accomplish, 2) how they know whether the change they make results in improvement, and 3) what strategies they can test that will result in improvement. BSC teams use the Model for Improvement to identify and plan for what changes in practice they will test during “action periods” between collaborative-wide activities. Throughout the BSC, teams are encouraged to conduct small tests of change in all areas within the Change Framework using Plan-Do-Study-Act (PDSA) cycles. This iterative method requires team members to document what they tested and the results of their tests to help determine if each small change in practice resulted in improvement.¹¹

Plan-Do-Study-Act Cycles

 - **Plan-** Look at the current practice. Define a test for change. Create a plan for improvement.
 - **Do-** Implement the plan.
 - **Study-** Study the results.
 - **Act-** Adjust the plan.
3. **Cross-role teams.** Each BSC team is comprised of four to eight individuals with varying roles: a team leader (typically a center director or other administrator), teachers (who have direct influence in classrooms), and a family member with a child enrolled or recently enrolled at the center. Varied perspectives within a team can strengthen the collective work of each participating center and activate influence for change at several levels throughout the center. Teams meet regularly (such as every two weeks) to plan their tests of change and discuss the related data.
4. **Shared learning environment.** A broad collection of activities helps the BSC teams build connections among themselves and learn from each other. BSC team members participate in day-long learning sessions four times throughout the BSC, monthly all-team calls, and monthly affinity group calls that allow them to talk in smaller groups with others in similar roles (for example, parents from different centers). They also share materials via an online learning community (i.e., SharePoint for Phase II of the CCL project).
5. **Coaches.** Each BSC has a team of expert coaches who bring experience with the areas of focus within the Change Framework and reflect the roles of the team members. In Phase II of the CCL project, the coaches had experience in the Pyramid Model, experience as an early educator and/or administrator, and experience supporting parent advocates. Coaches were prepared to support the use of evidence-based SEL practices for high-quality early learning. The coaches share content

knowledge during the learning sessions and at all-team calls and facilitate affinity group meetings related to SEL topics. They also provide ongoing support on the content and processes of quality improvement: helping teams identify small evidence-based changes in practice to test in their respective centers, encouraging team members to contribute ideas for adapting evidence-based practices for their local context, and coaching them in the use of tools that support data-based decisions about whether a change in practice leads to an improved outcome.

Figure 1. Key areas within the CCL Change Framework



This report summarizes the research questions, methods, and findings related to Phase II of the case study portion of the CCL project, which had two aims: (1) to evaluate the BSC as a methodology to support the implementation of evidence-based practices in ECE centers and systems and (2) to add to the evidence base for the CCL Theory of Change (see Appendix B), which was developed during Phase I of the CCL project. This report also includes a discussion of the findings, informed by the insights of participants of the BSCs in all three states, who reviewed preliminary findings with the research team and helped to interpret the study's findings. The findings in this report are organized according to the seven research questions^a noted below.

Primary Research Questions

1. **To what extent did centers participate in the BSC?** What are key facilitators and barriers to participation?
2. **Does participation in the BSC activate key mechanisms of change and are any improvements sustained six months after the conclusion of the BSC?** Specifically, are there increases in participants' use of data, quality improvement activities, psychological safety, individual self-efficacy, and team-efficacy? Are there any center-level or individual characteristics that are associated with the activation of key mechanisms of change? Is there an association between centers' level of participation in the BSC and change in key mechanisms?
3. **Does participation in the BSC improve short-term organizational and individual outcomes and are any improvements sustained six months after the conclusion of the BSC?** Specifically, are

^a Please note that the research questions as stated in various products from Phase II of the CCL project may differ based on the focus of the product and the intended audience for that product. As such, the seven research questions noted in this CCL Phase II Evaluation Report differ from the seven research questions noted in the approved CCL Phase II Analysis Plan.

there improvements in centers' organizational functioning (e.g., leadership at all levels, organizational climate) and individuals' attitudes and beliefs around SEL and CQI? Are there any center-level or individual characteristics that are associated with change in short-term outcomes? Is there an association between the centers' level of participation in the BSC and change in short-term outcomes?

4. **Does participation in the BSC improve longer-term organizational, classroom, and family outcomes and are any improvements sustained six months after the conclusion of the BSC?** Specifically, are there increases in employee retention, decreases in teacher-reported challenging behaviors, and improvements in SEL-promoting classroom practices and family engagement? Are there any center-level or individual characteristics that are associated with change in longer-term outcomes? Is there an association between the centers' level of participation in the BSC and change in longer-term outcomes?
5. **Do improvements in SEL and quality improvement practices spread beyond staff who directly participated in the BSC?** Are there any center-level or individual characteristics that are associated with spread of change in practices? Is there an association between centers' level of participation in the BSC and spread of change in practices?
6. **What changes do BSC participants see as being sustainable beyond the end of the project and what are key facilitators of sustainability?**
7. **To what extent were participants satisfied with their experience and what are their recommendations for improvement?**

Method

BSC implementation

Applying to the BSC

BSC staff recruited centers by emailing an invitation to information sessions and a link to an application to licensed ECE centers identified through state administrator lists, internet searches, and public Head Start rosters. The information meetings explained the goals of the CCL project, what a BSC is, potential benefits of participation, the timeline (12-18 months), expectations, and how to complete the application. Requirements for participation included that applicants were ECE centers with at least three classrooms and that they could commit a multilevel team that included at least one administrator, a family member, and at least two teachers (other relevant staff could also be included). ECE center leaders were encouraged to apply and a BSC staff member followed up with participants after the information meeting to ask if they had any questions about completing the application.

The BSC application included 28 questions covering a description of the center, the proposed BSC team composition, center experience with SEL, and center goals and rationale for participation. BSC staff reviewed all applications against eligibility criteria (center-based care, minimum three classrooms) and scored each on readiness and commitment to the BSC, ultimately inviting 23 centers to participate. Those that accepted the invitation were sent a welcome packet that reinforced the requirements for convening a BSC team and reminded centers that teams would test changes related to SEL at their centers, and that they would track and share monthly metrics. Each participating ECE center was offered a \$3,750 unrestricted stipend for participation over the course of the BSC (delivered in two payments).

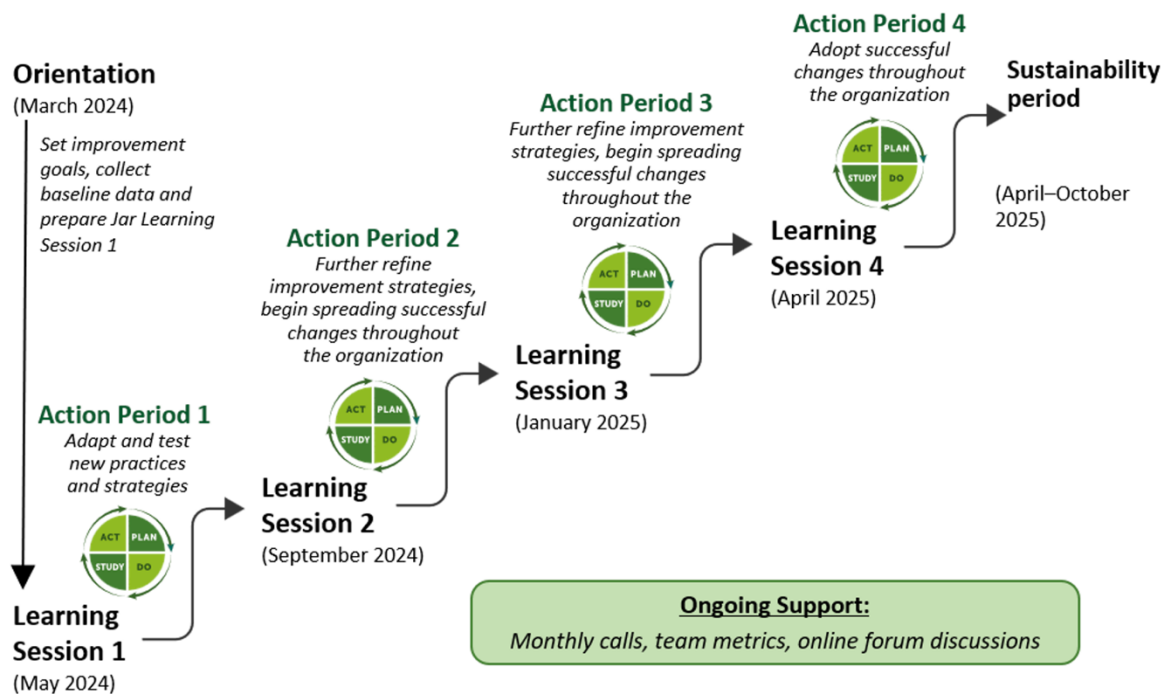
Shared learning environment

Orientation. To introduce team leaders to the BSC, each BSC held a 1-hour online call to explain what the BSC is, how to form their teams, and answer questions about participation. To orient teams, each BSC held a 3.5-hour orientation online. This orientation served to welcome team members to the BSC, explain what a BSC is, and preview the timeline and expected engagement. BSC staff also introduced the Change Framework that the teams would use to guide their work in the BSC.

Learning sessions. As shown in Figure 2, four learning sessions were held 3-4 months apart over the course of 12 months and provided the opportunity for BSC teams to go deeper into the Model for Improvement and identify strategies to test within the areas of influence within the Change Framework. Some learning sessions were held in person, whereas others were conducted virtually; this was a change from Phase I of the CCL project, which took place before the COVID-19 pandemic, when all learning sessions were held in person.

- In all three BSCs, learning session 1 (6.5 hours) was held in person. BSC staff introduced quality improvement methods such as the Model for Improvement, PDSAs, and the monthly metrics that teams would be asked to collect and submit each month. BSC team members also completed a baseline self-assessment that aligned with the Collaborative Change Framework.
- Learning session 2 (6 hours) was held in person for one BSC and virtually for two BSCs. Team members shared about the strategies they tested since the last learning session. BSC staff reinforced the Model for Improvement and helped teams improve their use of PDSAs to understand improvements at their centers. Team members planned more PDSAs and identified who would be involved in each. Coaches introduced SEL practices that centers could test across roles during the action period. The session included SEL-specific topics based on teams' interests.
- Learning session 3 (4.5 hours) was held virtually for all three BSCs. It introduced concepts related to scaling up practices that were working well, and to invite other staff or families at their center to engage in CQI practices. BSC teams were encouraged to continue testing new ideas, including SEL practices introduced by coaches during the learning session and monthly calls. The session included SEL-specific topics based on teams' interests.
- Learning session 4 (5.5 hours) was held in person for all BSCs and focused on planning for sustainability, including how to ensure that new CQI practices that centers found beneficial could be instilled in centers as regular practice.

Figure 2. BSC timeline



Action periods. Between each learning session was an action period where BSC teams planned and reflected together, tested PDSAs, and submitted monthly metrics. In months without learning sessions, BSC teams received ongoing support through monthly all-team calls. All-team calls convened all BSC teams within a state and typically covered content that helped bring the areas of the Change Framework to life. Example topics for the all-team calls included meaningful family engagement, reflecting on transitions, using a growth mindset, cultivating mentoring relationships, universal design for learning, and how to create a sense of community in centers. The all-team calls were also a time for teams to share about successes and problem-solve with peers to address challenges. In addition, during action periods, coaches led monthly affinity group calls that supported individual team members in their specific roles (as center directors, teachers, or parents). BSC teams were offered one-on-one consultation calls with coaches and BSC staff after learning session 2 and learning session 4.

Monthly metrics. During action periods, the BSC teams were asked to upload monthly metrics and forms documenting the PDSAs they tried to a Microsoft SharePoint site. Teams were asked to submit three monthly metrics: 1) classroom behaviors form (measured perceived challenging behaviors), 2) family engagement form (measured two-way communication with all families), and 3) staff climate survey. SharePoint also offered an online discussion board for participants to communicate between BSC activities.

Sustainability period. After the learning sessions ended, BSC teams were offered 3-4 monthly all-team calls throughout the remaining six months of the BSC. Some also participated in one-on-one phone calls with BSC staff to discuss their sustainability plans. To close out the BSC, each collaborative held a one-hour virtual celebration to review successes and share resources that teams could continue using at their centers to sustain change.

The project team sent professional development hours certificates to BSC team members. In states that had a central registry for professional development hours, the project team also submitted those hours by team member to the state registry.

Evaluation Methodology

This study used a longitudinal mixed-methods case study design that involved focus groups and key informant interviews with BSC team members and BSC staff, as well as surveys with BSC team members, staff, and parents at the ECE centers. The study also analyzed administrative data collected by BSC staff, including the BSC application that centers completed as part of the BSC recruitment process, attendance records for BSC meetings, feedback forms collected after each BSC learning session, and regularly tracked data (e.g., PDSA, monthly metrics) as part of BSC implementation.^b

A separate Methodology Report is available as a companion piece to this Evaluation Report. Please refer to the [CCL Phase II Methodology Report](#) for details on location selection and site recruitment methods; detailed sample characteristics; survey, interview, and focus group protocol content; BSC administrative data sources; the timing of data collection across data sources; construction of analytic measures; and analysis plans for both the qualitative and quantitative data, including addressing missing data in our analytic models.

Table 1 is reproduced from the CCL Phase II Methodology Report; it summarizes all data sources and the timing of their administration across four data collection time points: T1 (baseline, before the BSC started, March – April 2024), Time 2 (mid-point during BSC implementation, October – December 2024), T3 (post-BSC, April – June 2025), and T4 (follow-up, October – December 2025, six months after the conclusion of the BSC).

All measures were selected to align with the CCL Theory of Change, which was developed in Phase I of the project (see Appendix B). A logic model created for Phase II of the CCL project (see Appendix C) further details how the measures of this study align with the Theory of Change. Table D1 in Appendix D (Measures, Data Sources, and Respondents) also reproduces information from the Methodology Report; it summarizes the measures used for analysis, their data sources, and the timing of data collection from various respondents.



^b Phase II of the CCL project also conducted a landscape scan of QI and PD systems within both states and Head Start regions to describe and characterize what types of QI approaches are available to ECE educators and centers currently. Results from the landscape scan activities are reported elsewhere. This report only presents findings from the case study activities.

Table 1. Summary of data sources and timing of data collection

Data source	Description	T1 (Baseline)	Time 2 (Mid-point)	T3 (Post-BSC)	T4 (Follow-up)
Surveys					
BSC staff member surveys	Captured demographics and background information of BSC staff members.	X			
Center staff surveys	Collected survey data from administrators, teachers, and other staff at participating centers. Surveys collected information on center-level administrative data (e.g., staff turnover) as well as individual-level data (e.g., changes in knowledge, attitudes, and practices) over the course of the BSC. Some survey items were asked only of people in specific roles.	X		X	X
Parent surveys	Collected information on parents' perceptions of their level of collaboration with their child's center. Some survey items were only asked of parents who participated in the BSC.	X		X	X (BSC parents only)
Key informant interviews and focus groups					
State/regional leadership interviews	Discussion guides included these topics: • Knowledge of and buy-in for the BSC • Perceived benefits and challenges of the project • Structural elements of the state's QI/PD systems • Alignment between the state's QI/PD systems and the BSC • Practical considerations for offering a BSC within state systems	X			X

Data source	Description	T1 (Baseline)	Time 2 (Mid-point)	T3 (Post-BSC)	T4 (Follow-up)
BSC coaches and staff interviews/focus groups	Discussion guides included these topics: • Background about BSC coaches and staff • How the BSC compares to other experiences of QI • Factors that may have helped or hindered BSC participation • Perception of participant goals, needs, and expectations of the BSC • Reflection on BSC implementation • Perceived and observed changes for BSC participants • Sustainability of outcomes • Cost		X		X
BSC team member interviews/focus groups	Discussion guides included these topics: • State and center-level factors that may have helped or hindered BSC participation • Participant goals, needs, and expectations of the BSC • BSC elements that were most helpful and most challenging • Satisfaction/perception of BSC value • Feedback on the evaluation itself • Feedback on BSC implementation • Impacts of BSC participation • Spread of QI practices • Sustainability of QI practices • How the BSC compares to other experiences of QI • Cost		X		X

Data source	Description	T1 (Baseline)	Time 2 (Mid-point)	T3 (Post-BSC)	T4 (Follow-up)
BSC implementation data					
BSC application	Provided information about certain characteristics of each participating center, including whether the center was a Head Start center. Contributed to an index of BSC participation.	X			
Attendance logs	Documented attendance at all BSC activities. Contributed to an index of BSC participation.	X	X	X	X
Learning session feedback forms	Provided information about participants' satisfaction with BSC activities.	X	X	X	X
PDSA tracking data	Documented the number and focus of PDSA cycles conducted by BSC teams. Contributed to an index of BSC participation.	X	X	X	X
Monthly metric tracking data	Documented the number and consistency of monthly metrics tracked by BSC teams. Contributed to an index of BSC participation.	X	X	X	X

Analysis

The Child Trends evaluation team pre-registered our quantitative analysis plans with Open Science Framework. For descriptive analyses of quantitative measures, we report means and ranges on items and scales for the overall sample and for subgroups of interest (e.g., by centers with more and less robust participation, by role). We examined the survey data for statistically significant patterns of change over time among the outcomes of interest (see Appendix D) and the implementation of evidence-based practices beyond those immediately involved in the BSC. When reporting findings, we focus on statistically significant findings ($p < .05$), though we also highlight select marginally significant patterns ($p < .10$), given that some analyses have small sample sizes and a goal of this evaluation is to add to the evidence base for the CCL Theory of Change. Marginally significant patterns should be interpreted with caution and further examined in future studies. We also note whether the magnitude of change over time was small (e.g., an increase of 0.2 standard deviation units), moderate (e.g., an increase of 0.5 standard deviation units), or large (e.g., an increase of 0.8 standard deviation units).¹²

We used multilevel models (MLMs) to answer our research questions (repeated measurements nested in individuals and individuals nested in centers for individual-level outcomes, and repeated measurements nested in centers for center-level outcomes). Specifically, we used MLMs to examine changes from baseline (T1) to post-BSC (T3) and follow-up (T4) in mechanisms for change as well as short- and long-term outcomes related to the CCL Theory of Change (Appendix B). MLMs also tested for moderation to examine where changes over time varied based on level of participation in the BSC, baseline center-level factors (e.g., center size, paid planning time, turnover), and individual factors (e.g., role, years of experience). Additional MLMs also tested whether improvements in mechanisms and outcomes spread to non-BSC participants within ECE centers. Multiple imputation was used to handle missingness except where otherwise noted.

All qualitative data, including interviews and focus groups, were transcribed verbatim. We uploaded the transcripts into Dedoose, a secure, web-based qualitative data analysis platform. The research team used a directed approach to content analysis,¹³ involving both deductive (*a priori*) and inductive (emergent) coding. Once coding was completed, the team analyzed the data by running targeted queries to explore patterns related to the research questions, and through examination of code co-occurrence frequencies to explore themes of interest.

All data collected and used for the evaluation study—including quantitative and qualitative data from multiple participants and data sources (e.g., administrative data, surveys, interviews, and focus groups)—were analyzed for emergent themes related to each of the research questions. Please see the [CCL Phase II Methodology Report](#) for further details about our quantitative and qualitative analysis methods (including details about the specific models and the number of models we estimated).

Sample Characteristics

Center background characteristics

Table 2 shows the background characteristics of the centers that participated in the BSC and are part of our analytic sample. A total of 22 centers initially agreed to participate, but three centers withdrew from the study before or right after the first learning session (see Figure 3). The remaining 19 centers comprised our analytic sample.

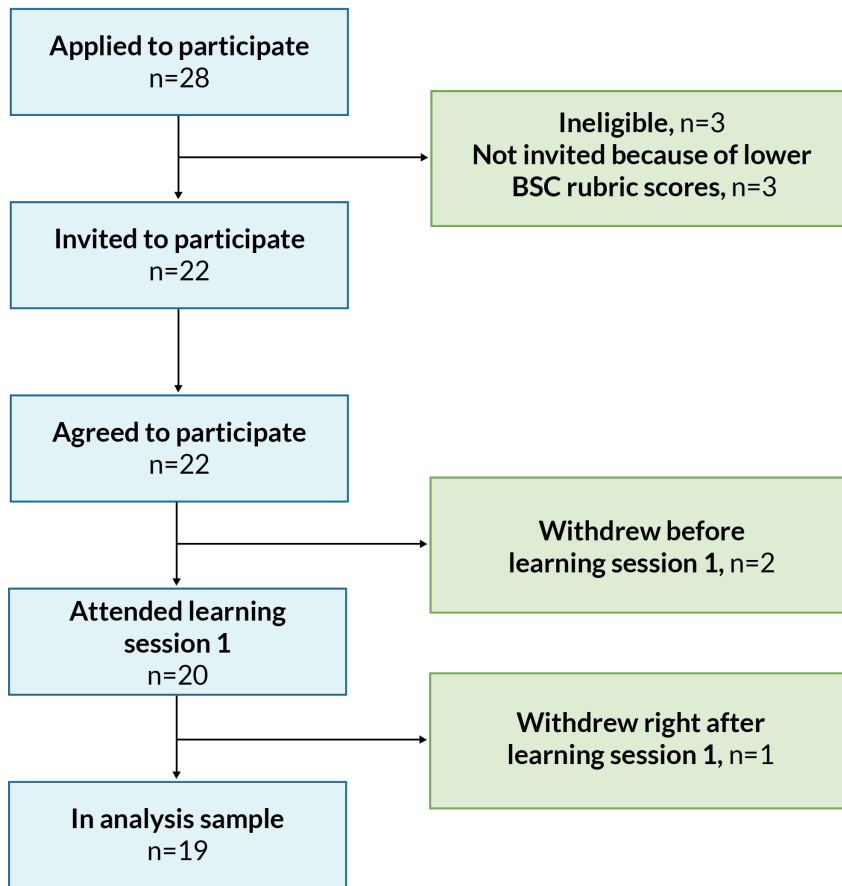
Table 2. Center background characteristics (n = 19 centers)

Characteristic	n	%
Program type		
Single-site child care center	5	26%
Multi-site child care center	8	42%
Head Start	6	32%
Non-profit	9	47%
Serves children who receive CCDF subsidy	15	79%
Age groups served		
Infants/toddlers	17	89%
Preschool	19	100%
Kindergarten	3	16%
School-age	3	16%
Languages spoken by staff when working directly with children		
English	19	100%
Spanish	11	58%
Another language	8	42%
Participates in quality rating and improvement system (QRIS)	14	74%
Is accredited (e.g. NAEYC)	8	42%

Source: Center BSC applications (2024)

Note: The categories for age groups served and language spoken by staff are not mutually exclusive, so they do not add up to 100 percent.

Figure 3. Center recruitment and enrollment in the study



Source: Center BSC applications (2024)

BSC team member background characteristics

In all, approximately 120 individuals were part of BSC teams. Of these, 98 (82%) completed at least one of the three surveys as part of the study (i.e., they completed a baseline, post-BSC, and/or follow-up survey) and were included in the analytic sample (see Appendix E for survey completion details by timepoint). Table 3 shows the number of centers and individuals who participated in qualitative data collection at Time 2 and T4.

Table 3. Characteristics of centers and BSC team members who participated in qualitative data collection

	Time 2			Time 4		
	State 1	State 2	State 3	State 1	State 2	State 3
Number of centers	6	3	6	5	2	6
Head Start	2	1	2	2	2	1
Number of participants	22	12	29	10	6	18
Administrators	6	5	8	4	1	6
Teachers/other staff	13	6	18	5	5	10
Parents	3	1	3	1	0	2

Although 98 BSC team members were included in the analytic sample for quantitative analyses, the sample size for models examining change in specific mechanisms and outcomes among BSC team members (reported below) varied based on which respondents were asked the relevant survey questions.

- For models examining change among BSC team members in data use, CQI practices, psychological safety, self-efficacy, leadership at all levels, comfort with SEL, beliefs about CQI, and staff-reported family engagement, the sample consists of 88 BSC center staff (i.e., administrators, teachers, and other staff). Parents were not asked to complete these items.
- For models examining change among BSC team members in teacher collaboration and SEL culture, the sample consists of 58 BSC teachers and other staff. Administrators and parents were not asked to complete these items.
- For models examining change among BSC team members in SEL practices and perceived challenging behavior, the sample consists of 40 BSC teachers. Administrators, other staff, and parents were not asked to complete these items.
- BSC parents completed a separate parent survey and are included, along with non-BSC parents, in analyses of parent-reported outcomes.

The majority (over 90%) of BSC team members were female. Tables 4 and 5 summarize other personal (Table 4) and professional (Table 5) background characteristics of those who participated in the BSCs. Participants' roles included administrators (e.g., directors, assistant directors), teachers (e.g., teachers, assistant teachers), center support staff (e.g., educational coordinators, instructional coaches, mental health specialists, cooks), and parents who participated in the BSCs. Throughout this report, when we refer to individual roles, these are the roles we are referencing. Additional details are provided in the methodology report (see CCL Phase II Methodology Report for more information).

Table 4. Personal background characteristics of BSC team members (n = 98 BSC team members)

Characteristic	n	%
Role		
Administrator (e.g., director, assistant director)	30	31%
Teacher (e.g., teacher, assistant teacher)	40	41%
Center support staff (e.g., educational coordinator, mental health specialist, cook)	18	18%
Parent	10	10%
Race/ethnicity		
Hispanic	19	19%
Non-Hispanic Black	5	5%
Non-Hispanic White	61	62%
Other or multiple races	5	5%
Missing	8	8%
Age		
18-24	3	3%
25-34	25	26%
35-44	41	42%
45-54	12	12%
55-64	8	8%
65 and above	2	2%
Missing	7	7%
Languages spoken at home		
English only	71	72%
Spanish	17	17%

Characteristic	n	%
Other	4	4%
Missing	6	6%
Household income		
\$10,000 to \$39,999	10	10%
\$40,000 to \$69,999	26	27%
\$70,000 to \$99,000	12	12%
\$100,000 to \$149,999	12	12%
\$150,000 to \$199,999	8	8%
\$200,000 and above	6	6%
Missing	24	24%

Source: T1, T3, and T4 Center Staff Survey and Parent Survey

Table 5. Professional background characteristics of BSC team members (n = 98 BSC team members)

Characteristic	n	%
Highest level of education		
High school diploma or equivalent	1	1%
Some college	17	17%
Associate's degree	13	13%
Bachelor's degree	30	31%
Some graduate school	7	7%
Master's or doctoral degree	23	23%
Missing	7	7%
Higher education fields of study		
Early childhood education	36	53%
Child development or developmental psychology	15	22%
Elementary education	9	13%
Other education-related field	13	19%
Not applicable ^{a, b}	30	
Teaching certificates or credentials		
Birth to 5 certificate or credential	48	55%
Other teaching or director certificate or credential	33	38%
Missing	19	22%
Not applicable ^a	10	
Years at current center		
Less than 1 year	8	9%
1 to 3 years	19	22%
4 to 5 years	16	18%
6 to 10 years	13	15%
11 to 15 years	9	10%
More than 15 years	17	19%
Missing	6	7%
Not applicable ^a	10	
Years at other early childhood centers		
None	21	24%
Less than 1 year	3	3%
1 to 3 years	11	13%
4 to 5 years	4	5%
6 to 10 years	14	16%
11 to 15 years	6	7%
More than 15 years	22	25%

Characteristic	n	%
Missing	7	8%
Not applicable ^a	10	

Source: T1, T3, and T4 Center Staff Survey and Parent Survey

Notes: The categories for higher education fields of study and teaching certificates or credentials were not mutually exclusive, so they do not add up to 100 percent.

^a Not reported by parents.

^b Reported only among those with an associate's degree or higher.

Findings

RQ1. To what extent did centers participate in the BSC?

Key Takeaways:

- BSC participation varied across centers, but all 19 centers participated in at least two learning sessions, and 16 centers conducted at least one PDSA cycle
- Centers with lower turnover and stronger organizational climate at baseline participated in more BSC activities
- Facilitators of participation:
 - Center-level: strong leadership support and encouragement, organizational culture of continuous learning, peer accountability, and collaborative team culture
 - Implementation-level: unrestricted stipends and flexibility in BSC design and delivery
- Barriers to participation:
 - Center-level: lack of time, insufficient staffing, and organizational capacity
 - Implementation-level: unclear goals and expectations, lack of participation from other teams, and technology

Participation in the BSC varied by center. To quantify centers' overall BSC participation, we analyzed the following metrics collected by BSC staff: a) attendance at the orientation and learning sessions, all-team calls, and affinity group calls; b) submission of monthly metrics; and c) number and areas of focus of PDSA cycles that were initiated. All centers participated in at least two learning sessions, and 16 of 19 centers conducted at least one PDSA cycle (see Table 6). Forty-seven percent of centers attended at least nine all-team calls. As can be seen by comparing the means to maximum possible values in Table 6, learning sessions and all-team calls were fairly well attended, whereas affinity group calls were attended far less consistently. Among the affinity group calls, senior/team leader calls had a higher attendance than teacher and parent calls. Overall, centers submitted an average of 13.1 monthly metrics over 11 months; on average, centers had 4.6 monthly submissions each for metrics 1 (classroom behavior) and 2 (family engagement), and 3.8 monthly submissions for metric 3 (organizational climate). We created a participation composite value by weighting^c each component of participation (Table 6) to create a continuous score with a maximum possible value of 11.85 (range: 2.2-11.1). Furthermore, we created a categorical version of the score in which the top third of scores (n = 6 centers) were categorized as "robust participation" while the bottom two-thirds were categorized as "less robust participation" (n = 13 centers).

^c Full explanation of the weighting can be found in the CCL Phase II Methodology Report.

Table 6. Center-level BSC participation (n = 19 teams)

Participation metric	Maximum possible	Mean	SD	Median	Min	Max
Number of learning sessions attended	5	4.5	0.8	5.0	3.0	5.0
Number of all-team calls attended	11-12	7.4	3.5	8.0	1.0	12.0
Number of senior/team leader calls attended	6-7	2.8	2.0	3.0	0.0	6.0
Number of teacher calls attended	5-7	1.9	1.7	2.0	0.0	6.0
Number of parent calls attended	6	1.3	1.7	1.0	0.0	5.0
Number of monthly metrics submitted	33	13.1	12.1	14.0	0.0	33.0
Number of PDSAs initiated	n/a ^a	6.8	6.1	6.0	0.0	21.0

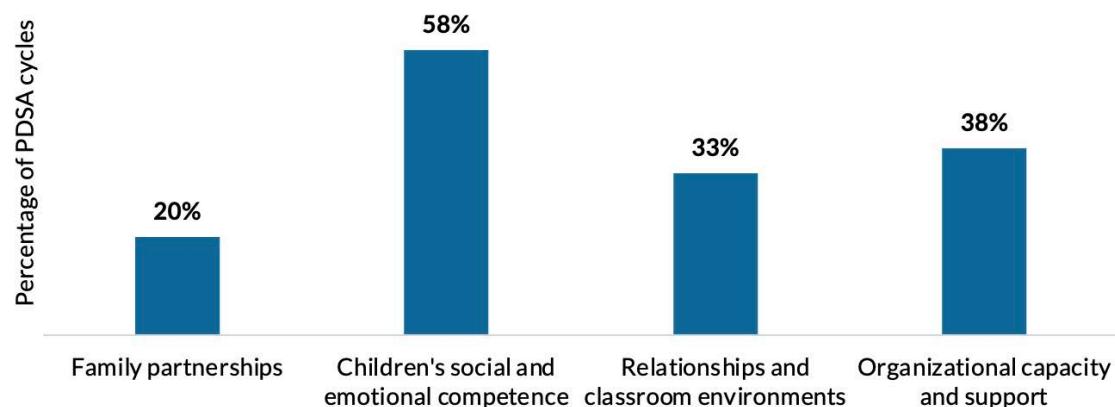
Source: BSC Implementation Data (2024-2025)

Note: The maximum number of calls varied by state, so a range is presented above.

^aNo specified number of instances

At post-BSC (T3), BSC participants reported the approximate number of hours they spent per month on different BSC activities. This included planning meetings with their BSC team, implementing PDSA cycles, collecting monthly metrics, and BSC calls. On average, BSC team members reported spending approximately 9 hours per month (range 0-49 hours per month) across BSC activities. Participants spent the most amount of time implementing PDSA cycles (average of 2.9 hours per month) and collecting and submitting monthly metrics data (average of 3.1 hours per month).

Participants developed PDSAs focused on four areas of influence for SEL-promoting practices from the Change Framework: 1) relationships and classroom environments, 2) social skills and emotional competencies, 3) family partnerships, and 4) organizational capacity and support. As shown in Figure 4, the most common focus of PDSAs was social and emotional competencies (58%), followed by organizational capacity and support (38%). Thirty-three percent of PDSAs focused on relationships and classroom environment, while 20 percent focused on family partnerships. Within these categories, participants implemented a variety of activities and named their PDSAs accordingly. Table 7 provides examples of PDSA names by category.

Figure 4. Percentage of PDSA cycles focused on each category (n = 111 PDSAs submitted)

Source: BSC Implementation Data (2024-2025)

Table 7. Examples of PDSA names by category

Family Partnerships	Children's Social & Emotional Competence	Relationships & Classroom Environments	Organizational Capacity & Support
• Family community gatherings • Snacks and chats with families at pick-up & drop-off • Weekly home connection notes	• Mistakes song • Color monster emotions lesson • Affirmations	• Story baskets • Emotions check-in chart • Adopting a “can do” approach	• Teacher well-being checks • Suggestion box • Staff recognition shout-outs • Summer staff meetings • Laughter as stress release

Source: BSC Implementation Data (2024-2025)

Facilitators to BSC participation

In focus groups and interviews, BSC participants—including BSC teams, staff, and coaches—identified several key facilitators that supported staff participation in the BSC. These facilitators operated at multiple levels, including the center, BSC implementation, state, and system levels. We describe these key facilitators below.

Center-level facilitators

Strong leadership support and encouragement. Active leadership support was a commonly cited facilitator across interviews and focus groups. Center directors who articulated a clear vision for why the BSC mattered helped staff make sense of the BSC methodology and encouraged their staff’s participation, which was critical in sustaining engagement over time. BSC coaches also observed that centers with the strongest participation tended to have directors who expressed genuine belief in the work and communicated that belief consistently to their teams. Importantly, supportive center directors also provided logistical support. For example, directors covered classrooms themselves so teaching staff could attend BSC activities, arranged coverage by other staff for BSC participation, and aligned BSC activities with existing scheduled center closures.

"I stayed back and I helped cover. And then the other admin person, my other admin colleague was also here to support." – Director

"[Director] did a lot of explanations of even how we were going to facilitate what our goals were, what the plan was...what the expectations were and what it was looking like." – Teacher

"Having a champion in the classroom and or in the leadership - I think it seems like that it's infectious for the team. You know, people are, oh my gosh, we can do this. This is doable... having an advocate in leadership is important." – BSC Staff

Organizational culture of continuous learning. Another facilitator that individuals named was the extent to which centers already valued professional development as part of an overall culture of continuous improvement rather than an obligation to meet requirements. Both BSC staff and team members noted that when centers had a culture of continuous improvement, the BSC felt more like a natural extension of existing practice rather than an added burden. Participants also shared that individual intrinsic motivation and commitment to self-improvement also led to individuals’ sustained participation and contributed to an

overall culture of continued learning. Relatedly, analyses of T1 survey data indicated that BSC participants in centers that had robust participation reported significantly higher levels of positive self-efficacy and lower levels of negative self-efficacy prior to the start of the BSC, compared to BSC participants in centers that had less robust participation.

"I have a really invested team overall and I think what I've decided is that it's part of our culture. I think our admin team is the same way and because we treat [CQI] with integrity, this idea of being our own learning...it never stops. I think that trickles down [to teachers]." – Director

"The culture here and the quality care from the culture of continuous learning, they both meshed so well together because they're one in the same. CCL is basically assessing and learning, right? And pivoting and trying again. So you're basically doing quality care. It's not about compliance, it's about the quality." – Teacher

Peer accountability and collaborative team culture. BSC team members emphasized that support from colleagues played a significant role in sustaining participation throughout the BSC. Center staff reminded each other about upcoming activities through group text message chats and in-person check-ins, covered for each other in classrooms so that colleagues could step away to participate, and shared PDSA ideas and strategies informally in hallways and common spaces. Staff also shared that having regularly scheduled meetings helped create a sense of accountability and generated momentum. Centers with already-strong team relationships found that these peer dynamics came naturally and built on existing habits of collaboration, while for others, the BSC created new opportunities for collaboration and idea-sharing that staff found meaningful.

"And our [Director] is kind of the one that keeps it all together to remind us that we are doing this thing and... when things are due to make sure that we've been keeping up with it. 'Cause, you know, day by day, week by week, things change, but she's sort of there helping to push us up. To make sure that we are being held accountable for the changes that we want to make." – Teacher

"It's a very collaborative, collective experience just between the four of us, we all keep each other informed as to what is going on so that no one is ever behind, no one ever feels like just because they missed something they're not up to date with everything that's going on." – Center Support Staff

"We have an amazing team of teachers, co-teachers that support them to cover hours to attend the meetings, working longer days... We have a very professional and very motivated team and an invested team, and I think that has been the key from where I'm sitting to be able to do all the things that we're doing... that's been the biggest support and what has made it possible." – Administrator

BSC implementation facilitators

Unrestricted stipends. Center directors shared that the \$3,750 unrestricted stipend they received as part of the BSC implementation were an essential facilitator to their participation. Directors used the stipends to provide an extra incentive to participating staff, compensate parents on the BSC team for missing work to participate, purchase materials, and help offset costs related to travel for in-person learning sessions. Participants also described using stipends creatively to build morale and let staff know that their commitment was valued. For example, one director described purchasing T-shirts for all staff attending a pre-service training day for an additional SEL training they pursued.

"The other thing that really removes the barriers is the stipend... it's been nice to be able to give [our parent representative] a stipend because we know she's missing work to come to these things with us. So, with our restricted funds like we could not usually give [parent] a stipend for that. So, it's been really nice to recognize she's devoting her time." – Administrator

"The stipend that went along with this was absolutely critical because through our restricted funds, I never would have been able to give out stipends to families for participating...I used it to purchase things that like I could not purchase with our restricted funds. Like for example ...I bought a T-Shirt for everyone who joined [a pre-service day]. It built the enthusiasm, it built the momentum. We did some food things that like we wouldn't have been able to do." – Director

Flexible BSC design and delivery. BSC team members also appreciated that BSC staff demonstrated flexibility in responding to centers' real-world constraints. For example, BSC staff adjusted the location of an in-person learning session to reduce participants' travel time and pivoted another learning session to be virtual to allow more participants to attend. Participants also noted that the increased attempts to provide individual support to centers was helpful in facilitating participation. When centers experienced major leadership transitions or staffing shortages, BSC staff allowed centers to step back temporarily while remaining connected to communications and resources. BSC team members across roles noted that feeling heard and responded to by BSC staff increased their sense of investment in the work.

"I was a little concerned before the cohort started, in the locations for training. And I expressed that concern and it was changed before the first thing even to make it a central location for everyone" – Director

"I think moving that second session to Zoom made it easier because it would have been so hard for us to leave the building in case somebody needed us. So that was easier for us." – Director

Barriers to BSC participation

In focus groups and interviews, BSC participants—including BSC teams, staff and coaches—also identified several barriers that made it hard to participate in the BSC. These barriers operated at both the center level and the BSC implementation level. We describe these key barriers below.

Center-level barriers

Time constraints. BSC teams and staff shared that having the time to regularly attend BSC activities was a consistent barrier to participation. Participants faced time challenges because BSC activities conflicted with their child care center schedules and responsibilities. BSC staff made every effort to vary the times the BSC activities were offered to include as many individuals as possible, but finding times that worked for everyone was challenging. This was especially true for teachers, center support staff, and parents, because these individuals had daytime responsibilities that made participating in external activities a challenge.

"I wish there were more teachers that were able to participate at those times. And that's the other thing, you know, it's tough to participate during the day. You're right in the middle of your classroom time." – Teacher

"The [center directors] are more or less, you know joining and coming to that affinity group and so, it doesn't seem there's as much of an issue there as there is with the teachers. We have very low attendance rates for [teacher] affinity groups...kind of makes us wonder are they really bringing an all-team engagement and effort into their work or is it still very much top down." – BSC Staff

"The only barrier was just that it was during the workday. There were times that I could do it and there were times that I couldn't, but it would have been worse if it was after the work day. So it's not like that barrier could have been taken out. Life is just busy and so finding two hours in the middle of the workday to do this sometimes is hard." – Parent

Insufficient staffing. BSC participants shared that staffing shortages and staff transitions were another common challenge which made it difficult to participate in BSC activities. Without extra staff to provide coverage, participants were unable to leave the classroom to attend BSC meetings while maintaining required ratios. At times, BSC participants left their job at the center, leading to turnover within the BSC team.

"If teachers don't show up and we have no subs, no floaters, no coverage, I end up covering the room...I would miss a lot of the meetings because I was pulled in to be a teacher in the room and had absolutely nobody else to cover. And that's just the nature of the beast. I feel like where we work, that happens all the time." – Center Support Staff

"I think it was just a rough time because overall, early childhood is just struggling with staffing. So I think we tried when we could, but this is one of those things that if you missed a few things, you felt like you were catching up." – Teacher

Relatedly, survey data showed that centers with higher staff turnover rates^d at baseline (T1) had significantly lower participation scores. Participation in the BSC did not vary based on other baseline center-level factors measured at T1, including the number of hours of paid planning time allotted to teachers, how often staff used quality improvement strategies, how involved teaching staff were in center decision-making, or center size (see Appendix F for full quantitative results).

Organizational capacity. Organizational capacity was another major barrier to BSC participation, particularly when there was instability in center leadership or a lack of investment from administrators. Centers with constrained organizational capacity due to changes in ownership, administrative transitions, or high rates of turnover struggled to participate consistently in the BSC. When leadership was preoccupied with internal disruptions, the BSC often became a lower priority, and that shift in focus was noticeable to staff. Similarly, when center administrators were uninvolved or indifferent to the BSC, center staff were less motivated to stay engaged and found it harder to maintain enthusiasm for the work.

"Some of the people left and some people weren't as in it. They were doing it, but they weren't really into it. You could tell that they just weren't into it as much as I was... I would just hope that if I do it again, I'd have better support around me." - Teacher

"There was a pretty big leadership vacuum...and there wasn't a ton of support. And so I just think they didn't have the structures in place to be ready or the capacity to like just really, really take it on in the way that they were being asked to... there was appetite but not capacity or infrastructure in their program to really build it into their practice." - Parent

Analyses of baseline (T1) survey data also pointed to an association between organizational factors and participation in the BSC. BSC team members in centers that had robust participation reported higher levels of center commitment and a stronger SEL culture at baseline (T1), compared to BSC team members in centers that had less robust participation (see Appendix F for full quantitative results).

Implementation-level barriers

Mismatched expectations and unclear goals. BSC team members and staff shared that in many cases, participants did not fully understand what they were committing to when they joined the BSC. The disconnect between expectations and reality and the uncertainty about whether they were on the right track interfered with participants' momentum and reduced engagement. For example, many BSC team members expected coaches and BSC staff to provide more concrete strategies for supporting social and emotional learning and were surprised that they were expected to generate their own ideas for improvement, albeit within the focus areas of the Change Framework. Further, many BSC team members did not understand that they would be expected to collect and submit data monthly. After the first learning session, several left believing that data collection would only happen once. Several individuals also shared that they were surprised that they would be expected to meet monthly with their center team, all the other BSC teams, and affinity groups.

"We thought that we were going to be presented with more ideas given to us by the BSC of here are some things that you can try. It was nice to be able to talk with your peers, but I think we were expecting it to be more you lead the way and teach us what to do and then we'll come back and tell you what we've learned. I think that might have been why some people kind of felt unsupported." - Teacher

"We got there and they were just like constantly talking about data, everything. And we're like, ok, what about the social emotional part? And like, they never gave us an answer." - Teacher

Several individuals suggested that the disconnect stemmed in part from the fact that it was center directors who made the decision to participate, and directors did not always understand or accurately communicate the goals of the BSC to the rest of the participating center staff.

^d Center turnover was defined as the number of staff who left their positions and had to be replaced in the six months prior to the baseline survey divided by the total number of positions if the center was fully staffed. When multiple administrators completed the survey for a single center, their responses were averaged.

“The way it was presented from my director was that it was going to be more of a training like style, so it just threw me off that I suddenly have to do all this and do this on my own.” – Teacher

“I think the program leadership were the ones that received the information about the BSC, made a determination that they wanted to participate and applied. And it's likely that parents and the teachers didn't learn about it until after...I definitely got the sense when I talked with them when we had our little breakout sessions that...they just felt like there was a lot of information that they needed to take on in order to get up to speed and understand what their role was going to be.” – BSC Staff

Participants also expressed confusion about overall goals and process. Especially during the focus groups conducted in the middle of the BSC process, BSC team members were sometimes unsure what they were supposed to be working on between learning sessions, and many struggled to see how the data they were collecting would eventually come together into a coherent picture.

“I'm still anxious to see how this is going to connect in the end like we've gathered all this data, we continue to gather data and what's the end goal? ... What is the purpose of this? Like, where is this going?” – Administrator

They're giving us these great visions, this great information, but it's like, are we reforming the goal? Are we adding another goal to move on with this in mind, how are we branching it together? Is that coming later? I mean, it could just be me. –Center Support Staff

For some, the uncertainty persisted throughout the BSC. At the end of the BSC, one teacher said: “Sometimes I would be thinking like what's our purpose? I think it's also because it was so long and in between things that you would start to forget. ...as we continued, I felt less like I knew what we were doing or if I was on the right track.” However, for others, the purpose became clear and the progress was satisfying: “At first I was just like, oh, like I didn't understand it and I didn't get it. And I was just like, OK. What's the purpose of this? But definitely after this last session they gave us the report of it, the data, and as soon as I saw it, I was like I knew what happened specifically at that moment...we had already started addressing the situation with him, after seeing the data.”

Lack of participation from other teams. BSC participants also shared that the inconsistent participation from other BSC teams reduced their overall enthusiasm and de-incentivized them from attending BSC activities. As previously discussed, time barriers made consistent participation difficult. We heard that, especially for teacher and parent affinity calls, sometimes only participants from one or two centers would be able to attend regularly. Participants shared that when there were not many teams on the calls or when individuals in other centers stayed off camera or did not speak and share ideas, they did not feel like they were able to benefit from the collaborative nature of the BSC and that this made them less likely to show up to or engage in other calls.

“I think that was a struggle because it was just so inconsistent because everyone's schedules, and to try to get all these people on at the same time. Like I know our poor teachers were frustrated because they were like the only teachers that ever were on [the] call.” – Director

“As it went on, because you'd have the affinity calls and the all-team calls, it seemed to be the same schools and the same people vocalizing the same thing...it basically became the same people having the same conversation, which was nice and we were building each other up and getting ideas from each other, but it just felt like if there was more participation from various people, I think it would have been more helpful, but it kind of felt a little redundant after a while.” – Teacher

Technology. The technology platforms used for the BSC also posed a barrier to participation. Participants were asked to use a Microsoft SharePoint site to upload monthly metrics and forms documenting the PDSAs they were trying. The platform also offered an online discussion board for participants to communicate between BSC activities. However, many participants experienced technical difficulties accessing the site, which required them to create a Microsoft account and use two-factor authentication. To accommodate this, BSC staff accepted submissions via email and did not require use of the platform for communication. As a result, use of the platform remained low, and several participants noted that the inability to view other teams' submissions limited their engagement.

"I couldn't get into [SharePoint site]. So I felt like I was missing a lot because I couldn't get it on there. And we did have it loaded on a computer for weeks and months, but it was somebody's office computer and you know, can't be in there while they're in there. But I think that was the most frustrating part." – Teacher

RQ2. Does participation in the BSC activate key mechanisms of change and are any improvements sustained six months after the conclusion of the BSC?

Key Takeaways:

- Continuous quality improvement practices within centers significantly increased from baseline to post-BSC, and these gains were sustained six months later
 - Centers with more robust BSC participation showed even greater increases in quality improvement practices over time
- In focus groups and interviews, participants described the BSC as building stronger communication and collaboration, both within their centers and across BSC teams
- Although survey reports of overall data use did not significantly increase across all participants, administrators showed significantly greater increases in data use compared to teachers and other staff
 - Participants across roles described meaningful shifts toward becoming more comfortable using data to guide decision-making and having a more inquiry-based mindset

According to the CCL Theory of Change (Appendix B), the BSC is expected to activate a set of mechanisms— intra-organizational learning (i.e., CQI practices within the center), use of data, inter-organizational learning (i.e., learning from what other centers do), and psychological safety—that then lead to short- and longer-term changes in other attitudes, beliefs, and practices. We present evaluation data for each of these mechanisms below. Using survey data from BSC team members, we examined changes in hypothesized mechanisms from baseline (T1) to post-BSC (T3) and from baseline to follow-up (T4). We also examined the extent to which activation of mechanisms differed by centers' BSC participation, individual-level characteristics (i.e., role and years of experience in the early childhood field), or other center-level factors (e.g., paid planning time, center size, turnover). Among these potential moderators, we found that centers' BSC participation and an individual's role within the ECE center were statistically and meaningfully associated with several indicators of mechanisms of change. Although some additional moderating factors were statistically related to mechanisms, the pattern of findings was not consistent and difficult to interpret. We therefore report on significant moderation findings related to individuals' years of experience and other center-level factors in Appendix G. See Appendix F for the full results of all the models tested.

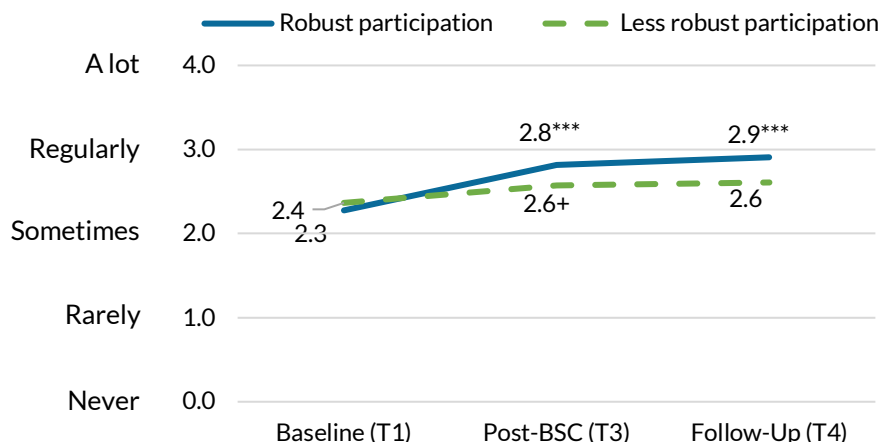
Continuous quality improvement practices within centers

CQI practices within centers (e.g., used tools to identify areas for improvement; designed a change or strategy to try out) significantly increased from baseline (T1) to post-BSC (T3) among BSC team members in centers with robust BSC participation, and this significant increase was sustained through follow-up (T4). These increases were moderate in magnitude (see Appendix F, Table F2). BSC team members in centers with less robust BSC participation showed a smaller, marginal increase in CQI practices from baseline to post-BSC, but this increase was no longer marginally significant ($p = .11$) at follow-up (Figure 5).^e To better understand these changes, we also examined changes in the individual items that made up the CQI practices

^e This moderation was significant ($p < .05$) in models treating participation as a continuous variable; it was marginal ($p < .10$) in models using the categorical variable (i.e., robust vs. less robust participation) at T3 and significant at T4.

scale. The items that showed the largest increases were using PDSA cycles and using the Model for Improvement. Other items, such as soliciting ideas and feedback from other staff and identifying an area for improvement, were rated higher at baseline than the other items and changed less over time.

Figure 5. Changes in CQI practices among BSC center staff in centers with robust and less robust participation ($n = 88$ BSC center staff)

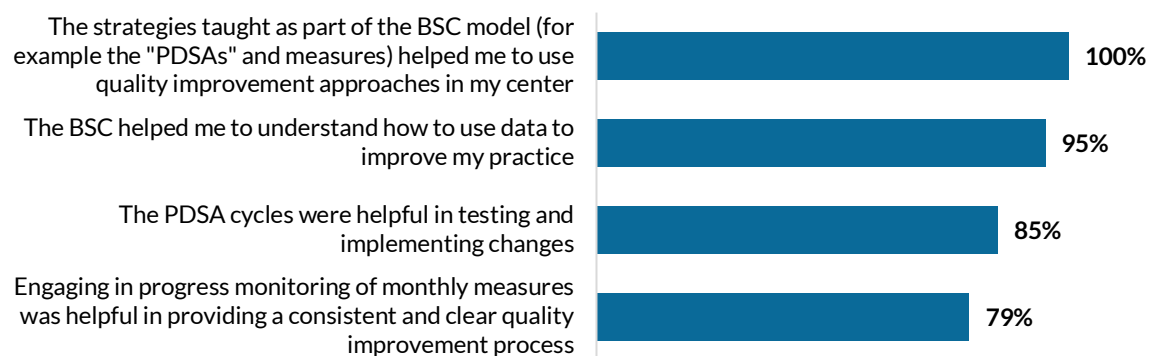


Source: T1, T3, and T4 Center Staff Survey

Note: + $p < .10$, *** $p < .001$ change from T1. Centers were categorized as having robust or less robust participation in the BSC based on a) attendance at the orientation and learning sessions, all-team calls, and affinity group calls; b) submission of monthly metrics; and c) number and areas of focus of PDSA cycles that were initiated (see more details under RQ1 above).

In addition to the Center Staff Survey administered at T1, T3, and T4, 40 BSC team members completed an overall BSC feedback form at the end of the last BSC learning session. Consistent with findings above showing an increase in CQI practices over time, respondents to the feedback form reported that the BSC helped them engage in quality improvement at their center (see Figure 6). All respondents reported that the strategies taught as part of the BSC were helpful in implementing quality improvement strategies at their center, and nearly all reported that the BSC helped them understand how to use data to improve their practice.

Figure 6. Percent of respondents who agreed or strongly agreed that the BSC helped them engage in quality improvement ($n = 40$ BSC team members)



Source: Overall BSC feedback form (April 2025)

Qualitative data from focus groups and interviews further emphasized this change in quality improvement practices over time. BSC team members described shifts toward a more reflective, inquiry-based mindset focused on making small, iterative changes. This shift also increased confidence among teachers to share ideas and test new strategies, as reported by directors. Similarly, teachers expressed greater self-awareness and purposeful decision-making after participating in the BSC.

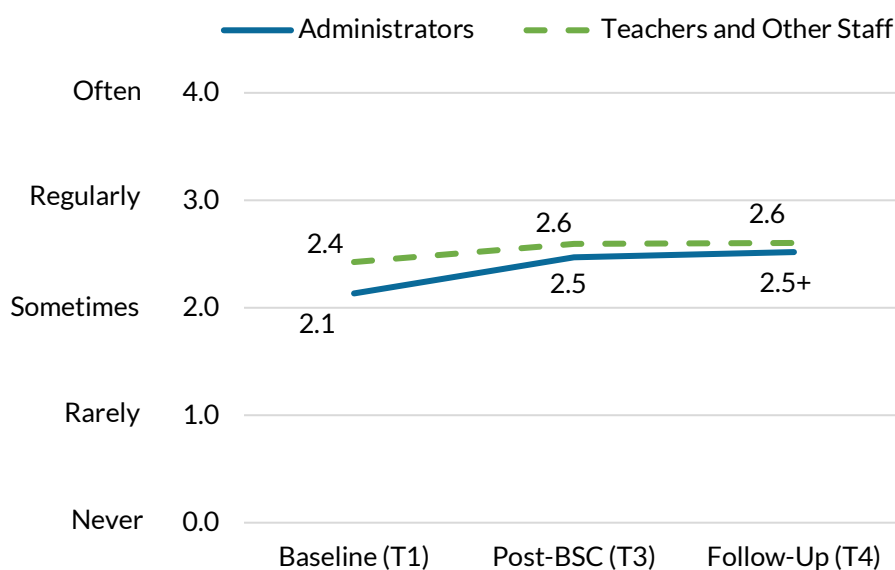
“They were being more creative and problem-solving on their own. They were really honing in [sic] on what does this child really need to be successful?” – Director

“I learned to take baby steps, and I think really not just keep changing but work with the staff to figure out why something isn’t working.” – Teacher

Data use

There was a small, marginally significant increase in BSC center staff’s self-reported data use over time from baseline to post-BSC and baseline to follow-up (see Appendix F, Table F2). Although changes over time did not significantly vary by role, increases appeared to be driven largely by administrators; there was a marginally significant increase among administrators but no significant changes among teachers and other staff (see Figure 7). There were no differences in data use over time based on level of participation or other individual or center-level characteristics.

Figure 7. Changes in data use reported by BSC center staff role (n = 88 BSC center staff)



Source: T1, T3, and T4 Center Staff Survey

Note: + $p < .10$ change from T1.

In addition to the survey data, which showed a marginal increase in data use among administrators, themes from focus groups and interviews also highlighted improved tracking and use of data as an area of growth among BSC participants. Many participants noted that although they were familiar with using data from informal classroom observations, systematically tracking and using data to guide decision making was often new to them. This shift supported more focused, solution-oriented discussions around key areas, such as two-way communication and classroom management. Teachers also found that tracking data increased their awareness of patterns they hadn’t previously noticed and strengthened their ability to test out different strategies. Coaches also observed that engagement with the CQI process helped to demystify data for participants, making it feel accessible and practical rather than technical or burdensome.

"The data component in general for all of us, I think [it] was really important that we kind of hold ourselves up to that. Like how are we collecting the data? What are we collecting that's concrete information for us to be able to make the best decision, right? So as we went through our meetings or when we would come together and talk about our PDSA, it was important to kind of be like ... 'What's your data going to look like? How are you going to collect that?' So just taking what we were being taught and kind of continuing that throughout our own conversations, I think was important." - Director

"So the two things that we did were the two-way communication and being able to track like how that communication is going with parents specifically, how that connection is going, and then the classroom management piece, like the behavior, social emotional piece, which are things that are just constant. They come up all the time and it's a wonderful thing to shine a light on it and be able to have some solution-based conversations about them." - Director

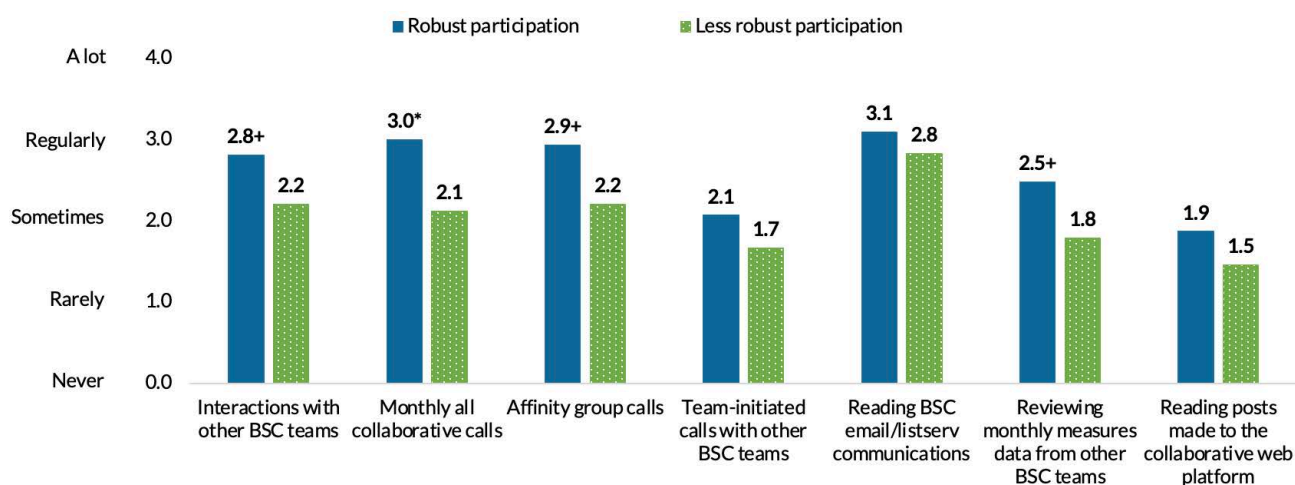
"I really did like coming up with ideas of things that we needed to work on, putting our practices in place and then re-evaluating. The re-evaluation was obviously like the most important piece of all that because we were able to pivot and move and try and like experiment with things. And if it wasn't working, we were able to go forward and try [something] a little bit differently." -Teacher



Learning across centers

Inter-organizational learning, collaborating with and learning from other centers, is another mechanism through which the BSC leads to outcomes. BSC team members shared that learning from other centers was one of the most valuable aspects of the BSC. Figure 8 shows how regularly BSC team members reported engaging in various BSC activities with other centers, based on self-report post-BSC (T3).^f For most BSC activities, participants reported engaging between “sometimes” and “regularly.” As expected, BSC team members in centers with robust participation reported significantly greater frequency of attending monthly all-team calls and affinity group calls and marginally greater frequency of having interactions with other BSC teams and reviewing monthly metrics data from other BSC teams, compared to participants in centers with less robust participation (see Figure 8). Ratings did not significantly differ by role (administrator vs. teacher, staff, or parent).

Figure 8. Inter-organizational learning interactions as reported by BSC team members in centers with robust and less robust participation (*n* = 55 BSC team members)



Source: T3 Center Staff Survey ; T3 Parent Survey (BSC parents only)

Note: + $p < .10$, * $p < .05$ difference between groups. Inter-organizational learning practices were only reported at T3, so we did not examine change over time, nor did we impute missing data. This figure represents data from BSC team members who completed this measure at T3.

Qualitative data reinforced the value participants placed on communication and collaboration. Being among peers with shared experiences and similar challenges created a sense of community and helped participants feel validated. In addition, participants noted BSC activities like affinity groups and in-person learning sessions allowed for networking opportunities and reinforced their sense of professionalism. In-person learning sessions were particularly valued for the depth of connection they enabled.

“The BSC has cultivated a space where we are with people who understand what we do day in and day out, and there is a sense of respect and solidarity when you feel seen within that.” – Director

“It really feels like the team or senior leaders have become a network of support for each other ... there's more like cross team sharing. And like one [center] was like, “Oh, you need books for your program? I'll drive over and drop some off.” – BSC Coach

^f While some inter-organizational learning items are similar to information included in the participation composite described above (e.g., monthly all-team calls, affinity group calls), these are separate measures from two different data sources: the participation composite used data from attendance logs (which were more complete and more objective); the intra-organizational learning items presented in Figure 8 were self-reported from the post-BSC (T3) survey. Furthermore, the inter-organizational learning items in the T3 survey contain additional information about learning from other teams (e.g., team-initiated calls with other BSC teams) compared to the participation composite.

"[The learning sessions provided] more opportunities to just have side conversations with different people in the BSC and actually have face to face connections. I think it was more engaging versus watching it virtually but also, the community aspect seemed much stronger through being in-person." – BSC Staff

Participants valued opportunities for shared learning across BSC teams, highlighting how others' experiences provided practical ideas and new perspectives for addressing challenges. Participants also described the value of bouncing ideas back-and-forth during meetings and hearing about PDSAs in which other teams were engaged. Many participants implemented similar strategies for their own PDSAs around family engagement (e.g., using WhatsApp to facilitate daily communication between center staff and parents), workforce wellbeing (e.g., implementing a wellness committee, staff connection activities), and classroom management (e.g., incorporating mindfulness activities to help children relax their mind and body before transitioning to a new activity).

"It offered a lot of support and great information and ideas to bring back to our centers, real things that we could implement and put into practice in the schools." – Director

"It was nice to bounce ideas back and forth and hear what other people were doing to kind of give us some ideas, more than just talking amongst ourselves, actually seeing some of the example PDSAs being put up so we can see how it's being done." – Center Support Staff

Psychological safety

Psychological safety was the final mechanism of change we examined. We found that psychological safety did not significantly change over time among BSC center staff. Among the potential moderators we examined, years of experience and hours of paid planning time were statistically associated with changes in psychological safety over time, but the findings did not contribute to a coherent pattern (see Appendix G). There were no differences in psychological safety over time based on BSC participation or other individual or center-level characteristics.

In focus groups and interviews, however, participants described an increase in trust and vulnerability as a result of participating in the BSC. Within teams, participation in BSC activities and center staff meetings provided set-aside time for staff to discuss shared goals, which fostered more open communication between staff and boosted morale. Parent participants also appreciated the opportunity to deepen connections with center staff.

"I think it's allowed us to kind of like lean on each other a little bit more. I know for me, I've been more open, more honest about just anything because I know that like, that's the foundation of it. I know one of the things that I've been like taking away is trust. You need to trust your co-teacher. You need to trust your director. So I think that that has allowed me to like open up and I think it's even made us more open to receiving that feedback or whatever it might be." – Administrator

"It's not ingrained into the relationship of a parent in a preschool to sort of see the teachers as full people beyond teachers ... I think it did really help me feel more connected to them and more able to think about how I supported the school and the staff at the school in meaningful ways than I had previously." – Parent

"Some of the games that we've done in the learning sessions seem like they're building connections. You know, every center is coming in a different place around team cohesion, [and] games might not be teaching content, but I do feel it benefits both the teams individually and the group overall. Kind of like just building more rapport and building relationships." – BSC Staff

BSC activities also allowed participants across BSC teams to build new relationships. The relationships built during the BSC extended beyond the project. Some BSC team members maintained ongoing connections, relying on peers for advice and support.

“Having an outside opinion like being able to call somebody else and talk with them ... helps you process it more freely with no judgement.” - Administrator

RQ3. Does participation in the BSC improve short-term organizational and individual outcomes, and are any improvements sustained six months after the conclusion of the BSC?

Key Takeaways:

- One survey measure of organizational climate (teacher-teacher trust) decreased from baseline (T1) to post-BSC (T3), but returned to baseline levels by follow-up (T4)
- The survey measure of shared leadership significantly decreased from baseline (T1) to post-BSC (T3), and the decrease persisted through follow-up (T4)
- There were no other significant changes in survey measures of organizational climate, self-efficacy, or attitudes and beliefs toward SEL and CQI over time
- In contrast to the survey findings, qualitative data described:
 - Improved workplace relationships and organizational climate
 - Increased distributed leadership across staff and parent roles
 - Increased confidence and intentionality in approaching both SEL and CQI

The CCL Theory of Change (Appendix B) suggests that the BSC achieves its intended short- and longer-term outcomes through the activation of mechanisms of change. In the previous section, we found that CQI practices within centers increased over time, and so did the use of data among center directors (albeit marginally so), but there were mixed findings across quantitative and qualitative data regarding increases in psychological safety over time. These findings leave open the question of whether we would observe changes in short- and longer-term outcomes based on BSC participation. To understand whether short-term outcomes improved among BSC team members, we examined changes from baseline (T1) to post-BSC (T3) and follow-up (T4) in perceptions of organizational climate, distributed leadership, self-efficacy, and attitudes and beliefs around social and emotional learning and CQI.

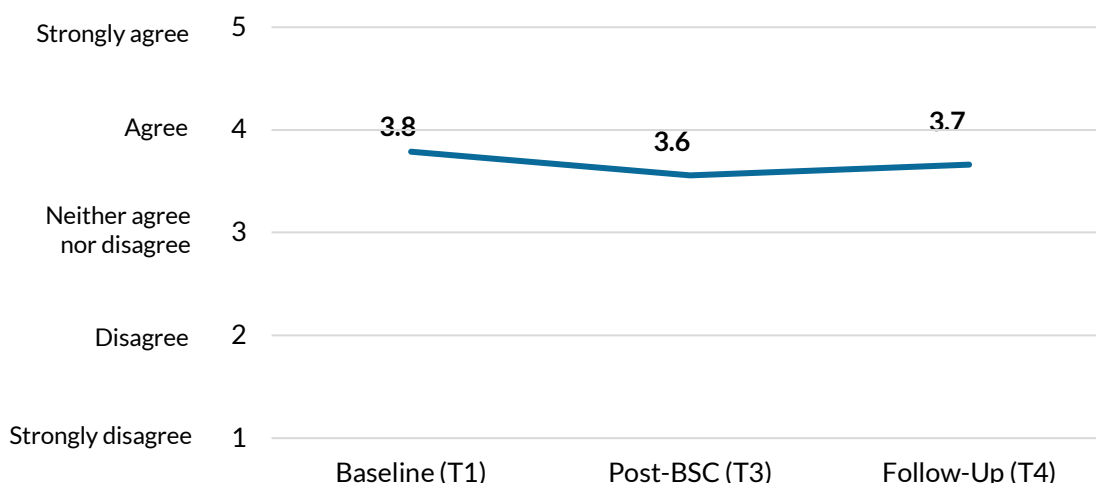
Organizational climate

We measured organizational climate using five subscales: socialization of new teachers (e.g., a conscious effort is made by all to make new teachers and staff feel welcome here), teacher collaboration (e.g., how often you have the opportunity to work with other staff to plan your practice or classroom instruction), collective responsibility (e.g., how many teachers/staff at this center take responsibility for improving this center), center commitment⁸ (e.g., feeling loyal to this center), and teacher-teacher trust (e.g., it's OK in this center to discuss feelings, worries, and frustrations with other teachers and staff). One subscale measuring organizational climate (teacher-teacher trust) showed a small but statistically significant decrease from baseline (T1) to post-BSC (T3), but returned to baseline levels by follow-up (T4) (see Figure 9). Certain center-level characteristics, specifically center size and hours of paid planning time, were associated with changes in organizational climate over time, but the pattern of findings was not clearly interpretable (see

⁸ In the original Essentials measure, this subscale is called “school commitment.” For the purposes of this report, we refer to this scale as “center commitment” since the sample is drawn from centers, not schools.

Appendix G). Although the decrease in teacher-teacher trust at T3 seems counterintuitive, when we shared the findings in data walks,^h BSC team members offered several possible explanations. First, they shared that the time of year during which the data were collected (May) is a challenging time for many centers with a lot of competing stressors, which could have contributed to overall decreased morale. Second, several centers experienced notable structural transitions during that time, including changes in ownership and senior leadership. This organizational instability may have contributed to a temporary disruption in organizational climate. Finally, others suggested that, as BSC team members started working more closely with one another and collecting data about staff well-being in their centers, they may have developed a more accurate understanding of dynamics between teachers than they had at T1.

Figure 9. Changes in teacher-teacher trust among BSC teachers and other staff over time ($n = 58$ BSC teachers and other staff)



Source: T1, T3, and T4 Center Staff Survey

Note: * $p < .05$ change from T1. Only teachers and other staff (not administrators or parents) reported on teacher-teacher trust.

In contrast to the survey findings, in focus groups and interviews, BSC team members shared that the BSC strengthened organizational capacity in their centers by building structures that supported staff learning and by improving workplace climate. For example, PDSA cycles created new structures for cross-classroom collaboration and shared problem-solving. BSC team members also emphasized improvements in workplace climate. Those in leadership positions described stronger appreciation among staff, fewer interpersonal tensions, and more intentional efforts to build cohesive teams through regular check-ins and conversations with supervisors.

"We took one teacher from every classroom and so that encouraged cross communication across classrooms. It helped teachers that don't typically work together, you know, engage in a common [goal] which was really nice."
– Director

"It's improved [the] social emotional atmosphere for our teachers and staff. That just makes a more pleasant environment for families and students because they're able to really bring problems forward without being chastised or it negatively affecting anybody." – Director

Distributed leadership

One survey measure of distributed leadership (e.g., "I see myself as a leader in my center," and "including teaching staff in the center's decision-making creates tension among teaching staff" [reversed]) showed a

^h Data walks were virtual meetings with BSC team members that occurred during our data analysis and reporting phase of this project. At the data walks, we shared findings from the study and solicited the BSC team members' thoughts on whether the patterns made sense to them and whether they had additional thoughts on the interpretation of findings. A total of four data walks were convened in May 2026, and 13 BSC team members participated across all three states.

small significant decrease from baseline (T1) to post-BSC (T3), and the decrease persisted through follow-up (T4). However, another measure of teacher influence (e.g., how much do teaching staff influence developing plans for involving families in center activities, developing solutions to problems the center faces) showed no significant change over time. That said, the measure that showed a small but statistically significant decrease had a poor alpha, so this finding should be interpreted with caution. However, qualitative data told a different story about how leadership evolved within centers. Directors described stepping back to allow teachers to lead staff meetings and take ownership in areas where they held the deepest expertise (e.g., tracking and interpreting classroom behavioral data). Center staff took on more ownership in setting goals and problem-solving in their classroom to address children's social and emotional needs. Parents, too, emerged as leaders in new ways, initiating family community groups and creating communication channels between families and center leadership that had not previously existed. Parent participants viewed themselves as leaders within the center community and noted they were seen by other parents and center staff in this new role as well.

"In every BSC, we're starting to see relationships within program teams evolving and in some they're already demonstrating distributed leadership." – BSC Staff

"When it came to the classroom and specifically with the children to try to see what social emotional supports the children needed, I let them lead that because they're the experts in their classroom. I could provide support if they needed it, but I really let them lead that charge." – Director

"I've seen so much growth in [support staff] in the last year, especially when it comes to supporting teachers and like figuring out how to support them. I think she definitely got a lot out of this." – Director

"It just gave me a different perspective on them that I really appreciated. In some ways it motivated me to think differently as a parent leader in the community." – Parent

Attitudes and beliefs toward SEL and CQI

There was a small, marginally significant increase in comfort with BSC center staff's social and emotional learning (SEL) from baseline (T1) to follow-up (T4; see Appendix F, Table F2). Changes in comfort with social and emotional learning varied significantly over time based on the extent of collaborative planning time (see Appendix G). Once again, qualitative data provided more context regarding changes in attitudes and beliefs toward SEL. BSC team members described a newfound attentiveness to children's individual needs—moving from general awareness of classroom challenges toward more deliberate, observation-based identification of what specific children needed in specific moments. Participants also shared that the tools provided in the BSC, such as the behavior tracking chart (i.e., monthly metrics tracking behaviors), made them feel more empowered in testing out strategies. One center attributed their participation in CCL to their expanded focus on SEL as a main priority for professional development, leading them to make a subsequent investment in Conscious Discipline training for all staff.

"I feel like they're just maybe more aware now. So it's kind of brainstorming, not in that moment, but with your teams. How can we change this? How can we make this better? [...] And I feel like recognizing the individual child more ... just kind of noticing their individual needs more too." – Director

"A lot of our PDSAs were really focusing on our staff attitudes and our staff skills. We decided that we really needed something more ongoing [...] I could really do this with the policy council, our governing board, because we had been sharing successes, because we had been talking about it every month, and because we just had that further data and to realize we needed to do something different." – Administrator

RQ4. Does participation in the BSC improve longer-term organizational, classroom, and family outcomes and are any improvements sustained six months after the conclusion of the BSC?

Key Takeaways:

- Survey findings did not generally show longer-term outcomes:
 - One survey measure of staff-reported family engagement decreased from baseline (T1) to post-BSC (T3) but returned to baseline levels by follow-up (T4)
 - One parent-reported measure of parent partnership also decreased from baseline (T1) to post-BSC (T3)
 - There were no other significant changes in survey measures of SEL-promoting classroom practices, perceptions of children’s challenging behaviors, family engagement, and employee retention
- In contrast to the survey findings, qualitative data described:
 - Improved family engagement strategies
 - Improved SEL classroom practices and environments

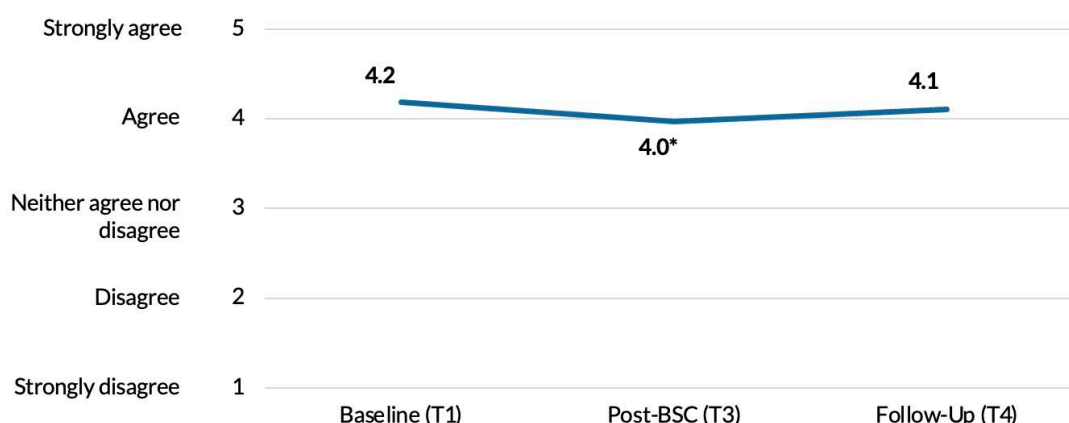
We also examined whether longer-term outcomes, as identified in the CCL Theory of Change (Appendix B), changed over time among BSC team members on measures of SEL-promoting classroom practices, perceptions of children’s challenging behaviors, family engagement, and employee retention. Qualitative data described concrete improvements in classroom practice and family partnerships, whereas survey findings showed that no longer-term outcomes significantly improved from baseline (T1) to post-BSC (T3) or follow-up (T4).

Family engagement

Family engagement as indicated by three items reported by teachers, administrators, and other staff showed a small significant decrease from baseline (T1) to post-BSC (T3), though it returned to baseline levels by follow-up (T4; see Figure 10). Notably, mean levels of family engagement at all three timepoints were relatively high, indicating that, overall, BSC participants were using high levels of evidence-based family engagement practices. In general, indicators of family engagement as reported by parents (both BSC and non-BSC participants) did not significantly change from baseline (T1) to post-BSC (T3)ⁱ (see Appendix F). Although changes in family engagement as reported by staff were associated with individuals’ years of experience and center turnover (see Appendix G), changes in family engagement over time did not significantly vary by BSC participation or other center or individual factors. When we shared these findings in data walks, BSC team members shared that the dip in family engagement at T3 could have occurred, in part, due to an awareness effect in which, through BSC participation, individuals learned about more evidence-based family engagement practices and realized there is more room for them to grow. Data walk participants also noted that ratings of family engagement on the survey measure were generally high across all time points, with the average hovering around “agree” at T1, T3, and T4 (see Figure 10).

ⁱ Non-BSC parents did not complete surveys at follow-up (T4), and the sample of BSC parents was too small to examine separately, so change was examined from baseline (T1) to post-BSC (T3) only. In addition, data from non-BSC parents could not be linked across time, so responses were averaged at the center-level and analyses tested change at the center-level.

Figure 10. Changes in family engagement as reported by BSC center staff over time ($n = 88$ BSC center staff)



Source: T1, T3, and T4 Center Staff Survey

Note: * $p < .05$ change from T1.

In contrast to the survey findings, qualitative data described meaningful and concrete improvements in how centers connected with families. BSC team members described strong family partnerships driven by more consistent, two-way communication and increased opportunities for engagement. For example, centers introduced new strategies, including quarterly meet-ups with families and center staff, use of a classroom-based messaging app (i.e., WhatsApp), and parent-led community groups, which created more regular and meaningful interactions between families and staff. These efforts led to greater family involvement in center activities, including parent-organized events (e.g., “after hours” playdates at a center), and in center initiatives such as a lending library. Centers also embedded welcoming practices at their center, such as greeting families during drop-off, and inviting parents to post messages and pictures on center welcome boards. Participants noted these strategies helped to strengthen their early learning community as a whole.

“I like to be able to give feedback and have that connection with my child's teacher, and to just know and be comfortable enough to be able to voice any concerns that I have about anything that has to do with my child.”

– **Parent**

“I just wanted families to get in and be able to like see what the kids are exploring, what they're doing when they're outside in the outdoor classroom. So that was my motivation behind it... it was an easy common ground, parents were there picking up their kids, then they got to stick around and linger and meet other people.”

– **Parent**

“Parent participation has gone up because we really tried to have them be part of making decisions and be a part of teams and be a part of listening to what people are asking for.”

– **Teacher**

“Every teacher posted outside the classroom and sent home on our apps a ‘handle with care’ card with the instructions that if something's going on..., that could affect your child's day, or yours, and you know, you just need us to have a little more TLC [tender loving care] with your kiddo, you can simply send us a message ‘handle with care.’”

– **Center Support Staff**

“Families could share some of their experiences with the book if it resonated. [...] Students get selected to share what book they took home and if there was anything special that they wanted to share about the book.”

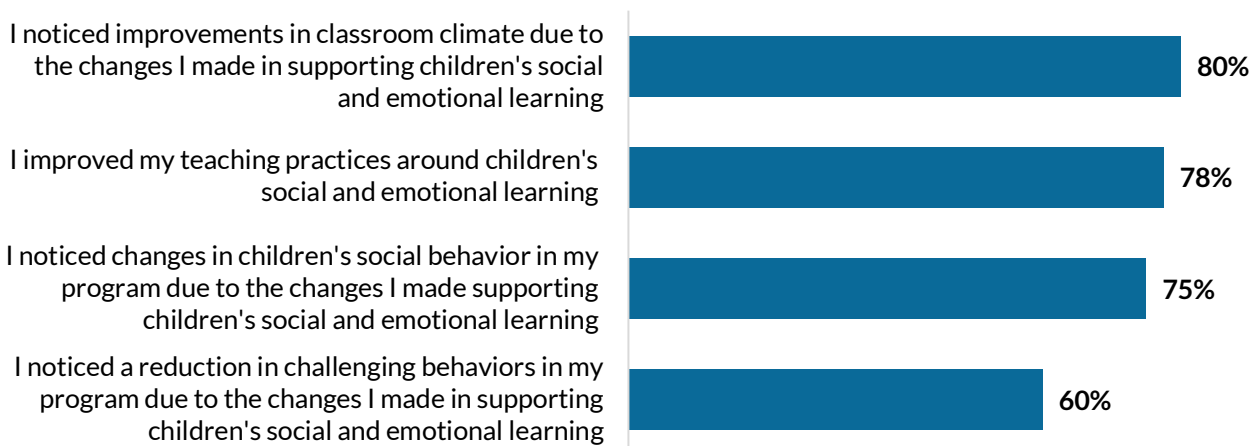
– **Director**

SEL classroom practices and environments

There were no significant changes over time in survey measures of SEL-promoting classroom practices or perceptions of children's challenging behaviors overall. Although significant interactions emerged for center size, the interactions are difficult to interpret (see Appendix G). Changes over time did not significantly vary by BSC participation or other center or individual factors.

In contrast to these findings from the Center Staff Survey administered at T1, T3, and T4, responses on the overall BSC feedback form completed after the final learning session highlighted several ways the BSC supported participants. Among the 40 BSC team members who completed this overall BSC feedback form, respondents agreed that the BSC had a positive effect in their classrooms and on the children they served (see Figure 11). About 80 percent reported that they had improved their teaching practices around children's social and emotional learning and that they had noticed improvements in their classroom climate as a result of these changes.

Figure 11. Percent of respondents who agreed or strongly agreed that the BSC helped them improve teaching practices and children's learning ($n = 40$ BSC team members who completed the overall BSC feedback form)



Source: Overall BSC feedback form (April 2025)

Note: Overall BSC feedback forms were completed anonymously, and we therefore could not use multiple imputation to handle missingness.

In interviews and focus groups, participants described concrete improvements they made in classroom environments, routines, and SEL practices. Teachers implemented calming corners, visual supports to promote children's regulation during transitions, and small groups, and aligned activities to match children's energy levels. Teachers also described testing out various strategies to better engage children and decrease challenging behavior, such as allowing children to move around during morning meeting, decreasing the length of circle time, and assigning children roles in the classroom. Participants also described replacing punitive language (e.g. "time out") with "take a break," and providing alternate play options to set expectations and help children better regulate their feelings. Teachers also incorporated emotion check-ins and visual tools such as feelings charts with emojis to give children concrete ways to identify and express their emotional states throughout the day. These practices gave children space to express themselves and build emotional awareness.

"In speaking with teachers, they were able to utilize the strategies in the classroom by collecting the data; they saw that there were changes, that there were improvements. So, I think that was very important that the data did show [we were] able to better help support the children in the classroom." – Director

"We put pictures up on the wall of the children [with] little cutout bodies. [...] some of our kids that had issues transitioning, it was an easy distraction for them like 'Say goodbye to mom, let's go find your picture.'" – Teacher

"We divide the class into four small learning groups. Each teacher cares for one small group and teaches skills and has more one-on-one conversations with kids. Then they move onto another group until they pass the same skills and conversations to all groups." – Director

"I started doing like an emotional check in and if the kids were coming in sad, you know, it opened up room for conversation to talk to them and just change how their morning goes." – Teacher

"We have a lot more developmentally appropriate tools in our classrooms that are part of the specific developmental milestones, whatever that age looks like, just being brought more to the forefront with the activities that are going on in the classroom. So we can be doing a unit, but now social emotional activities are built into that, whereas previously they weren't." – Director

RQ5. Do improvements in SEL and quality improvement practices spread beyond staff who directly participated in the BSC?

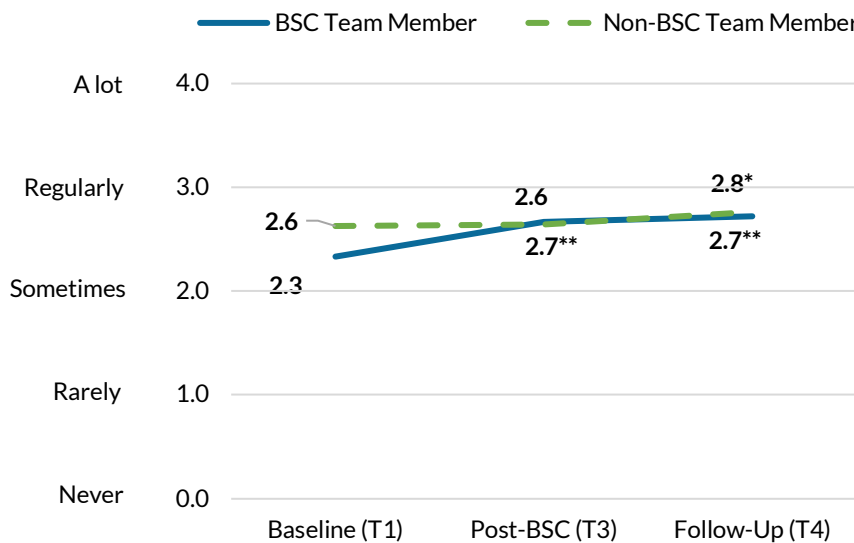
Key Takeaways:

- CQI practices appeared to spread beyond BSC participants: although only BSC participants showed significant increases in intra-organizational learning at post-BSC (T3), both BSC and non-BSC participants showed increases by follow-up (T4)
- Some measures of organizational climate, SEL culture, and family engagement decreased from baseline to post-BSC in the full sample. These decreases did not vary by BSC participation
- Qualitative data identified two areas where practices spread: family engagement strategies that extended from centers to families at home, and SEL strategies such as feelings charts and emotion check-ins that spread across classrooms and in some cases to staff interactions
- BSC participating individuals who acted as champions within centers by sharing BSC strategies with others were the primary driver of spread
- Key barriers to spread included siloing between classrooms and centers and non-participating staff not seeing themselves as part of the process

One focus of the evaluation of the BSC is whether use of quality improvement practices and strategies related to SEL spread beyond BSC team members who directly participated in the BSC. The spread of strategies beyond the BSC team to others in the center helps capture how quality improvement practices can contribute to a culture of quality improvement within a center and demonstrates in-depth engagement in the BSC.

Among BSC team members, survey findings indicated that CQI practices significantly increased from T1 to T3, whereas there was no significant change from T1 and T3 in CQI practices among survey respondents who did not directly participate in the BSC at their centers. By T4, however, both groups reported increases in CQI practices compared to where they started. Interpreting these findings is complicated by an unexpected baseline difference: before the BSC, non-BSC participants reported higher levels of CQI practices than BSC team members. This means that the two groups did not start from the same place, which makes it harder to draw clear conclusions about the effect of the BSC on these practices. With that caveat in mind, BSC team members reported larger increases in CQI practices over time compared to non-BSC participants, which is what we would expect for those directly participating in the BSC. The fact that both groups showed increases by T4 suggests that improvements in CQI practices may have spread from BSC to non-BSC participants, though this finding should be interpreted cautiously (see Figure 12).

Figure 12. Changes in CQI practices among BSC ($n = 88$ BSC center staff) and non-BSC participants ($n = 287$ non-BSC participants)



Source: T1, T3, and T4 Center Staff Survey

Note: * $p < .05$, ** $p < .01$ change from T1.

In contrast to the significant increase in CQI practices over time among both BSC and non-BSC participants, other outcomes significantly decreased or did not change over time. Among non-BSC participants, one measure of distributed leadership (roles and responsibilities), two measures of organizational climate (collective responsibility, center commitment), SEL culture, and family engagement significantly decreased from T1 to T3. Although these decreases were no longer significant by T4 for several outcomes, decreases in collective responsibility and SEL culture were still significant at T4 relative to T1. Changes did not vary significantly between BSC and non-BSC participants or between those in centers with robust and less robust BSC participation (see Appendix F).

Qualitative data from interviews and focus groups illuminated several areas in which practices may have spread beyond BSC team members. The first was in the strengthening of the home-to-school connection. Several BSC team members described implementing family engagement strategies throughout the center and eventually sharing strategies directly with families. BSC team members reported engaging families using specific SEL practices they had gained from the BSC, suggesting that the BSC reached beyond the center. Participants also shared that specific SEL-supporting strategies such as feeling charts, emotion check-ins, and questions of the day spread among classrooms and, in one instance, spread from being a strategy used just with children to a strategy used among the adults in the center to promote connections.

"We definitely saw like the things that we were doing spread into like more classrooms than we had originally intended throughout our school. It was kind of like we started in one and two classrooms and then we added a third and it just kept like kind of trickling down. So, we definitely saw the spread throughout the school, which was nice. And then we eventually did it for the families too. So yeah, we were able to do the emotions chart and provide it with the families at home..., so it kind of spread to [the] home and center as well, which was nice." – **Teacher**

"We started with like a feelings chart, which spread throughout a lot of the classrooms. You know, we started with just a couple and that actually went so well that we put it in some of the younger rooms as well. So even more of our co-workers were involved than we originally planned." – **Teacher**

"We kind of did like a question of the day. And only one of the classrooms did it, but all of the teachers started joining in too. So like all the teachers are like, oh, we can't wait for that. So that kind of just opened up something else for us to be involved in and the kids loved it." – **Administrator**

Facilitators of spread

A key facilitator of the spread of BSC practices was the leadership of BSC team members as champions of the approach. Several interviews described a key player, or key players, within their center who participated in the BSC and emerged as leaders to spread the practices among classrooms or entire centers. Importantly, centers differed in their roll out of BSC activities. Some smaller centers included a teacher from every classroom in their BSC team from the start. Others only had a small group directly participate but very intentionally shared information learned from the BSC with all other teachers and staff in the center and, in some cases, across multiple sites. In some cases, a BSC teacher led the spread of BSC practices to non-participants through informally sharing classroom tips and advice with their colleagues, while in other cases, an instructional coach within a center led a training for the entire center's staff teaching about BSC-related practices. The centers in which BSC practices permeated to non-participants found that leadership, whether formal or informal, of a trusted colleague was key in sharing strategies.

"I think that she did a great job of helping other teachers when they were dealing with like behavioral issues or things in their classroom, she kind of helped guide them in there, which was nice." – Administrator

"So the design for us was that those three would be the participants, but then everything would be brought back and implemented with all staff. And that was at both centers and so that was the program model that we actively followed. That was the intentionality of it. [...] We do these team meetings and these program developments as a team. So it's always integrated. So yeah, [the three teachers] were all doing the presentations to the entire staff." – Director

"[Center support staff] specifically, I think whether it was conscious or not, has definitely applied it to some of her other sites. She has another location that it has been a struggle to have staff buy into coaching in general, but also just change in general. And she's made a lot of strides over the last year. And I think, whether she realizes it or not, it's because she's just been doing one small thing and then another small thing. And so, I have seen it, you know, bleed over into that program." – Administrator

Barriers to spread

BSC team members noted that a barrier to the spread of BSC strategies was that classrooms and centers may be siloed from one another. For example, one teacher noted that it's important to individualize practices for each classroom but one downside of doing so is that effective strategies in one classroom may not translate well to another. Participants reported selectively sharing strategies and adopting what works in other settings while leaving behind what does not. Others shared that, in some centers, individuals who were not directly involved in the BSC did not see themselves as part of the process and therefore did not show interest in or uptake of BSC strategies.

RQ6. What changes do BSC participants see as being sustainable beyond the end of the project and what are key facilitators of sustainability?

Key Takeaways:

- Participants identified four key areas in which BSC strategies were likely to be sustained beyond the end of the BSC: 1) SEL strategies, 2) family engagement, 3) a CQI mindset, and 4) workplace climate
- Three facilitators supported sustainability:
 - Low implementation burden: strategies that required minimal ongoing effort were most likely to stick
 - Integration into existing operations: practices embedded into regular schedules and routines were more easily maintained
 - Alignment with broader systems: where states had incorporated CQI training into their quality improvement systems, BSC participants found themselves better prepared and more connected to ongoing expectations
- Participants identified two barriers to sustainability:
 - Time and competing priorities: data collection and analysis were particularly hard to maintain; some directors noted they lacked the skills to interpret data independently without ongoing coaching support
 - Staff turnover: as new staff join centers, additional training is needed to bring them up to speed on BSC strategies
- Participants identified the need for further support to help them sustain BSC practices, particularly for onboarding new staff and continuing to make sense of data

In interviews and focus groups, participants identified four key areas in which BSC strategies were likely to be sustained beyond the end of the BSC: SEL strategies, family engagement, a CQI mindset, and workplace climate.

SEL practices. Center staff reported that SEL strategies they implemented during the BSC were well received by both children and staff and improved the classroom climate. Strategies that proved most effective—particularly for children with more challenging behaviors—were seen as most likely to be sustained. Several centers also noted that the BSC sparked interest in deeper SEL learning, with staff going on to pursue additional professional development such as Conscious Discipline or the Pyramid Model.

“I think we definitely have kept in the social emotional component that we came up with, that helped the teachers and it helped the students and the communication with the parents. Also, it’s something that is now. I think, when someone gets in the flow of something, it just becomes a pattern. So like Teachers 7 and 8 were saying that engagement went way up. And the PDSA with the idea of how to break it down into smaller pieces, yes, I do think that that will stick around as opposed to let’s just implement this big change. It’s little bit by little bit. So that aspect of it absolutely I think will stick around as well.” – Teacher

Family engagement. Center staff reported that efforts to improve communication with families are being sustained through strategies such as one-on-one communication with families or family engagement events. Parents who participated in the BSC echoed this sentiment and identified specific practices they expect to continue, such as monthly family meetups, group chats, and e-newsletters. Both parents and center staff anticipated a sustained stronger overall culture of family engagement.

CQI practices and mindset. Some centers reported continuing to use the PDSA cycle formally to test new ideas. Other center staff noted that although they are no longer collecting data in a formal way to test PDSAs, they retain a CQI mindset more informally, using observation to notice patterns in children's behavior and make small adjustments to the classroom environment. The concept of making small, incremental changes emerged as a core takeaway that participants carried forward.

"The teachers are still using the behavioral chart because especially when we get new children for the new school year, they started using it again to see. And then like I said, they share with the teams in the other classrooms, so the other teams are using it too. But using that behavior chart really helped them pinpoint and see like, 'Oh my God, it's happening at this time and now we could, you know, make adjustments or we could figure out what else we could do.'" – Administrator

Workplace climate. Centers used monthly surveys during the BSC to monitor psychological safety and workplace culture. One center reported that they will continue this practice; others indicated that they will maintain specific strategies that they implemented to build a positive workplace, such as restructuring staff meetings, checking in on how staff are feeling, and responding to small staff requests when they arise.

"I attribute the CCL for the kickoff of something else we implemented because the cycle of PDSAs, looking at our social emotional data more carefully rather than all areas of learning and really looking at how do our staff come to work, what frame of mind are they in? What are our staff triggers? What are our staff's needs?" – Administrator

Facilitators of sustainability

BSC team members identified three main facilitators to sustaining BSC practices beyond the end of the BSC. These facilitators are further explored in the CCL Phase II Systems Brief.

Low implementation burden. Strategies with minimal ongoing demands were seen as most sustainable. For example, in one center, a parent who was involved in the BSC noted that the family group chat that was started during the BSC required no ongoing maintenance and would continue naturally. Similarly, classroom changes like restructuring play centers were easy to maintain once in place.

"So, I still do my emotional check in every day and my kids love it... Sometimes if they came in sad, they'll ask me, 'Can I go change it? I'm happy now,' you know. So, I definitely still use that. My circle time is still the same. I've kept it so that I split it up so we're not sitting for those, you know, [long] amounts of times. I've kept most of my changes in place and I still watch like now I'm a little more aware and if I start to see it, I, you know, can make the adjustments as needed." – Teacher

Integration into existing operations. Sustainability was also stronger when new practices were embedded into how centers already operate. For example, one administrator incorporated weekly reflective staff check-ins into the regular schedule. Building time for reflection, surveys, and data review into existing routines reduced the effort required to sustain them.

"We're still doing reflective meetings, and that's something that we have continued to do, and so, you know, going back to my point of like, why is it hard to maintain this? It is hard to maintain this because you have to be intentional about it, right? And you have to have a system for it. I think the check-ins that we're having with teachers right now both during our team meetings and one-on-ones might make it more feasible if we maintain the goal of continuing this reflection." – Director

Alignment with broader systems. Finally, one participant noted that their state had incorporated CQI training using PDSA cycles for all centers that accept child care subsidy. Their BSC experience made that state-led training easier to understand and apply, suggesting that alignment between the BSC and broader system-level initiatives can reinforce sustainability at the center level.

"Any program that has state subsidies for childcare had to go through this new continuous quality improvement training and it was PDSAs. I went...and it was the exact same thing...And so I was able to kind of explain to the group that I was sitting with, since I had already gone through it. And it definitely made more sense the second time, but so now everyone in [state] has to do it, so it's given me a leg up." – Director

Barriers to sustainability

BSC team members identified two main barriers to sustaining BSC practices beyond the end of the BSC.

Time and competing priorities. Mirroring the challenges to participation, participants emphasized that time and other daily priorities present the largest barriers to maintaining BSC practices. Data collection and analysis were particularly difficult to sustain, and several centers reported plans to track data informally. Some directors reflected that they do not feel that they have the skills to interpret the data on their own and would benefit from ongoing support for data analysis.

Staff turnover. Another center-level barrier to sustaining BSC practices is high turnover in the ECE field. As new staff join the center, additional training is needed to prepare new employees to use BSC strategies. Center turnover was also noted as an overall implementation barrier during the BSC.

BSC participants suggested that some level of ongoing coaching support would help sustain BSC practices and address these two barriers. For example, participants suggested that coaches could facilitate a training to teach BSC concepts to new employees or provide guidance to help centers continue to interpret PDSA data.

“What would be extremely helpful is not to just run through this program and be a one and done type of situation, but for it to be again more of a continuum, more of a supported system in which maybe we send different staff members next time or you know, we continue to assess. You know, there's always going to be stuff to work on so that we have access to these high-level surveys because we don't have the budget to do things like this. Like those surveys were extremely helpful because it, you know, it gave us good strong data to work on, but we can't afford to do that process independently as a center.” – Director

RQ7. To what extent were participants satisfied with their experience and what are their recommendations for improvement?

Key Takeaways:

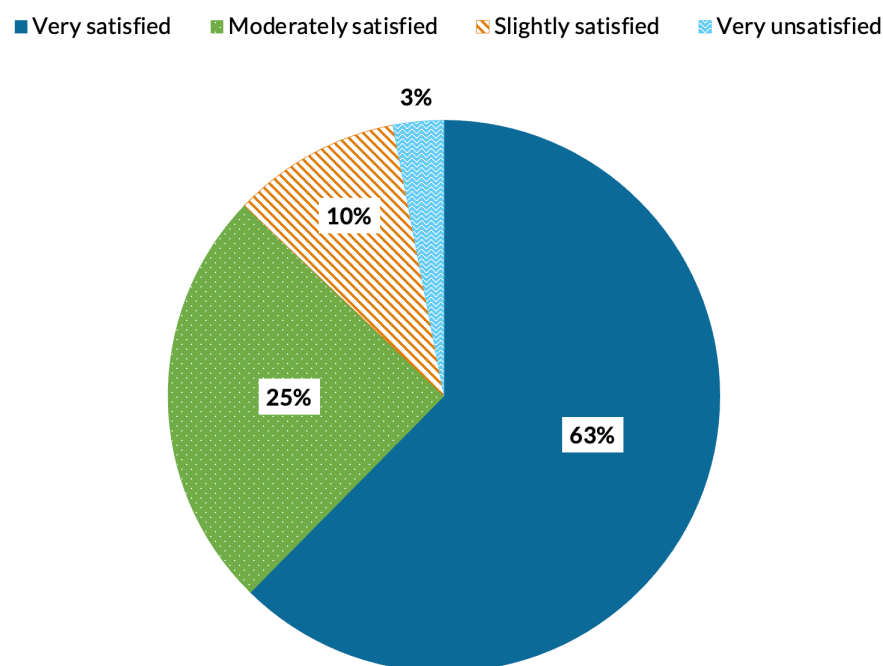
- 90% of overall BSC feedback form respondents would recommend participating in a BSC to staff in other child care/Head Start centers
- 88% of overall BSC feedback form respondents were “very satisfied” or “moderately satisfied” with their BSC experience
- In-person learning sessions were a highlight, and participants wanted more in-person engagement
- Suggestions for improvement included:
 - Set clearer expectations through a stronger onboarding process
 - Offer more specific strategies and individualized coaching support
 - Restructure or reduce affinity group meetings
 - Replace SharePoint with a more accessible platform

Overall, BSC team members were satisfied with their BSC experience. As described in the Evaluation Methodology section, at the end of the last learning session, participants completed an overall BSC feedback form. Figure 13 shows the distribution of responses from the 40 participants who responded to this survey. When asked about the BSC overall, 88 percent of respondents indicated that they were “very satisfied” or “moderately satisfied” with their experience.

"What I really loved about the BSC was the reflection, it really helped you or encouraged you to really reflect from within. And when I think about any PDSA that we worked on, it's so important because it comes from us. For example, me building community with my team, right? Or parent engagement; we have to sit and think about what am I actively doing to meet these goals, right? ... That felt really special and really invigorating." – Teacher

"It was an incredibly positive experience and I think I can speak for [center staff] to say that. To the extent that they participated, everybody felt like it was really, really valuable, and really well run and managed, and the communication was good." – Parent

Figure 13. Participant satisfaction with the BSC (n = 40 BSC team members who completed the overall BSC feedback form)



Source: Overall BSC feedback form (April 2025)

Participants also completed satisfaction feedback forms at the end of each of the four learning sessions. In total, we received 176 responses across the four learning sessions. Figure 14 shows respondents' satisfaction with the learning sessions, aggregated across the four sessions. The vast majority of respondents held favorable views of the learning sessions, with over 90 percent agreeing that the sessions had helped them interact with others in an engaging and meaningful way. In interviews and focus groups, participants shared that they especially appreciated the in-person learning sessions and highlighted the value of having dedicated, distraction-free time that allowed for collaboration both within and across BSC teams.

90%

would recommend participating in a BSC to staff in other child care/Head Start centers

83%

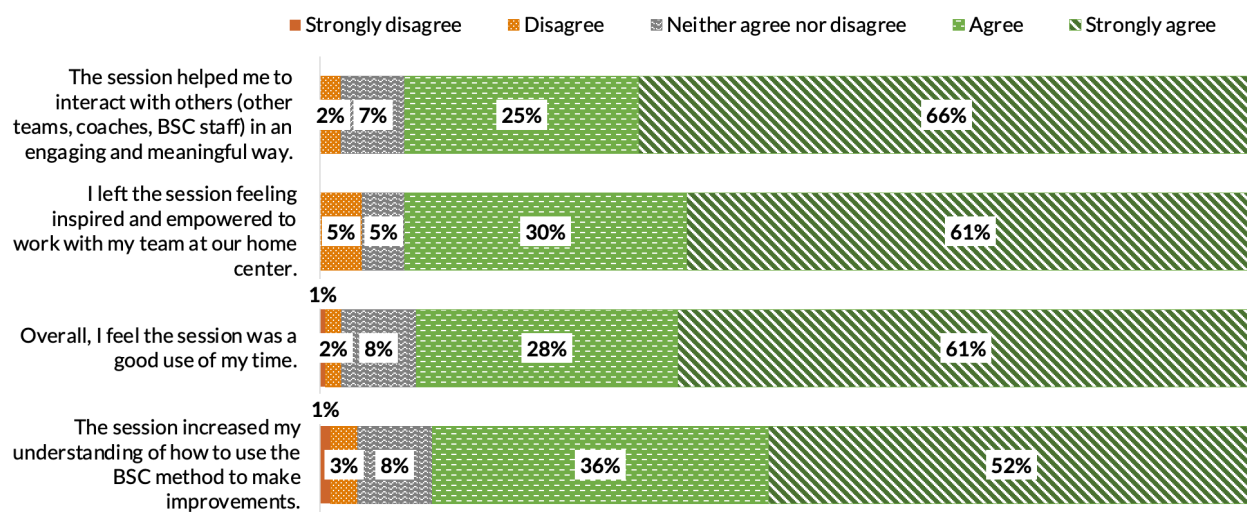
would like their regular PD/TA provider to be able to offer the BSC for quality improvement support in the future

Source: Overall BSC feedback form (April 2025)

"I think in-person was probably the best, connection-wise, because we had two sessions in-person. You just felt different, you were rejuvenated, there were no other distractions going on, it was just solely this." – Teacher

"I am big with the in-person stuff, I think I grab more information. I like to have a big collaborative group. I like that they're interactive, but that there's also dedicated time to just be with your team. Because like we all said the time is hard, we all can't always get together or have a productive conversation at times. So, to have that sacred time outside of the program and with others too. I really like those." – Director

Figure 14. Satisfaction with learning sessions, combined across all four learning sessions (n = 176 responses to BSC learning session feedback forms)



Source: BSC learning session feedback forms (2024-2025)

Recommendations for improvement

In focus groups and interviews, BSC team members, staff, and coaches made recommendations for improvement. We summarize the major categories of these recommendations below. Many of these suggestions align with barriers that are summarized in the barriers to participation section above.

Set clearer expectations through a stronger onboarding process. As described in the barriers to participation section, BSC participants were uncertain about the expectations for their specific role and the overall goals of the BSC. The BSC coaches echoed this feeling of uncertainty when it came to their own roles, especially for coaches who had never participated in a BSC before. To address some of the misalignment of expectations and uncertainty, BSC team members and staff recommended having a longer orientation and onboarding period with more individualized support to each center focused on building their BSC team and truly understanding the commitment and goals of the BSC. Participants also suggested that providing role-specific descriptions of expectations (e.g., administrators, teaching staff, parents, etc.) would help each person understand their specific responsibilities within the BSC. In this project, BSC coaches were recruited and onboarded weeks before the BSC began. For the future, BSC staff recommended onboarding coaches earlier in the process and having coaches be involved in center recruitment and the extended onboarding process for centers.

"If we built in the resources and the expectation that there be some kind of quarterly or monthly touchpoint with each program individually, it doesn't have to be in person, just something, I do think that would help this population differently than maybe other BSCs and other populations. They're so relational. They're not people who are sitting at a computer. They just really like value that kind of relationship-building differently, perhaps, than a hospital administrator." – BSC Staff

"It might be a case where some people might actually need like a micro course, like 4 sessions in the course of a month or two, where it's really introducing like the concept of PDSA in much detail or CQI and those sort of things. I know we did that the first day, but that was probably like 45 minutes going over that one day, and maybe people were tired. [...] So maybe if there's almost a mini course beforehand, they really dive deep into the concepts, so they're prepared more in terms of the concept of what they need to be doing. I think it'd be helpful."

– BSC Coach

Offer more specific strategies and individualized coaching support. Across states, centers, and roles, there was a consensus that participants wished that BSC coaches and staff had offered more specific ideas for SEL strategies that participants could try in their centers. BSC participants valued the collaborative learning environment that allowed them to generate their own ideas for strategies based on their data, priorities, and through learning from other centers. Yet, they felt they would have benefited from more concrete expert guidance and suggestions for specific strategies they could test. Additionally, participants shared that it would be beneficial for centers to have a clear point-person who they built a relationship with throughout the BSC. Relatedly, although individualized coaching is not part of the BSC model, both participants and coaches suggested that having a few BSC staff visit the centers throughout the BSC period would be a useful strategy to build relationships, maintain momentum, and help answer questions that might be blocking participant progress.

"So, we gather all of the information, we gather the behaviors, we gather the situations and all of that data we're collecting and collecting, collecting, collecting. And I was almost like waiting for the part where I would have like a professional tell me [...] to have a new insight on how do you deal with this, you know, a professional telling me...how you might address this, how I could do this differently and I feel like that part of it never really came."

– Teacher

"I still think having like a touch point, and maybe it's already there and people are not taking advantage of it. But like, is it an additional person on the team that sort of serves as that one-on-one personal liaison? Sometimes when it's the coaches and we're the ones doing the presenting and you know [BSC staff member] and those leaders that are presenting the ideas and asking them for the data, people are less hesitant because they have this perceived authority or this perceived "I want to do a good job and I don't want to ask questions because then they're going to think I don't understand." But when you have that more relational kind of person on the team, that's like, 'Hey, how's it going? What do you think about this?' And works in that way more informally, to just make sure that they could share any apprehensions or things."

– BSC Coach

Restructure or reduce affinity groups. Low attendance, in particular for the teacher and parent affinity groups, made calls repetitive and reduced their value over time. Given that the BSC already has many required activities and that time constraints are a major stressor, participants across roles recommended revisiting the frequency and function of the affinity group calls. Some suggested that affinity group calls be replaced with office hours where individuals could join to ask questions or receive advice on specific issues. Others suggested shortening or altogether eliminating the affinity group calls.

"I feel like if the meetings had been shorter, it would have been easier to keep people engaged and happier; short and sweet, you know? Because everybody's got an agenda and something to do. So I feel like if there had been shorter meetings, that would have been a lot better for people. But scheduling an hour, or three hours, is a big chunk of time at a center when you have so many people out of the classroom. So that's difficult."

– Teacher

"I almost wish there was an office hours like in college or where there could be an open session where our coach was available every Thursday from blank to blank if you had any questions. It would be nice to take that one step further and use our data and be like, 'So in my class it seems like between X and four toddlers are struggling. Here are some suggestions we have.' Then I could use that as a soundboard and be like, 'You know what, I didn't think about it in that way.' [...] It'd be nice to have that outside perspective to brainstorm with and to see that data and help us interpret that data into something productive for us."

– Director

Replace SharePoint with a more accessible platform. Participants expressed frustration with the technological barriers to using the SharePoint platform to upload data. Participants recommended switching to a more user-friendly platform so that everyone can join and so all participants can see updates

from other centers to facilitate peer learning between meetings. Additionally, several individuals expressed interest in having an easier to access peer to peer communication platform.

"I think barrier wise for that is that they're not being able to access the central location that has everything like the 1 Stop Shop. So, if they were to try and go back to it, they have to now start looking through their emails for the links of things. – BSC Staff

Study Limitations

There were several limitations to this study, including reliance on self-reported data, sample size and attrition, lack of a comparison group, and length of the sustainability period. In addition, this study could have included additional baseline and implementation-level factors in analyses.

Reliance on self-report data

The measures used in this mixed-methods case study (i.e., surveys, interviews, focus groups, and administrative data) relied heavily on self-reported data. Self-reported data may be subject to response bias and often cannot be verified. For example, perceptions of teachers' family engagement practices are likely skewed by specific interactions they have recently had with families and other recent experiences.

In addition, we saw a phenomenon in our data that has been found in other QI evaluations—that self-reports of perceptions or practices go down throughout the CQI activities following initial assessments of evidence-based practices.¹⁴ We saw this in our findings related to self-reported measures of trust among teachers and teacher reports of family engagement. Some possible explanations for this pattern are that individuals become more aware of what evidence-based practices look like and/or feel safer in responding honestly to survey items about their abilities and their organizational climate over the course of participation in a CQI process. Indeed, a heightened awareness of the areas in need of improvement through BSC participation was one of the explanations BSC participants gave when reviewing findings during the data walks for this study. Whatever the underlying reasons are for the pattern of findings with self-reported data, it would be helpful in future research to include additional measures, such as observational measures collected by an observer "blind" to participation status, that are less subject to response bias.

Sample size and attrition

Although the size of our sample was not small, there were still limitations in what we could examine. For example, the size of our sample of individuals who responded to the surveys who were not participants in the BSC limited our ability to look deeply at the "spread" of quality improvement and SEL practices to those who did not have first-hand exposure to the CQI methodology. The spread of CQI and evidence-based practices is part of the Theory of Change for this type of professional development methodology. A larger sample size would permit more robust analyses of spread of evidence-based practices.

Another limitation of this study was low response rates over time (i.e., attrition). Attrition is common and even expected in any longitudinal study, and our initial power analyses accounted for attrition. Our analyses also imputed missing data to accommodate this limitation. Nevertheless, low response rates limit the types of analyses we can do. Response rates were particularly low among parents, and furthermore, parent surveys were distributed through an anonymous link that did not connect individuals' responses over time. Therefore, parents' survey items regarding family engagement at baseline could not be linked to the same parents on the post-BSC survey. We therefore could only report on family engagement at the level of the center (essentially reducing our sample size to 19 for those outcomes), not at the level of change over time for individual families.

Lack of a comparison group

It is hard to interpret the statistically significant changes we observed when we do not know whether these improvements would have happened in the absence of the BSC. Future research should include a comparison to “business as usual” or planned comparisons with other professional development models that support the ECE workforce in implementing evidence-based practices.

Length of sustainability period

The BSC is a long-duration CQI process that lasts 12 to 18 months. In this study, we collected follow-up data six months after the completion of a 12-month BSC. This is a relatively short sustainability period given the length of the intervention. The goal of a BSC is, in part, to change organizational structures and processes to support the ongoing use of evidence-based practices and CQI methods. In future research, it would be helpful to follow participating centers for longer periods of time after the completion of a BSC to explore what CQI and evidence-based practices are institutionalized and sustained. This is especially important given the level of staff turnover centers experience.

Additional baseline and implementation-level factors to consider

The logic model for Phase II of the CCL project (Appendix C) indicates that baseline factors at the system, organization, and individual levels should all be taken into consideration when evaluating the effectiveness of the BSC within ECE contexts. Furthermore, how effectively the five elements of the BSC methodology were implemented influences the dosage of the BSC that is experienced by participants (indicated as “outputs” in the logic model). The logic model also indicates that the quality of BSC implementation can indirectly affect whether the mechanisms of change are activated and whether short- and longer-term outcomes are achieved via the level of BSC participation among centers.

Baseline system-level factors were considered when selecting the states in which to implement this study; we selected state contexts that seemed hospitable to the BSC methodology. However, variations in state context were not included in the analyses represented in this report. While qualitative findings highlighted center-level and implementation-level facilitators and barriers to participation, our survey findings examining individual- and center-level moderators did not show a clear pattern of influence over time. This suggests a need for future research to better understand which individuals and centers benefit most from an approach like the BSC, as well as alternative survey measures or other data collection methods to better measure these factors.

Finally, while we gathered, analyzed, and reported on data related to BSC implementation in this study (e.g., we included center-level “participation scores” in our analyses, shared satisfaction scores among BSC team members, and reported on organizational capacity to participate in the BSC), we acknowledge that variations in the delivery of the five key elements of the BSC across the three BSCs were not as thoroughly considered in this report. Furthermore, we did not include cost factors in our analyses. In future research, it would be worthwhile to incorporate more measures of implementation outcomes, including fidelity of implementation and costs, in the evaluation of BSCs within the ECE context.

Summary and Conclusions

Phase II of the Culture of Continuous Learning project examined the BSC as a methodology to support the use of evidence-based practices in ECE and sought to add to the evidence base for the CCL Theory of Change. Our research found that, across the 19 centers in three states that participated in BSCs to promote evidence-based SEL practices, there was evidence that mechanisms of change and some outcomes changed in a positive direction over time. The discussion below incorporates the reflections of the BSC team members who participated in virtual data walks to review our findings ahead of the publication of this

report. In particular, these BSC team members provided insights related to the discrepancies between our quantitative and qualitative data.

The clearest and most consistent finding was that BSC participation was related to an increase in CQI practices, which is indicative of intra-organizational learning (i.e., learning within the center). Specifically, participants increased the frequency of CQI practices, such as using tools to identify areas for improvement and designing a change or strategy to try out. Notably, increases in CQI practices were sustained six months after the BSC concluded and extended beyond the individuals who directly participated in the BSC. Increases in CQI practices were greater among centers that had robust participation in the BSC. Taken together, this suggests that increases in CQI practices were both sustained and spread throughout ECE centers, especially among centers that robustly participated in BSC activities. There was also some survey evidence of increases in administrators' use of data to inform decisions and practices, although this was only a statistically marginal effect. Findings related to increases in CQI practices and data use were supported by both qualitative and quantitative data, and data walk participants felt the data were consistent with their experiences.

The BSC also successfully created a collaborative learning community across ECE centers. In-person peer learning and cross-center collaboration were among the most consistently and enthusiastically valued features of the BSC. Despite many competing demands and limited time and staffing, centers made a strong effort to participate in the BSC, in part because of the extent to which they valued connecting with staff from other ECE centers. In some cases, these connections were long-lasting, with staff from different ECE centers exchanging contact information and continuing to support one another beyond the end of the project. Participants shared that this type of cross-center peer support is not common in the professional development activities in which they typically engage and is a unique feature of the BSC that participants valued.

Unexpectedly, survey measures showed limited evidence of change in short- and longer-term outcomes related to the CCL Theory of Change. For example, there were no significant improvements in survey measures of SEL-promoting classroom practices, challenging behaviors, or employee retention over the course of the study. Several measures of organizational climate and family engagement unexpectedly declined during the BSC period, though most returned to baseline levels by follow-up. These survey findings stood in contrast to the qualitative data that consistently described meaningful shifts in organizational climate, educators' knowledge and attitudes about SEL, and classroom SEL practices. In focus groups and interviews, participants described concrete changes in how they structured their classrooms, communicated with families, supported children's emotional development, and approached problem-solving with colleagues.

The discrepancy between the qualitative data, which provided evidence of changes in multiple outcomes, and the survey data, which did not find evidence of change in those same outcomes, could point to several possibilities. First, timing may be a factor. Although a 12- to 18-month period is substantial, it may not be long enough to move organizational and mindset changes into detectable improvements in quantitative measures of outcomes. Another possibility is that the changes experienced were diffused across many different types of outcomes, and the number of individuals who responded positively regarding a particular outcome was too few to reach statistical significance. One strength of the BSC is that centers can choose to focus on the areas of the Change Framework that are most relevant to their specific needs. This individualization of goals is a strength but also means that change is spread out across different areas of focus and thus becomes harder to detect when data are combined across ECE centers, as they were for the survey data analyses. A related possibility is that several "outlier" centers were unduly influencing the overall trends when data were combined across all 19 centers. Further analyses that look at center-level or state-level differences over time could help determine if unique contextual factors may be at play when evaluating changes in outcomes over time.

Data walk participants offered several additional insights into understanding the discrepancies between qualitative and quantitative outcome measures. Most notably, they remarked that mean levels on survey outcome measures were high overall, suggesting a ceiling effect for some outcomes and leaving less room to

document improvement. Data walk participants also suggested that temporary decreases in some outcomes may reflect increased awareness of evidence-based strategies rather than genuine decline. For example, participants may have rated their family engagement practices lower after participating in the BSC and realizing that there are evidence-based family engagement strategies they had not yet put into practice. Finally, some data walk participants noted that their centers underwent significant structural changes during the course of the BSC that were stressful for staff and may have led to slightly more negative overall responses at T3. These are just a few possible explanations for the discrepancy in findings across data sources; further research is needed to thoroughly examine these and other explanations.

Regarding additions to the evidence base for the CCL Theory of Change, we have now found evidence across two phases of the CCL project that several of the hypothesized mechanisms—particularly CQI practices and inter-organizational learning—are associated with BSC participation. However, given the discrepancies in findings regarding outcomes across quantitative and qualitative measures in Phase II of CCL, more evidence is still needed to support the full Theory of Change (see Appendix B). We might need larger studies at scale to provide the sample size to detect changes in outcomes from both quantitative and qualitative measures.

Implications

These findings are noteworthy for several reasons. At the systems level, CQI has received increased attention as a mechanism to improve child care quality as states shift to focus more on recognizing quality improvement in addition to or instead of rating quality. For example, virtually all quality rating and improvement systems (QRIS) support CQI through TA (n = 40 of 46),¹⁵ and all provide financial or material supports to incentivize centers that demonstrate the use of CQI practices (e.g., quality awards or bonuses, classroom materials; n = 46 of 46).¹⁶ Our findings indicate that the BSC may be a promising approach to support the development of CQI practices and data use. As noted above, there were discrepancies across data sources in whether SEL practices increased over the BSC implementation period. Furthermore, participants consistently noted that they wished they had received more expert guidance in selecting specific SEL-promoting strategies to try in their centers. While the BSC emphasizes participant-driven inquiry, the methodology also relies on coaches to support teams in using evidence-based practices that they can adapt to their unique circumstances. Our findings suggest this latter element could be strengthened for BSC implementation. Providing coaches with additional preparation, tools, and dedicated time to share specific SEL strategies, particularly early in the BSC, may help future implementations better meet participants' needs. Even with this opportunity for refinement, this study's findings reinforce findings from Phase I of the CCL project that concluded that the BSC is a promising professional development methodology that improves CQI practices within and across ECE centers. States should therefore consider the BSC as a method to address CQI in their quality improvement systems. Specific findings about facilitators of and barriers to BSC implementation, such as access to unrestricted stipends and technology, are factors for states to keep in mind when developing a roll-out and/or scaling up of a BSC initiative.

At the center level, the peer-to-peer connections that the BSC fosters both within and especially across centers are also a unique strength. Providing opportunities for peer learning both within and across ECE centers has the potential to motivate individuals and centers to continue their individual and collective continuous learning efforts. Cross-center connections set the BSC apart from other professional development methodologies. Specifically, neither individual coaching nor center-based training includes an explicit cross-center component.

Another feature of the BSC that makes it attractive to centers is its flexibility as a method that can be used to support the adoption and spread of evidence-based practices in many different content areas. ECE centers should consider how the BSC methodology can be used in an ongoing way to support CQI in classroom-based and organization-wide practices. Based on this study's findings, centers should consider ways to make the collection and use of data for decision-making a regular part of staff's workday routines, from administrators to teachers and other staff. Centers should also consider how characteristics such as

staff turnover affect BSC success; in this study, turnover emerged as a barrier both to implementation and to sustaining positive practice changes over time.

Future Research

Future research should take steps to further understand the present findings and to address the limitations in the current data collection. Specifically, further analysis of the data collected through this project could examine the extent to which teacher and administrator reports on the same constructs varied and whether perceptions aligned more over the course of the BSC. Additionally, future analysis could examine whether there were any other meaningful moderators of change, including other center and individual background characteristics that were not examined in the present analysis (e.g., number of child care subsidy recipients at the center, individual readiness for change). Future analyses might also examine whether spread to non-BSC participants varies depending on the proportion of center staff who are BSC team members. As noted in the limitations section, future data collection could address additional baseline and implementation-level facilitators, include a comparison group design to strengthen the ability to examine causality, incorporate observational measures of changes in practices to limit self-report bias, and employ a larger sample and longer follow-up period to examine whether initial changes in CQI practices and mindsets are sustained and whether they lead to changes in classroom climate, child, and family outcomes.

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Appendix A. Glossary of Key Terms

Term	Definition
Action period	Period between learning sessions when BSC teams collected metrics data and tested changes in practice by using the Model for Improvement and PDSAs. The sustainability action period took place after the fourth (i.e., final) learning session.
Affinity groups	Role-specific groups (senior leader, team leader, teacher, and parent) facilitated by coaches to bring BSC team members with similar roles and from different centers together to share progress and challenges with the BSC methodology, and to share ideas for PDSAs.
All-team calls	Videoconferencing calls facilitated by BSC staff to bring together all BSC teams to share progress, challenges, and ideas for PDSAs. Typically conducted on a monthly basis and focused on specific pre-identified topics.
Breakthrough Series Collaborative (BSC or Collaborative)	The Breakthrough Series Collaborative is a quality improvement delivery methodology that is used to support organizations and systems to improve practice in a specified content area or domain of practice. ¹⁷ The BSC is designed to close the gap between knowledge and practice.
BSC staff	Experts in BSC methodology and ECE center operations who facilitate the BSC and oversee implementation in participating centers as part of the project staff.
BSC participants	Individuals in the CCL project who participate in data collection activities (e.g., surveys, interviews, and focus groups), including BSC staff, BSC teams, and coaches.
BSC teams (see also cross-role teams)	Multi-level, inclusive teams from each ECE center that participates in a BSC. Each team is made up of representatives from different center leadership levels (e.g., program directors, administrative staff, teachers, and parents). Each team appoints a senior leader (typically a center director) and a team leader (typically an administrative staff person or teacher).
Change Framework	A document or graphic used within a BSC to depict the evidence-based practices associated with the focus for improvement. This document or graphic guides the topics covered within learning sessions and helps team members select the changes they want to test during action periods. A Change Framework includes “primary drivers” (i.e., key elements or domains) of change that are associated, through research evidence, with desired outcomes within a topical area. The primary drivers have several “secondary drivers” (i.e., specific strategies or opportunities) associated with them, also based on research evidence. In the CCL project, the primary drivers within the Change Framework were based on the Pyramid Model, an evidence-based framework for supporting SEL outcomes in infants and young children.
Coaches	Individuals who have specific content expertise related to the BSC and who serve as advisors to BSC staff and as coaches to the participating BSC teams.
Continuous quality improvement (CQI)	An ongoing improvement process, in which practitioners use data to identify strengths and opportunities for improvement and then test, implement, learn from, and revise solutions. ¹⁸
Cross-role teams (see also BSC teams)	Multi-level, inclusive teams from each ECE center that participates in the BSC. Each team is made up of representatives from different center leadership levels (e.g., program directors, administrative staff, teachers, and parents). Each team appoints a senior leader (typically a center director) and a team leader (typically an administrative staff person or teacher).

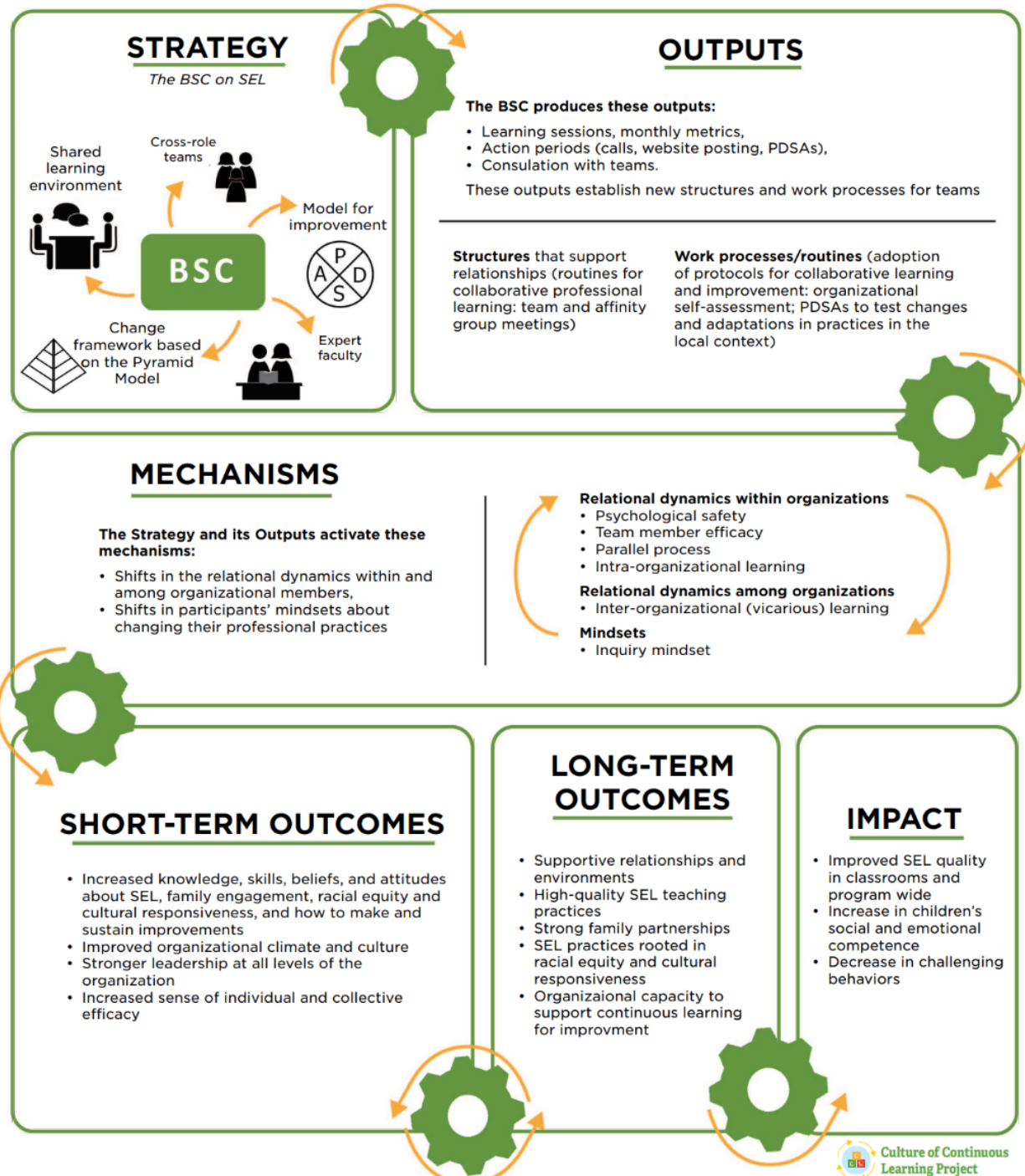
Term	Definition
ECE educators	Individuals who provide early care education (ECE) to children ages five or younger.
Inquiry mindset	The way people “approach their problems of practice with curiosity and a desire to test possible solutions and strategies to learn what works and what may not work.” ¹⁹
Learning sessions	Full-day, in-person meetings offered over the course of a BSC for all BSC team members that 1) focus on various topics, or drivers, for making improvements in practices; 2) teach key quality improvement concepts and tools; and 3) provide time for teams to develop plans for the period of time in between learning sessions. For example, in the BSC, there are typically three or four full-day learning sessions over a 12-month period.
Long-term outcomes	The desired increase and sustainment in knowledge and skills related to SEL, the use of high-quality teaching practices, and strong family partnerships as a result of the implementation of a BSC, according to the CCL Theory of Change.
Mechanisms of change	In the CCL Theory of Change, the dynamics and mindsets that specify how the outputs of a BSC (e.g., learning sessions, affinity groups, etc.) activate individual and collective learning and improvement that results in achieving the desired short-term and longer-term outcomes.
Model for Improvement	Three key questions that help BSC teams clarify their goals for improvement, establish measures to determine if a specific change actually leads to an improvement, and select the most important changes to work towards. The three questions are: 1) What are we trying to accomplish?; 2) How do we know a change is an improvement?; and 3) What changes can we test that will result in improvement?
Monthly metrics	Monthly data collected by BSC teams and submitted to BSC staff to help teams quantify their progress in key domains of the Change Framework. For example, in the BSC, monthly metrics included children’s behaviors and two-way communication with families.
Plan-Do-Study-Act cycle (PDSA)	A continuous quality improvement process that BSC teams use to test and make improvements. A single PDSA cycle involves planning to test a small change, conducting the work to make the change, studying the effects of the change, and acting on what was learned (by adjusting what was done, abandoning the test, or scaling up the change).
Center	In this report, “centers” refers to Head Start, Early Head Start, and child care centers. Centers may have single or multiple locations that provide services. QI may be delivered to individuals working in programs or to entire programs.
Professional development (PD)	Refers to the overall goal of promoting an increase in knowledge, skills, and/or dispositions of the ECE workforce. PD activities are defined as a “continuum of learning and support activities,” inclusive of activities such as training, coaching, and TA. ²⁰ PD is one quality improvement delivery method.
Psychological safety	A team climate characterized by interpersonal trust and mutual respect, where people feel safe to contribute ideas, ask questions, offer feedback, and take risks without fear of judgment. ²¹
Pyramid Model	The Pyramid Model for Supporting Social Emotional Competence in Infants and Young Children is a framework of evidence-based practices that support social and emotional competence in infants and young children. It guided the creation of the Change Framework and the content delivered for the BSC in the CCL project. ^{22,23}

Term	Definition
Quality improvement (QI) delivery methods	The mode of quality improvement that is provided to the ECE workforce. For example, quality improvement can be delivered through training or coaching to either individuals or organizations.
Quality improvement (QI) delivery systems	The wider systems providing support to ECE programs and the ECE workforce to increase the quality of the care provided to young children. These systems are diverse and include approaches such as professional development for the ECE workforce (inclusive of training and technical assistance), federal and state grants, financial incentives/rewards, measurement and rating systems, data systems, and higher education. ²⁴
Quality Rating and Improvement System (QRIS)	A systemic approach to “assess, improve, and communicate the level of quality in early and school-age care and education programs.” ²⁵ Ratings or levels are assigned to ECE programs that meet a set of defined program standards. Some states have recently shifted to remove ratings from their system and focus only on QI. Other data sources may refer to these systems as Quality Improvement Systems (QIS).
Senior leader	High-level administrator or leader from the center (e.g., center director) participating in the BSC. This person is responsible for providing leadership, support, and advocacy on behalf of the BSC team. They also focus on how successful changes tested by the team can be scaled up, spread, and sustained.
Short-term outcomes	The desired increase in knowledge, skills, beliefs, and attitudes in a particular content area as a result of the implementation of a BSC, according to the CCL Theory of Change.
Social and emotional learning (SEL)	The process of building knowledge and skills to identify and manage emotions, feel and show empathy for others, effectively solve problems and cope with challenges, and build and maintain supportive relationships with others. ²⁶
Team leader	Center staff member who oversees team activities and actively guides the work of the BSC team. They serve as the liaison for all BSC-related assignments and activities, including data. Possible team leaders might include an associate director, education coordinator, or family engagement specialist.
Technical assistance (TA)	The provision of targeted and customized supports by a professional(s) with subject matter and adult learning knowledge and skills to develop or strengthen processes, knowledge application, or implementation of services by recipients. TA may include combinations of information and resource dissemination and referrals, coaching, mentoring, consultation, professional development advising, and peer-to-peer TA, as well as other forms of support. ²⁷
Training	A learning experience, or series of experiences, specific to an area of inquiry and related set of skills or dispositions, delivered by a professional(s) with subject matter expertise and adult learning knowledge and skills. A planned sequence of training sessions comprises a training program. ²⁸

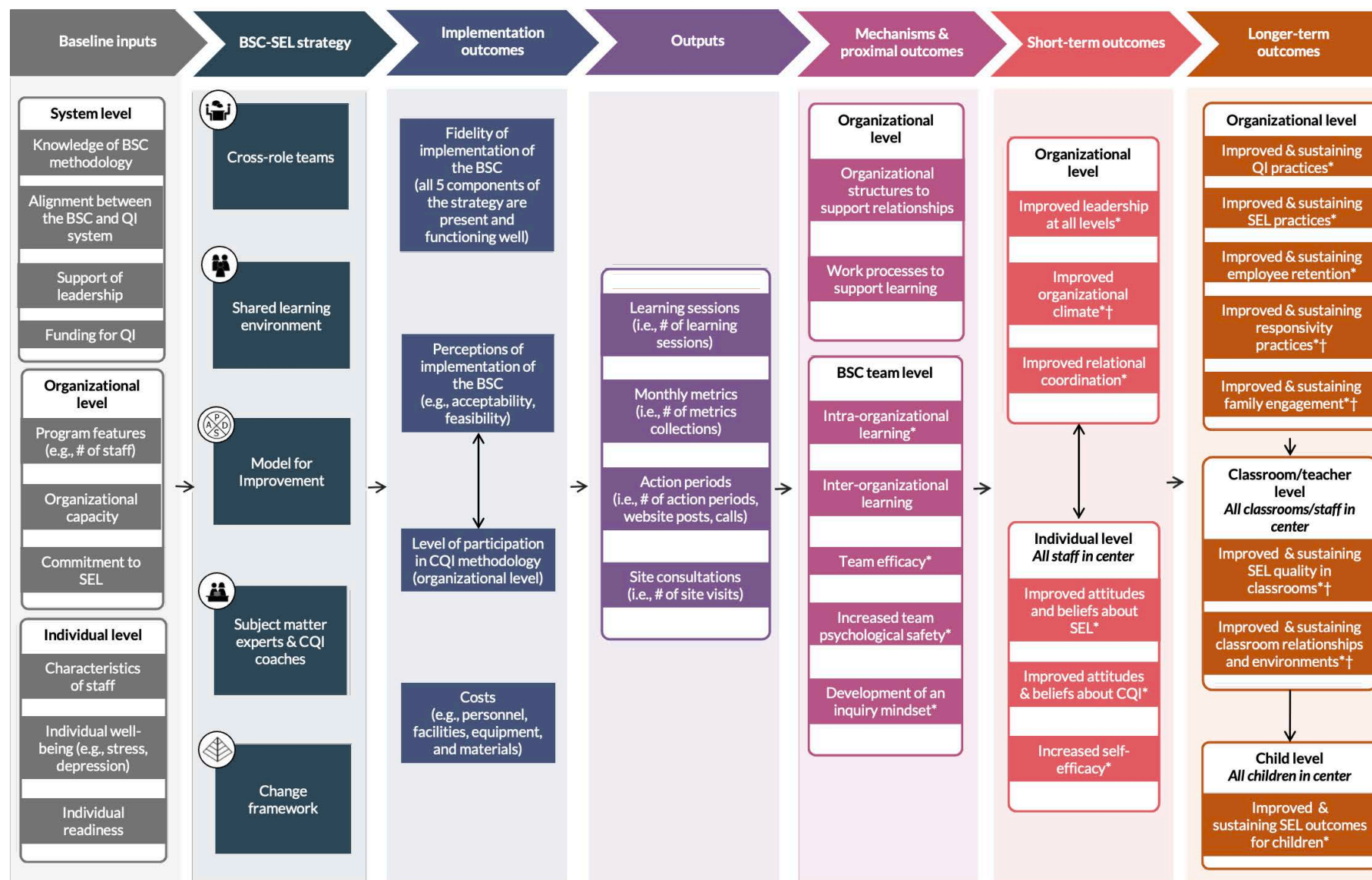
Appendix B. CCL Phase I Theory of Change

THEORY OF CHANGE

The Breakthrough Series Collaborative (BSC) to improve Social and Emotional Learning (SEL) in ECE programs



Appendix C. CCL Phase II Evaluation Logic Model



Appendix D. Measures, Data Sources, & Respondents

Table D1. Summary of measured variables, data sources, and respondents, by key elements of the CCL Theory of Change

Analytic measures	Data sources	Respondents (and time points)
BSC implementation		
Level of participation in BSC	BSC implementation data (various metrics)	BSC team members
Level of satisfaction with BSC	BSC implementation data (feedback forms)	BSC team members
Perceptions of BSC implementation	Surveys	All administrators, teachers, other staff (T1, T4)
Time Spent on BSC Activities	Surveys	BSC team members (T3, T4)
Mechanisms of change		
Use of data	Surveys Focus groups, interviews	All administrators, teachers, other staff (T1, T3, T4)
CQI practices	Surveys Focus groups, interviews	All administrators, teachers, other staff (T1, T3, T4)
Inter-organizational learning	Surveys Focus groups, interviews	BSC team members (T3)
Team efficacy	Surveys Focus groups, interviews	BSC team members (T3, T4)
Psychological safety	Surveys Focus groups, interviews	All administrators, teachers, other staff (T1, T3, T4)
Inquiry mindset	Focus groups, interviews	BSC team members (T2, T4)
Short-term outcomes		
Leadership at all levels	Surveys Focus groups, interviews	All administrators, teachers, other staff (T1, T3, T4) BSC team members (T2, T4)
Collaborative teachers	Surveys Focus groups, interviews	All teachers, other staff (T1, T3, T4) BSC team members (T2, T4)
Attitudes & beliefs about SEL	Surveys	All administrators, teachers, other staff (T1, T3, T4)
Attitudes & beliefs about CQI	Surveys	All administrators, teachers, other staff (T1, T3, T4)
Self-efficacy	Surveys Focus groups, interviews	All administrators, teachers, other staff (T1, T3, T4)

Analytic measures	Data sources	Respondents (and time points)
Longer-term outcomes		
SEL classroom practices	Surveys	Teachers (T1, T3, T4)
Perceived problems with child behavior	Surveys	Teachers (T1, T3, T4)
Spread & sustainability of CQI practices	Surveys Focus groups, interviews	All administrators, teachers, other staff (T1, T3, T4) BSC team members (T4)
Spread & sustainability of SEL practices	Surveys Focus groups, interviews	All administrators, teachers, other staff (T1, T3, T4) BSC team members (T4)
Staff turnover	Survey	Administrators (T1, T3, T4)
Family engagement	Surveys	All administrators, teachers, other staff (T1, T3, T4) Parents (T1, T3)
Other analytic variables		
Paid planning time (number of hours; extent of collaboration)	Surveys	Administrators (T1)
Center size	Surveys	Administrators (T1, T3, T4)
Head Start status	BSC implementation data (application)	BSC team members
BSC participation status	BSC implementation data (application)	BSC team members
Role	Surveys	All administrators, teachers, other staff, parents (T1)
Years of experience	Surveys	All administrators, teachers, other staff (T1)
Other demographic information	Surveys	All administrators, teachers, other staff, parents (T1)

Appendix E. Survey Completion Rates

Table E1. Survey completion within the analytic sample: Administrators, teachers, and other staff

	Number of centers	Number of BSC administrators, teachers, staff	Number of non-BSC administrators, teachers, staff
Completed at least one survey (included in analytic sample)	19	88	287
Survey timepoints completed			
T1 (baseline, March 2024)	19	86	233
T3 (post-BSC, May 2025)	16	56	106
T4 (follow-up, November 2025)	16	43	92
Number of surveys completed			
Completed 1 survey	19	31	190
Completed 2 surveys	15	17	46
Completed 3 surveys	15	40	51

Source: T1, T3, and T4 Center Staff Survey

Note: Three centers stopped engaging in the study before the T3 surveys and did not receive survey invitations at T3 or T4.

Table E2. Survey completion within the analytic sample: Parents

	Number of centers	Number of parents
Survey timepoints completed		
T1 (baseline, March 2024)	18	252
T3 (post-BSC, May 2025)	10	87

Source: T1, T3, and T4 BSC and Non-BSC Parent Survey

Note: BSC and non-BSC parents are combined in the table above to preserve confidentiality, given the small number of BSC parents. BSC parents also completed surveys at T4, but non-BSC parents did not, so we only examined change in parent-reported outcomes from baseline (T1) to post-BSC (T3). Non-BSC parent surveys were anonymous, so we could not link their data over time to determine the number of surveys each parent completed. Data were aggregated to the center level for the purposes of analyses examining change over time. Three centers stopped engaging in the study before the T3 surveys and did not receive survey invitations at T3 or T4.

Appendix F. Full Results of Statistical Models

Table F1. Center-level, individual-level, and residual variance for mechanisms, short-term outcomes, and long-term outcomes among BSC center staff

Outcome	Variance components				Percentage of variance by level		
	Center	Individual	Residual	Total variance	Center	Individual	Residual
Mechanisms							
Data use	0.00	0.55	0.54	1.09	0%	50%	50%
Intra-organizational learning	0.09	0.17	0.31	0.57	15%	30%	55%
Psychological safety	0.08	0.20	0.23	0.50	15%	39%	45%
Short-term outcomes							
Positive self-efficacy	0.02	0.11	0.12	0.25	9%	43%	48%
Negative self-efficacy	0.03	0.20	0.29	0.51	6%	38%	56%
Leadership at all levels: Roles/responsibilities	0.06	0.20	0.21	0.47	13%	42%	45%
Leadership at all levels: Teacher influence	0.00	0.60	0.48	1.09	0%	55%	45%
Socialization of new teachers	0.00	0.39	0.39	0.78	0%	50%	50%
Teacher collaboration	0.09	0.21	0.28	0.58	16%	36%	48%
Collective responsibility	0.00	0.38	0.46	0.84	0%	45%	55%
School commitment	0.00	0.37	0.22	0.59	0%	62%	38%
Teacher-teacher trust	0.05	0.43	0.27	0.75	6%	58%	36%
Beliefs about SEL: Comfort	0.05	0.18	0.16	0.39	13%	47%	40%
Beliefs about SEL: Culture	0.12	0.09	0.18	0.39	30%	23%	47%
Beliefs about CQI	0.01	0.15	0.12	0.29	4%	53%	43%
Longer-term outcomes							
SEL practices: # of SEL lessons	0.00	2.10	2.58	4.68	0%	45%	55%
SEL practices: # times supported behavior regulation	0.30	55.45	52.14	107.89	0%	51%	48%
SEL practices: # times supported prosocial behavior	27.94	7.66	61.77	97.37	29%	8%	63%
SEL practices: # times supported emotion understanding	41.35	54.03	69.99	165.37	25%	33%	42%
SEL practices: # times perceived challenging behavior	0.17	16.90	58.67	75.74	0%	22%	77%
SEL practices: # times used negative tone	0.00	4.71	3.90	8.61	0%	55%	45%
SEL practices: # days with no challenging behavior	0.29	1.11	1.58	2.99	10%	37%	53%
Perceived problems	0.00	0.03	0.02	0.05	0%	53%	47%
Family engagement (staff-reported)	0.00	0.16	0.28	0.45	0%	36%	63%
Center turnover	0.000	n/a	0.004	0.004	0%	n/a	100%

Source: T1, T3, and T4 Center Staff Survey

Table F2. Changes over time in mechanisms, short-term outcomes, and long-term outcomes among BSC center staff

Outcome	Intercept		T3			T4		
	<i>b</i>	SE	<i>b</i>	SE	ES	<i>b</i>	SE	ES
Mechanisms								
Data use	2.33***	0.11	0.23+	0.14	0.22	0.25+	0.13	0.24
Intra-organizational learning	2.33***	0.11	0.33**	0.09	0.44	0.39**	0.11	0.51
Psychological safety	3.91***	0.10	-0.09	0.08	-0.13	-0.11	0.09	-0.16
Short-term outcomes								
Positive self-efficacy	3.99***	0.06	0.06	0.07	0.12	0.09	0.06	0.18
Negative self-efficacy	2.30***	0.09	0.10	0.09	0.14	0.10	0.10	0.14
Leadership at all levels: Roles/responsibilities	3.83***	0.09	-0.20*	0.09	-0.29	-0.21*	0.08	-0.31
Leadership at all levels: Teacher influence	2.50***	0.11	-0.02	0.14	-0.02	0.06	0.12	0.06
Socialization of new teachers	3.30***	0.14	-0.16	0.12	-0.18	0.01	0.15	0.01
Teacher collaboration	1.53***	0.12	-0.12	0.12	-0.16	-0.16	0.12	-0.21
Collective responsibility	2.74***	0.14	-0.21	0.13	-0.23	-0.10	0.14	-0.11
School commitment	3.95***	0.12	-0.11	0.10	-0.14	-0.03	0.12	-0.04
Teacher-teacher trust	3.79***	0.13	-0.23*	0.11	-0.27	-0.13	0.11	-0.15
Beliefs about SEL: Comfort	4.10***	0.09	0.10	0.08	0.16	0.13+	0.07	0.21
Beliefs about SEL: Culture	4.13***	0.11	-0.11	0.09	-0.18	-0.10	0.09	-0.16
Beliefs about CQI	4.44***	0.07	-0.03	0.07	-0.06	-0.02	0.07	-0.04
Longer-term outcomes								
SEL practices: # of SEL lessons	2.93***	0.40	-0.16	0.43	-0.07	0.32	0.53	0.15
SEL practices: # times supported behavior regulation	10.81***	1.82	-0.32	1.74	-0.03	-1.17	1.87	-0.11
SEL practices: # times supported prosocial behavior	8.71***	2.01	0.55	2.03	0.06	0.13	1.82	0.01
SEL practices: # times supported emotion understanding	10.86***	2.53	0.43	2.08	0.03	0.60	2.04	0.05
SEL practices: # times perceived challenging behavior	8.24***	1.59	-0.02	1.90	0.00	1.85	2.03	0.21
SEL practices: # times used negative tone	2.38***	0.50	0.06	0.52	0.02	-0.43	0.55	-0.15
SEL practices: # days with no challenging behavior	1.40***	0.31	0.16	0.39	0.09	-0.09	0.32	-0.05
Perceived problems	0.22***	0.04	-0.01	0.05	-0.06	-0.05	0.05	-0.23
Family engagement (staff-reported)	4.19***	0.08	-0.22*	0.09	-0.32	-0.08	0.09	-0.12
Center turnover	0.07***	0.02	-0.03	0.02	-0.50	0.00	0.03	0.06

Source: T1, T3, and T4 Center Staff Survey

Note: *b* = unstandardized coefficient; SE = standard error, pooled across *m* = 10 imputations using Rubin's rules. + *p* < .10, * *p* < .05, ** *p* < .01, *** *p* < .001.

Table F3. Moderation of change among BSC center staff by level of participation (robust or less robust)

Outcome	Intercept		T3			T4			Robust			T3*Robust			T4*Robust		
	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Mechanisms																	
Data use	2.22***	0.14	0.27	0.20	0.26	0.26	0.17	0.25	0.29	0.23	0.28	-0.12	0.28	-0.11	-0.04	0.27	-0.04
Intra-organizational learning	2.37***	0.13	0.21+	0.12	0.28	0.24	0.15	0.32	-0.09	0.21	-0.12	0.34+	0.18	0.44	0.39*	0.18	0.52
Psychological safety	3.87***	0.12	-0.14	0.11	-0.20	-0.13	0.12	-0.18	0.13	0.20	0.19	0.12	0.16	0.17	0.03	0.17	0.04
Short-term outcomes																	
Positive self-efficacy	3.87***	0.07	0.08	0.09	0.16	0.10	0.08	0.21	0.34**	0.11	0.69	-0.05	0.12	-0.11	-0.03	0.11	-0.07
Negative self-efficacy	2.45***	0.10	0.07	0.12	0.09	0.14	0.13	0.19	-0.44**	0.15	-0.62	0.09	0.20	0.13	-0.10	0.19	-0.14
Leadership at all levels: Roles/responsibilities	3.73***	0.10	-0.20	0.13	-0.30	-0.25*	0.11	-0.36	0.32+	0.17	0.46	0.02	0.17	0.03	0.10	0.15	0.14
Leadership at all levels: Teacher influence	2.41***	0.14	0.04	0.17	0.04	0.06	0.15	0.06	0.24	0.23	0.23	-0.17	0.26	-0.16	-0.01	0.26	-0.01
Socialization of new teachers	3.31***	0.17	-0.14	0.16	-0.16	-0.08	0.19	-0.09	-0.03	0.29	-0.03	-0.04	0.27	-0.05	0.22	0.26	0.25
Teacher collaboration	1.57***	0.15	-0.20	0.17	-0.26	-0.23	0.17	-0.30	-0.09	0.26	-0.12	0.20	0.25	-0.26	0.17	0.25	-0.30
Collective responsibility	2.65***	0.16	-0.20	0.17	-0.21	-0.10	0.17	-0.11	0.23	0.27	0.25	-0.04	0.29	-0.21	-0.01	0.27	-0.11
School commitment	3.77***	0.13	-0.08	0.14	-0.10	-0.03	0.15	-0.03	0.46*	0.22	0.60	-0.07	0.21	-0.09	-0.01	0.20	-0.01
Teacher-teacher trust	3.69***	0.15	-0.25+	0.13	-0.29	-0.16	0.15	-0.19	0.27	0.24	0.31	0.05	0.20	0.06	0.10	0.21	0.11
Beliefs about SEL: Comfort	4.01***	0.11	0.14	0.11	0.23	0.17+	0.09	0.27	0.26	0.17	0.41	-0.11	0.15	-0.18	-0.11	0.14	-0.17
Beliefs about SEL: Culture	3.97***	0.12	-0.08	0.12	-0.13	-0.08	0.12	-0.13	0.44*	0.21	0.71	-0.07	0.18	-0.11	-0.06	0.18	-0.09
Beliefs about CQI	4.39***	0.08	-0.03	0.08	-0.06	-0.01	0.09	-0.02	0.14	0.13	0.25	0.00	0.12	0.00	-0.03	0.13	-0.06

	Intercept		T3			T4			Robust			T3*Robust			T4*Robust		
Outcome	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Longer-term outcomes																	
SEL practices: # of SEL lessons	2.47***	0.47	0.17	0.56	0.08	0.42	0.64	0.19	1.13	0.80	0.52	-0.83	0.82	-0.38	-0.25	0.84	-0.12
SEL practices: # times supported behavior regulation	10.71***	2.26	-1.70	2.24	-0.16	-2.53	2.21	-0.24	0.33	3.90	0.03	3.46	3.62	0.33	3.38	3.66	0.33
SEL practices: # times supported prosocial behavior	7.65***	2.38	-0.43	2.73	-0.04	-0.01	2.35	0.00	2.97	3.97	0.30	2.44	4.07	0.25	0.36	3.79	0.04
SEL practices: # times supported emotion understanding	10.28***	3.09	-1.08	2.74	-0.08	0.23	2.50	0.02	1.73	5.27	0.13	3.77	4.23	0.29	0.93	4.06	0.07
SEL practices: # times perceived challenging behavior	8.59***	1.93	-0.68	2.68	-0.08	0.44	2.99	0.05	-0.85	3.21	-0.10	1.67	4.27	0.19	3.54	4.85	0.41
SEL practices: # times used negative tone	2.09***	0.63	0.43	0.69	0.14	-0.02	0.74	-0.01	0.72	1.01	0.25	-0.91	1.00	-0.31	-1.03	0.99	-0.35
SEL practices: # days with no challenging behavior	1.27***	0.40	0.40	0.51	0.23	0.20	0.43	0.12	0.31	0.67	0.18	-0.61	0.66	-0.35	-0.74	0.61	-0.43
Perceived problems	0.28***	0.05	-0.04	0.07	-0.17	-0.07	0.06	-0.29	-0.13+	0.08	-0.58	0.06	0.09	0.26	0.03	0.07	0.14
Family engagement (staff-reported)	4.14***	0.10	-0.26*	0.11	-0.39	-0.11	0.12	-0.16	0.13	0.16	0.19	0.12	0.18	0.18	0.07	0.17	0.11
Center turnover	0.09***	0.02	-0.04	0.03	-0.63	0.00	0.03	-0.02	-0.04	0.03	-0.68	0.03	0.04	0.42	0.02	0.05	0.27

Source: T1, T3, and T4 Center Staff Survey

Note: b = unstandardized coefficient; SE = standard error, pooled across m = 10 imputations using Rubin's rules; ES = effect size. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table F4. Moderation of change among BSC center staff by role (administrators or teachers/other staff)

Outcome	Intercept		T3			T4			Admin Role			T3*Admin Role			T4*Admin Role		
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>
Mechanisms																	
Data use	2.43***	0.14	0.17	0.18	0.16	0.18	0.16	0.17	-0.29	0.23	-0.28	0.17	0.28	0.16	0.21	0.25	0.20
Intra-organizational learning	2.37***	0.12	0.27*	0.12	0.35	0.36**	0.12	0.48	-0.12	0.16	-0.16	0.20	0.21	0.26	0.08	0.18	0.11
Psychological safety	3.87***	0.11	-0.16	0.10	-0.23	-0.16	0.10	-0.23	0.11	0.15	0.15	0.20	0.17	0.28	0.14	0.17	0.20
Short-term outcomes																	
Positive self-efficacy	4.00***	0.08	0.03	0.08	0.05	0.10	0.07	0.20	-0.01	0.11	-0.02	0.09	0.13	0.19	-0.03	0.12	-0.07
Negative self-efficacy	2.31***	0.11	0.11	0.12	0.16	0.09	0.12	0.12	-0.02	0.16	-0.03	-0.04	0.21	-0.05	0.04	0.18	0.05
Leadership at all levels: Roles/responsibilities	3.72***	0.10	-0.21+	0.11	-0.31	-0.16	0.10	-0.23	0.31*	0.14	0.45	0.04	0.16	0.05	-0.16	0.17	-0.23
Leadership at all levels: Teacher influence	2.34***	0.14	-0.06	0.16	-0.06	0.06	0.14	0.06	0.46*	0.23	0.44	0.12	0.26	0.12	-0.01	0.25	-0.01
Beliefs about SEL: Comfort	4.11***	0.10	0.10	0.10	0.16	0.13	0.08	0.21	-0.02	0.14	-0.04	0.00	0.14	0.00	0.00	0.15	0.00
Beliefs about CQI	4.37***	0.08	-0.03	0.07	-0.05	0.02	0.08	0.04	0.20+	0.12	0.38	-0.02	0.13	-0.03	-0.13	0.13	-0.24
Longer-term outcomes																	
Family engagement (staff-reported)	4.13***	0.10	-0.24*	0.11	-0.35	-0.11	0.12	-0.17	0.15	0.16	0.22	0.06	0.18	0.09	0.10	0.19	0.15

Source: T1, T3, and T4 Center Staff Survey

Note: *b* = unstandardized coefficient; *SE* = standard error, pooled across *m* = 10 imputations using Rubin's rules; *ES* = effect size. + *p* < .10, * *p* < .05, ** *p* < .01, *** *p* < .001.

Table F5. Moderation of change among BSC center staff by years of experience

Outcome	Intercept		T3			T4			Years Experience			T3* Years Experience			T4* Years Experience		
	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Mechanisms																	
Data use	2.33***	0.11	0.23+	0.13	0.22	0.25+	0.13	0.24	0.04	0.04	0.10	-0.05	0.05	-0.14	-0.04	0.05	-0.11
Intra-organizational learning	2.32***	0.11	0.33**	0.09	0.44	0.39**	0.11	0.51	-0.02	0.03	-0.08	0.00	0.03	0.01	-0.03	0.03	-0.10
Psychological safety	3.91***	0.10	-0.09	0.08	-0.13	-0.11	0.09	-0.16	-0.01	0.03	-0.05	0.06*	0.03	0.24	0.01	0.03	0.02
Short-term outcomes																	
Positive self-efficacy	3.99***	0.06	0.06	0.07	0.12	0.09	0.06	0.18	0.00	0.02	-0.02	0.03	0.02	0.15	-0.02	0.02	-0.10
Negative self-efficacy	2.30***	0.09	0.10	0.09	0.14	0.10	0.10	0.14	-0.01	0.03	-0.05	-0.02	0.03	-0.08	0.01	0.03	0.05
Leadership at all levels: Roles/responsibilities	3.83***	0.09	-0.20*	0.09	-0.29	-0.21*	0.08	-0.31	-0.02	0.03	-0.07	0.05+	0.03	0.20	0.01	0.03	0.04
Leadership at all levels: Teacher influence	2.50***	0.11	-0.02	0.14	-0.02	0.06	0.11	0.06	0.00	0.05	0.01	0.08+	0.04	0.21	0.00	0.04	-0.01
Socialization of new teachers	3.31***	0.14	-0.16	0.12	-0.18	-0.01	0.15	-0.01	0.04	0.05	0.12	-0.01	0.05	-0.02	-0.05	0.06	-0.14
Teacher collaboration	1.52***	0.12	-0.13	0.12	-0.17	-0.18	0.12	-0.23	-0.01	0.04	-0.04	-0.01	0.04	-0.02	-0.03	0.05	-0.12
Collective responsibility	2.75***	0.14	-0.18	0.13	-0.20	-0.12	0.14	-0.13	0.03	0.05	0.08	0.07	0.05	0.20	-0.03	0.06	-0.08
School commitment	3.97***	0.12	-0.09	0.10	-0.12	-0.05	0.11	-0.06	0.04	0.04	0.15	0.02	0.05	0.09	-0.05	0.04	-0.17
Teacher-teacher trust	3.80***	0.13	-0.23*	0.11	-0.26	-0.13	0.11	-0.16	0.02	0.05	0.07	0.00	0.04	0.01	-0.03	0.04	-0.08
Beliefs about SEL: Comfort	4.10***	0.09	0.10	0.08	0.16	0.13+	0.07	0.21	-0.01	0.03	-0.03	0.01	0.03	0.04	-0.01	0.03	-0.05
Beliefs about SEL: Culture	4.12***	0.11	-0.10	0.09	-0.16	-0.10	0.09	-0.16	-0.01	0.03	-0.05	0.02	0.04	0.09	0.00	0.04	0.01
Beliefs about CQI	4.44***	0.07	-0.03	0.07	-0.06	-0.02	0.07	-0.04	-0.01	0.02	-0.04	0.02	0.02	0.12	-0.02	0.03	-0.08

	Intercept		T3			T4			Years Experience			T3* Years Experience			T4* Years Experience		
Outcome	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Longer-term outcomes																	
SEL practices: # of SEL lessons	3.07***	0.40	-0.22	0.44	-0.10	0.26	0.52	0.12	0.34+	0.19	0.44	-0.16	0.18	-0.20	-0.13	0.18	-0.17
SEL practices: # times supported behavior regulation	10.71***	1.83	-0.02	1.81	0.00	-0.84	1.82	-0.08	-0.32	0.76	-0.08	0.80	0.81	0.21	0.92	0.76	0.24
SEL practices: # times supported prosocial behavior	8.87***	1.92	0.73	2.12	0.07	0.33	1.84	0.03	0.47	0.64	0.13	0.47	0.83	0.13	0.55	0.81	0.15
SEL practices: # times supported emotion understanding	10.89***	2.49	0.67	2.14	0.05	0.97	2.03	0.08	0.09	0.84	0.02	0.60	0.98	0.13	0.98	0.86	0.21
SEL practices: # times perceived challenging behavior	8.29***	1.58	-0.04	1.88	0.00	2.03	2.05	0.23	0.07	0.69	0.02	-0.05	0.88	-0.02	0.54	0.79	0.17
SEL practices: # times used negative tone	2.42***	0.50	-0.04	0.52	-0.01	-0.51	0.55	-0.17	0.09	0.22	0.08	-0.26	0.20	-0.24	-0.18	0.23	-0.17
SEL practices: # days with no challenging behavior	1.46***	0.31	0.15	0.39	0.09	-0.18	0.31	-0.11	0.14	0.12	0.22	-0.04	0.13	-0.06	-0.24+	0.14	-0.39
Perceived problems	0.22***	0.04	-0.02	0.05	-0.07	-0.05	0.05	-0.23	0.00	0.02	-0.04	0.00	0.02	-0.05	0.00	0.02	-0.02
Family engagement (staff-reported)	4.19***	0.08	-0.22*	0.09	-0.32	-0.08	0.09	-0.12	-0.03	0.03	-0.12	0.08*	0.03	0.32	0.05	0.03	0.20

Source: T1, T3, and T4 Center Staff Survey

Note: b = unstandardized coefficient; SE = standard error, pooled across m = 10 imputations using Rubin's rules; ES = effect size. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table F6. Moderation of change among BSC center staff by amount of paid planning time

	Intercept		T3			T4			Amount Planning			T3* Amount Planning			T4* Amount Planning		
Outcome	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Mechanisms																	
Data use	2.33***	0.11	0.23+	0.13	0.22	0.25+	0.13	0.24	-0.04	0.08	-0.06	0.05	0.08	0.08	-0.02	0.08	-0.02
Intra-organizational learning	2.33***	0.11	0.33**	0.09	0.44	0.39**	0.11	0.51	-0.04	0.07	-0.08	0.02	0.06	0.04	0.06	0.06	0.13
Psychological safety	3.91***	0.10	-0.09	0.08	-0.13	-0.11	0.08	-0.16	-0.08	0.07	-0.17	0.04	0.05	0.09	0.15*	0.05	0.34
Short-term outcomes																	
Positive self-efficacy	3.99***	0.06	0.06	0.07	0.12	0.09	0.06	0.18	-0.05	0.04	-0.15	0.00	0.04	0.00	0.04	0.04	0.12
Negative self-efficacy	2.30***	0.09	0.10	0.09	0.14	0.10	0.10	0.14	0.04	0.06	0.09	0.01	0.06	0.01	-0.05	0.06	-0.11
Leadership at all levels: Roles/responsibilities	3.83***	0.09	-0.20*	0.09	-0.29	-0.21*	0.08	-0.31	-0.07	0.06	-0.17	0.04	0.05	0.11	0.06	0.05	0.13
Leadership at all levels: Teacher influence	2.50***	0.11	-0.02	0.14	-0.02	0.06	0.12	0.06	0.04	0.08	0.06	0.02	0.08	0.03	-0.03	0.08	-0.05
Socialization of new teachers	3.29***	0.14	-0.15	0.12	-0.17	0.01	0.15	0.01	-0.09	0.10	-0.16	0.07	0.09	0.13	0.14	0.09	0.26
Teacher collaboration	1.55***	0.12	-0.12	0.12	-0.16	-0.16	0.12	-0.21	0.08	0.08	0.17	0.01	0.08	0.03	0.08	0.08	0.18
Collective responsibility	2.73***	0.13	-0.21	0.13	-0.23	-0.10	0.13	-0.11	-0.16+	0.09	-0.28	0.07	0.09	0.12	0.16	0.10	0.28
School commitment	3.94***	0.11	-0.10	0.09	-0.13	-0.03	0.11	-0.03	-0.21*	0.08	-0.45	0.13*	0.07	0.28	0.19*	0.07	0.39
Teacher-teacher trust	3.78***	0.11	-0.23*	0.10	-0.27	-0.12	0.11	-0.14	-0.20*	0.08	-0.38	0.04	0.08	0.07	0.16+	0.08	0.30
Beliefs about SEL: Comfort	4.11***	0.09	0.10	0.08	0.16	0.13+	0.07	0.21	0.05	0.06	0.13	-0.03	0.05	-0.08	0.00	0.05	0.01
Beliefs about SEL: Culture	4.12***	0.11	-0.11	0.09	-0.18	-0.10	0.09	-0.16	-0.09	0.08	-0.23	0.03	0.06	0.09	0.12+	0.07	0.32
Beliefs about CQI	4.44***	0.07	-0.03	0.07	-0.06	-0.02	0.07	-0.04	-0.03	0.04	-0.10	0.05	0.05	0.15	0.05	0.05	0.15

	Intercept		T3			T4			Amount Planning			T3* Amount Planning			T4* Amount Planning		
Outcome	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Longer-term outcomes																	
SEL practices: # of SEL lessons	2.95***	0.42	-0.11	0.44	-0.05	0.40	0.56	0.19	0.06	0.29	0.04	0.09	0.31	0.07	0.16	0.32	0.12
SEL practices: # times supported behavior regulation	10.95***	1.97	0.00	1.93	0.00	-1.21	2.01	-0.12	0.27	1.42	0.04	0.59	1.40	0.09	-0.12	1.48	-0.02
SEL practices: # times supported prosocial behavior	8.33***	2.13	0.78	2.17	0.08	0.24	1.99	0.02	-0.83	1.57	-0.13	0.44	1.39	0.07	0.18	1.49	0.03
SEL practices: # times supported emotion understanding	10.21***	2.73	0.70	2.33	0.05	0.79	2.25	0.06	-1.38	2.00	-0.17	0.54	1.62	0.07	0.33	1.64	0.04
SEL practices: # times perceived challenging behavior	8.54***	1.62	0.53	2.14	0.06	2.31	2.18	0.27	0.64	1.13	0.12	1.05	1.62	0.19	0.85	1.45	0.16
SEL practices: # times used negative tone	2.33***	0.54	0.28	0.58	0.09	-0.33	0.59	-0.11	-0.10	0.38	-0.06	0.41	0.39	0.22	0.19	0.39	0.10
SEL practices: # days with no challenging behavior	1.25***	0.33	0.31	0.41	0.18	0.12	0.35	0.07	-0.30	0.24	-0.28	0.29	0.24	0.27	0.41+	0.24	0.38
Perceived problems	0.22***	0.04	-0.02	0.05	-0.08	-0.06	0.05	-0.28	0.00	0.03	-0.01	-0.01	0.03	-0.06	-0.02	0.03	-0.16
Family engagement (staff-reported)	4.19***	0.08	-0.22*	0.09	-0.32	-0.08	0.09	-0.12	-0.02	0.06	-0.04	0.01	0.07	0.02	0.05	0.07	0.12
Center turnover	0.07***	0.02	-0.03	0.02	-0.51	0.01	0.03	0.08	0.01	0.01	0.16	0.00	0.01	-0.10	0.01	0.02	0.13

Source: T1, T3, and T4 Center Staff Survey

Note: b = unstandardized coefficient; SE = standard error, pooled across m = 10 imputations using Rubin's rules; ES = effect size. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table F7. Moderation of change among BSC center staff by extent of collaborative planning time

	Intercept		T3			T4			Collaborative Planning			T3* Collaborative Planning			T4* Collaborative Planning		
Outcome	<i>b</i>	SE	<i>b</i>	SE	ES	<i>b</i>	SE	ES	<i>b</i>	SE	ES	<i>b</i>	SE	ES	<i>b</i>	SE	ES
Mechanisms																	
Data use	2.33***	0.11	0.23+	0.13	0.22	0.25+	0.13	0.24	-0.07	0.12	-0.06	0.02	0.15	0.02	0.00	0.16	0.00
Intra-organizational learning	2.33***	0.10	0.33**	0.09	0.44	0.39**	0.11	0.51	0.13	0.12	0.16	-0.15	0.10	-0.19	-0.17+	0.10	-0.21
Psychological safety	3.91***	0.10	-0.09	0.08	-0.13	-0.11	0.09	-0.16	-0.07	0.12	-0.09	0.02	0.08	0.03	0.04	0.12	0.06
Short-term outcomes																	
Positive self-efficacy	4.00***	0.06	0.06	0.07	0.12	0.09	0.06	0.18	0.01	0.08	0.02	-0.04	0.06	-0.08	-0.03	0.07	-0.05
Negative self-efficacy	2.30***	0.09	0.10	0.09	0.14	0.10	0.10	0.14	0.07	0.11	0.10	-0.08	0.09	-0.11	0.12	0.13	0.16
Leadership at all levels: Roles /responsibilities	3.84***	0.09	-0.20*	0.09	-0.29	-0.21*	0.08	-0.31	-0.06	0.10	-0.08	0.07	0.09	0.10	-0.03	0.08	-0.04
Leadership at all levels: Teacher influence	2.50***	0.11	-0.02	0.14	-0.02	0.06	0.12	0.06	0.10	0.12	0.09	0.09	0.12	0.08	-0.06	0.13	-0.06
Socialization of new teachers	3.29***	0.14	-0.16	0.12	-0.18	0.01	0.15	0.21	0.03	0.17	0.03	0.03	0.13	0.04	-0.03	0.16	-0.03
Teacher collaboration	1.52***	0.12	-0.12	0.12	-0.16	-0.16	0.12	-0.21	0.14	0.14	0.18	-0.07	0.11	-0.09	-0.09	0.11	-0.11
Collective responsibility	2.74***	0.14	-0.22	0.13	-0.24	-0.11	0.13	-0.12	-0.07	0.15	-0.08	0.11	0.13	0.12	0.04	0.16	0.04
School commitment	3.96***	0.12	-0.11	0.10	-0.14	-0.04	0.11	-0.05	-0.17	0.15	-0.21	0.06	0.09	0.08	0.12	0.11	0.15
Teacher-teacher trust	3.80***	0.12	-0.23*	0.11	-0.27	-0.13	0.11	-0.15	0.11	0.16	0.12	0.04	0.12	0.05	0.06	0.17	0.07
Beliefs about SEL: Comfort	4.10***	0.08	0.10	0.08	0.16	0.13+	0.07	0.21	0.24*	0.09	0.37	-0.10	0.07	-0.16	-0.15*	0.07	-0.23
Beliefs about SEL: Culture	4.13***	0.11	-0.11	0.09	-0.18	-0.10	0.09	-0.16	-0.08	0.13	-0.13	0.05	0.10	0.07	0.03	0.11	0.05
Beliefs about CQI	4.44***	0.06	-0.03	0.07	-0.06	-0.02	0.07	-0.04	0.11	0.07	0.19	0.00	0.06	0.00	0.00	0.07	-0.01

	Intercept		T3			T4			Collaborative Planning			T3* Collaborative Planning			T4* Collaborative Planning		
Outcome	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Longer-term outcomes																	
SEL practices: # of SEL lessons	2.96***	0.40	-0.17	0.43	-0.08	0.28	0.51	0.13	0.45	0.53	0.20	-0.26	0.52	-0.11	-0.32	0.62	-0.14
SEL practices: # times supported behavior regulation	10.68***	1.73	-0.53	1.74	-0.05	-1.34	1.88	-0.13	-1.77	2.15	-0.16	-1.72	2.37	-0.16	-1.07	2.34	-0.10
SEL practices: # times supported prosocial behavior	8.78***	1.96	0.25	2.00	0.03	-0.15	1.83	-0.02	-0.02	2.59	0.00	-2.57	2.55	-0.25	-1.86	2.95	-0.18
SEL practices: # times supported emotion understanding	10.74***	2.39	0.16	2.10	0.01	0.29	2.06	0.02	-1.72	2.89	-0.13	-2.47	2.58	-0.18	-2.65	2.73	-0.20
SEL practices: # times perceived challenging behavior	8.20***	1.52	-0.15	1.92	-0.02	1.47	1.94	0.17	-0.94	2.04	-0.10	-0.81	2.41	-0.09	-2.65	2.99	-0.29
SEL practices: # times used negative tone	2.40***	0.50	0.06	0.52	0.02	-0.47	0.55	-0.16	0.06	0.62	0.02	-0.13	0.59	-0.04	-0.25	0.64	-0.08
SEL practices: # days with no challenging behavior	1.42***	0.29	0.17	0.39	0.10	-0.09	0.33	-0.05	0.40	0.53	0.22	-0.12	0.51	-0.07	-0.24	0.56	-0.14
Perceived problems	0.23***	0.04	-0.02	0.05	-0.09	-0.06	0.04	-0.24	0.03	0.06	0.14	-0.04	0.05	-0.18	-0.01	0.05	-0.03
Family engagement (staff-reported)	4.19***	0.08	-0.22*	0.09	-0.32	-0.08	0.09	-0.12	-0.15+	0.09	-0.22	0.11	0.10	0.16	0.15	0.10	0.21
Center turnover	0.07***	0.02	-0.03	0.02	-0.51	0.00	0.03	0.05	-0.01	0.02	-0.15	0.01	0.02	0.17	0.01	0.02	0.10

Source: T1, T3, and T4 Center Staff Survey

Note: b = unstandardized coefficient; SE = standard error, pooled across m = 10 imputations using Rubin's rules; ES = effect size. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table F8. Moderation of change among BSC center staff by center size

Outcome	Intercept		T3			T4			Center Size			T3* Center Size			T4* Center Size		
	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Mechanisms																	
Data use	2.33***	0.11	0.23	0.13	0.22	0.25+	0.13	0.24	0.01	0.01	0.13	0.00	0.01	0.05	0.00	0.01	0.01
Intra-organizational learning	2.35***	0.10	0.33**	0.09	0.44	0.39**	0.11	0.51	0.01	0.01	0.14	0.00	0.01	0.04	0.01	0.01	0.16
Psychological safety	3.91***	0.10	-0.09	0.08	-0.13	-0.11	0.09	-0.16	0.00	0.01	-0.08	0.01	0.00	0.12	0.01+	0.01	0.17
Short-term outcomes																	
Positive self-efficacy	4.00***	0.06	0.06	0.07	0.12	0.09	0.06	0.18	0.00	0.00	0.07	0.00	0.00	0.05	0.00	0.00	0.11
Negative self-efficacy	2.29***	0.09	0.10	0.09	0.14	0.10	0.10	0.14	-0.01	0.01	-0.11	0.01	0.01	0.13	-0.01	0.01	-0.12
Leadership at all levels: Roles/responsibilities	3.84***	0.09	-0.20*	0.09	-0.29	-0.21*	0.08	-0.31	0.00	0.01	0.08	0.00	0.00	0.01	0.00	0.00	0.08
Leadership at all levels: Teacher influence	2.50***	0.11	-0.02	0.14	-0.02	0.06	0.12	0.06	0.00	0.01	0.05	0.00	0.01	0.02	0.00	0.01	0.04
Socialization of new teachers	3.30***	0.14	-0.15	0.12	-0.17	0.00	0.15	0.00	0.00	0.01	0.03	0.00	0.01	-0.03	0.01	0.01	0.14
Teacher collaboration	1.56***	0.09	-0.14	0.12	-0.18	-0.18	0.11	-0.23	0.01	0.01	0.15	0.02*	0.01	0.28	0.02**	0.01	0.31
Collective responsibility	2.75***	0.14	-0.22+	0.13	-0.24	-0.11	0.13	-0.13	-0.01	0.01	-0.11	0.01	0.01	0.18	0.02	0.01	0.22
School commitment	3.95***	0.12	-0.11	0.10	-0.15	-0.04	0.11	-0.05	-0.01	0.01	-0.16	0.01	0.01	0.14	0.01+	0.01	0.18
Teacher-teacher trust	3.80***	0.12	-0.23*	0.10	-0.27	-0.13	0.11	-0.15	-0.01	0.01	-0.10	0.00	0.01	0.05	0.01	0.01	0.17
Beliefs about SEL: Comfort	4.11***	0.09	0.10	0.08	0.16	0.13+	0.07	0.21	0.01	0.01	0.11	0.00	0.00	-0.06	0.00	0.00	0.05
Beliefs about SEL: Culture	4.14***	0.11	-0.11	0.09	-0.18	-0.11	0.09	-0.17	0.00	0.01	0.05	0.00	0.01	0.03	0.01+	0.01	0.19
Beliefs about CQI	4.44***	0.07	-0.03	0.07	-0.06	-0.02	0.07	-0.04	0.00	0.00	-0.01	0.01	0.00	0.13	0.01	0.00	0.13
Longer-term outcomes																	
SEL practices: # of SEL lessons	2.91***	0.41	-0.06	0.44	-0.03	0.39	0.54	0.18	-0.01	0.03	-0.03	0.03	0.03	0.17	0.02	0.03	0.13
SEL practices: # times supported behavior regulation	11.01***	1.83	0.48	1.83	0.05	-0.60	2.03	-0.06	0.05	0.15	0.07	0.23	0.15	0.29	0.17	0.16	0.21
SEL practices: # times supported prosocial behavior	8.52***	2.08	1.40	2.06	0.14	0.70	1.84	0.07	-0.07	0.15	-0.09	0.25*	0.13	0.33	0.17	0.13	0.22
SEL practices: # times supported emotion understanding	10.90***	2.61	1.26	2.15	0.10	1.50	2.09	0.12	-0.01	0.20	-0.01	0.24	0.16	0.25	0.26+	0.15	0.27

Outcome	Intercept		T3			T4			Center Size			T3* Center Size			T4* Center Size		
	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
SEL practices: # times perceived challenging behavior	8.28***	1.52	0.43	1.97	0.05	2.90	2.02	0.33	0.02	0.10	0.03	0.13	0.14	0.19	0.31*	0.14	0.46
SEL practices: # times used negative tone	2.30***	0.52	0.11	0.54	0.04	-0.36	0.55	-0.12	-0.02	0.04	-0.10	0.01	0.04	0.06	0.02	0.03	0.10
SEL practices: # days with no challenging behavior	1.37***	0.32	0.18	0.40	0.11	-0.03	0.33	-0.02	-0.01	0.02	-0.06	0.01	0.02	0.05	0.02	0.02	0.13
Perceived problems	0.22***	0.04	-0.01	0.05	-0.06	-0.05	0.05	-0.24	0.00	0.00	-0.12	0.00	0.00	0.00	0.00	0.00	-0.04
Family engagement (staff-reported)	4.19***	0.08	-0.22*	0.09	-0.32	-0.08	0.09	-0.12	0.00	0.01	0.01	0.01	0.01	0.18	0.01	0.01	0.15
Center turnover	0.07***	0.02	-0.03	0.02	-0.41	0.00	0.03	0.01	0.00	0.00	0.01	0.00	0.00	0.21	0.00	0.00	-0.13

Source: T1, T3, and T4 Center Staff Survey

Note: b = unstandardized coefficient; SE = standard error, pooled across m = 10 imputations using Rubin's rules; ES = effect size. + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table F9. Moderation of change among BSC center staff by baseline turnover

Outcome	Intercept		T3			T4			Baseline Turnover			T3* Baseline Turnover			T4* Baseline Turnover		
	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Mechanisms																	
Data use	2.33***	0.11	0.23+	0.13	0.22	0.25+	0.13	0.24	0.89	1.93	0.06	-0.38	2.48	-0.02	-1.24	2.36	-0.08
Intra-organizational learning	2.33***	0.10	0.33**	0.09	0.44	0.39**	0.11	0.51	-1.86	1.58	-0.16	-1.86	1.36	-0.16	-0.20	1.66	-0.02
Psychological safety	3.91***	0.09	-0.09	0.08	-0.13	-0.11	0.09	-0.16	-1.94	1.54	-0.18	-1.50	1.29	-0.14	0.60	1.36	0.06
Short-term outcomes																	
Positive self-efficacy	3.99***	0.06	0.06	0.07	0.12	0.09	0.06	0.18	-0.89	1.03	-0.12	0.28	0.92	0.04	0.96	0.93	0.13
Negative self-efficacy	2.30***	0.09	0.10	0.09	0.14	0.10	0.10	0.14	2.03	1.52	0.18	-0.56	1.68	-0.05	-1.56	1.83	-0.14
Leadership at all levels: Roles/responsibilities	3.84***	0.08	-0.20*	0.09	-0.29	-0.21*	0.08	-0.31	-2.47+	1.40	-0.23	0.63	1.34	0.06	0.55	1.43	0.05
Leadership at all levels: Teacher influence	2.50***	0.11	-0.02	0.14	-0.02	0.06	0.12	0.06	0.44	1.87	0.03	-3.24+	1.88	-0.20	-1.33	2.30	-0.08
Socialization of new teachers	3.28***	0.13	-0.17	0.12	-0.19	0.01	0.14	0.01	-3.17	2.13	-0.23	-2.74	2.26	-0.20	0.25	2.65	0.02
Teacher collaboration	1.53***	0.12	-0.13	0.12	-0.17	-0.16	0.12	-0.21	-1.49	2.16	-0.13	-1.64	1.82	-0.14	0.72	1.98	0.06
Collective responsibility	2.72***	0.13	-0.24+	0.13	-0.26	-0.10	0.13	-0.11	-2.46	2.19	-0.17	-4.69+	2.47	-0.33	0.32	3.15	0.02
School commitment	3.94***	0.12	-0.11	0.10	-0.15	-0.03	0.12	-0.04	-1.32	2.04	-0.11	-1.08	1.72	-0.09	-0.45	1.81	-0.04
Teacher-teacher trust	3.77***	0.11	-0.25*	0.10	-0.29	-0.13	0.11	-0.15	-2.82	2.02	-0.21	-3.38+	1.88	-0.25	-0.93	1.95	-0.07
Beliefs about SEL: Comfort	4.10***	0.09	0.10	0.08	0.16	0.13+	0.07	0.21	-2.37	1.55	-0.25	-0.09	1.17	-0.01	0.94	1.13	0.10
Beliefs about SEL: Culture	4.11***	0.10	-0.12	0.09	-0.20	-0.10	0.09	-0.16	-2.52	1.73	-0.26	-2.31	1.54	-0.24	-0.26	1.57	-0.03
Beliefs about CQI	4.44***	0.07	-0.03	0.07	-0.06	-0.02	0.07	-0.04	-0.19	1.04	-0.02	-1.10	1.05	-0.13	-0.10	0.97	-0.01

Outcome	Intercept		T3			T4			Baseline Turnover			T3* Baseline Turnover			T4* Baseline Turnover		
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>
Longer-term outcomes																	
SEL practices: # of SEL lessons	2.89***	0.38	-0.15	0.43	-0.07	0.33	0.53	0.15	-10.42+	5.46	-0.31	1.48	5.68	0.04	3.91	6.66	0.12
SEL practices: # times supported behavior regulation	10.79***	1.82	-0.31	1.74	-0.03	-1.13	1.86	-0.11	-8.05	27.46	-0.05	1.05	25.74	0.01	10.50	26.75	0.07
SEL practices: # times supported prosocial behavior	8.47***	1.88	0.58	2.01	0.06	0.21	1.81	0.02	-51.63+	28.81	-0.34	9.80	28.56	0.06	26.52	27.82	0.17
SEL practices: # times supported emotion understanding	10.79***	2.52	0.43	2.05	0.03	0.72	2.01	0.06	-26.18	38.48	-0.13	-0.50	30.50	0.00	35.06	30.28	0.18
SEL practices: # times perceived challenging behavior	8.23***	1.58	-0.04	1.88	0.00	1.91	2.04	0.22	-5.38	23.30	-0.04	-8.24	26.07	-0.06	18.98	31.67	0.14
SEL practices: # times used negative tone	2.37***	0.49	0.05	0.51	0.02	-0.42	0.55	-0.14	-4.55	7.43	-0.10	-1.79	7.12	-0.04	4.98	7.72	0.11
Perceived problems	0.23***	0.04	-0.02	0.05		-0.05	0.05		0.50	0.58	0.14	-0.18	0.59	-0.05	-0.45	0.61	-0.13
Family engagement (staff-reported)	4.19***	0.08	-0.22*	0.09	-0.07	-0.08	0.09	-0.24	0.44	1.33	0.04	-4.17**	1.38	-0.41	-1.15	1.44	-0.11

Source: T1, T3, and T4 Center Staff Survey

Note: *b* = unstandardized coefficient; *SE* = standard error, pooled across *m* = 10 imputations using Rubin's rules; *ES* = effect size. + *p* < .10, * *p* < .05, ** *p* < .01, *** *p* < .001.

Table F10. Changes over time in mechanisms, short-term outcomes, and long-term outcomes by BSC status (BSC or non-BSC center staff)

Outcome	Intercept		T3			T4			BSC Team			T3* BSC Team			T4* BSC Team		
	b	SE	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES	b	SE	ES
Mechanisms																	
Data use	2.41***	0.08	0.05	0.12	0.04	0.00	0.10	0.00	-0.09	0.15	-0.08	0.18	0.17	0.16	0.25+	0.15	0.22
Intra-organizational learning	2.63***	0.06	0.01	0.09	0.02	0.14*	0.07	0.17	-0.29**	0.10	-0.37	0.32*	0.12	0.40	0.25*	0.11	0.32
Psychological safety	3.71***	0.07	-0.09	0.06	-0.13	-0.10	0.07	-0.14	0.21*	0.09	0.29	0.00	0.10	0.00	-0.02	0.10	-0.02
Short-term outcomes																	
Positive self-efficacy	4.00***	0.04	-0.09+	0.05	-0.17	-0.04	0.05	-0.07	0.01	0.07	0.02	0.15	0.10	0.28	0.13	0.08	0.24
Negative self-efficacy	2.49***	0.07	-0.04	0.06	-0.05	0.00	0.08	-0.01	-0.20+	0.11	-0.25	0.14	0.10	0.17	0.11	0.11	0.13
Leadership at all levels: Roles/responsibilities	3.33***	0.06	-0.11*	0.05	-0.15	-0.11	0.08	-0.15	0.50***	0.09	0.69	-0.09	0.10	-0.12	-0.10	0.10	-0.14
Leadership at all levels: Teacher influence	2.54***	0.10	-0.09	0.10	-0.09	0.00	0.08	0.00	-0.04	0.15	-0.04	0.07	0.15	0.07	0.06	0.13	0.06
Socialization of new teachers	3.25***	0.11	-0.04	0.09	-0.04	0.04	0.09	0.05	0.04	0.17	0.04	-0.12	0.14	-0.12	-0.04	0.17	-0.04
Teacher collaboration	1.49***	0.07	-0.01	0.08	-0.01	-0.11	0.09	-0.14	0.07	0.13	0.09	-0.12	0.13	-0.15	-0.05	0.12	-0.07
Collective responsibility	2.84***	0.09	-0.20*	0.08	-0.20	-0.23**	0.08	-0.24	-0.12	0.14	-0.12	-0.01	0.16	-0.02	0.13	0.15	0.14
School commitment	3.98***	0.07	-0.15*	0.06	-0.18	-0.13	0.08	-0.15	-0.05	0.13	-0.07	0.05	0.11	0.06	0.10	0.12	0.12
Teacher-teacher trust	3.81***	0.08	-0.15+	0.08	-0.18	-0.12+	0.07	-0.15	-0.02	0.12	-0.02	-0.08	0.11	-0.10	0.00	0.12	0.00
Beliefs about SEL: Comfort	4.10***	0.07	0.04	0.06	0.06	0.04	0.06	0.05	0.01	0.10	0.02	0.06	0.09	0.08	0.09	0.09	0.13
Beliefs about SEL: Culture	4.10***	0.07	-0.20**	0.06	-0.29	-0.15**	0.05	-0.22	0.01	0.10	0.01	0.09	0.11	0.13	0.05	0.10	0.08
Beliefs about CQI	4.18***	0.07	-0.10	0.06	-0.16	-0.04	0.06	-0.07	0.26*	0.10	0.41	0.07	0.08	0.11	0.02	0.08	0.03
Longer-term outcomes																	
SEL practices: # of SEL lessons	2.62***	0.20	-0.34	0.26	-0.15	0.11	0.26	0.05	0.31	0.42	0.14	0.18	0.45	0.08	0.21	0.51	0.09
SEL practices: # times supported behavior regulation	9.68***	0.92	-1.21	0.91	-0.11	-1.58+	0.92	-0.15	1.32	1.90	0.12	0.89	1.65	0.08	0.41	1.75	0.04

Outcome	Intercept		T3			T4			BSC Team			T3* BSC Team			T4* BSC Team		
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>	<i>b</i>	<i>SE</i>	<i>ES</i>
SEL practices: # times supported prosocial behavior	8.64***	0.88	-0.94	0.91	-0.09	-0.92	0.86	-0.09	-0.17	1.84	-0.02	1.49	1.83	0.15	1.05	1.53	0.10
SEL practices: # times supported emotion understanding	9.56***	1.03	-0.78	0.91	-0.07	-0.42	0.79	-0.04	1.40	2.20	0.12	1.21	1.95	0.10	1.03	1.87	0.09
SEL practices: # times perceived challenging behavior	7.14***	0.84	0.20	0.93	0.02	1.86	1.24	0.21	1.18	1.75	0.13	-0.21	1.92	-0.02	0.00	1.98	0.00
SEL practices: # times used negative tone	2.22***	0.26	-0.17	0.24	-0.06	-0.36	0.26	-0.13	0.18	0.52	0.06	0.23	0.55	0.08	-0.07	0.58	-0.03
SEL practices: # days with no challenging behavior	1.28***	0.14	0.11	0.16	0.07	-0.05	0.17	-0.03	0.13	0.31	0.07	0.05	0.37	0.03	-0.04	0.38	-0.02
Perceived problems	0.36***	0.03	-0.02	0.03	-0.05	-0.06	0.03	-0.16	-0.13*	0.06	-0.36	0.00	0.06	0.01	0.00	0.05	0.01
Family engagement (staff-reported)	4.27***	0.06	-0.18**	0.06	-0.26	-0.11+	0.06	-0.16	-0.09	0.10	-0.13	-0.04	0.10	-0.06	0.03	0.10	0.05

Source: T1, T3, and T4 Center Staff Survey

Note: *b* = unstandardized coefficient; *SE* = standard error, pooled across *m* = 10 imputations using Rubin's rules; *ES* = effect size. + *p* < .10, * *p* < .05, ** *p* < .01, *** *p* < .001.

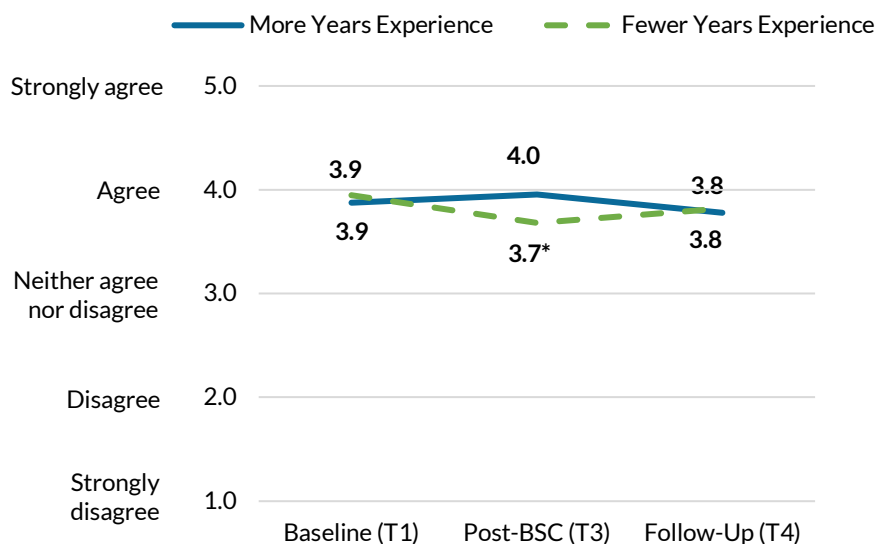
Appendix G. Descriptions of Additional Significant Interactions (Moderation)

As noted in the main report, analyses related to answering RQ2 involved examining the extent to which activation of mechanisms of change (as noted in the CCL Theory of Change) differed by centers' BSC participation, individual-level characteristics (i.e., role and years of experience in the early childhood field) other center-level factors (e.g., paid planning time, center size, turnover). Among these potential moderators, we found that centers' BSC participation and an individual's role within the ECE center were statistically and meaningfully associated with several indicators of mechanisms of change. Some additional moderating factors were statistically related to mechanisms, but the pattern of findings was not consistent and was not clear to interpret. Similarly, there were some significant moderating effects related to short- and longer-term outcomes (i.e., RQ3 and RQ4) that did not lend themselves to clear interpretation. This appendix shares these additional, significant moderation findings, by outcomes of interest (i.e., mechanisms, and short- and longer-term outcomes).

Psychological safety

Two significant interactions were observed: years of experience and hours of paid planning time both moderated changes in psychological safety over time. Specifically, BSC team members with more years of experience in the early childhood field showed relatively stable psychological safety from baseline (T1) to post-BSC (T3), whereas those with fewer years of experience showed a decrease from baseline to post-BSC. In addition, BSC team members in centers with more hours of paid planning time showed more stable psychological safety from baseline (T1) to follow-up (T4), whereas those in centers with fewer hours of paid planning time showed a decreasing pattern over time.

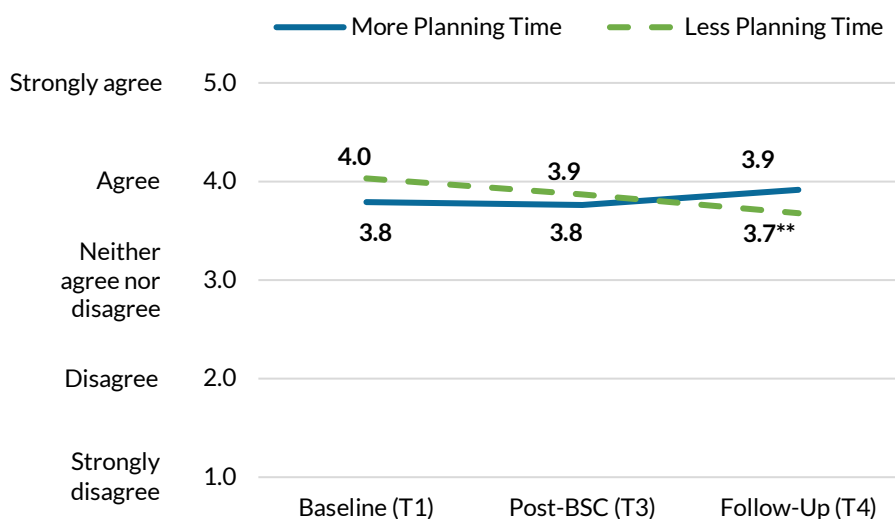
Figure G1. Changes in psychological safety among BSC center staff varied by years of experience ($n = 88$ BSC center staff)



Source: T1, T3, and T4 Center Staff Survey

Note: * $p < .05$ change from T1. Because years of experience was a continuous variable, the figure shows estimated changes over time for those with more (1 standard deviation above the mean) and fewer (1 standard deviation below the mean) years of experience.

Figure G2. Changes in psychological safety among BSC center staff varied by hours of planning time ($n = 88$ BSC center staff)



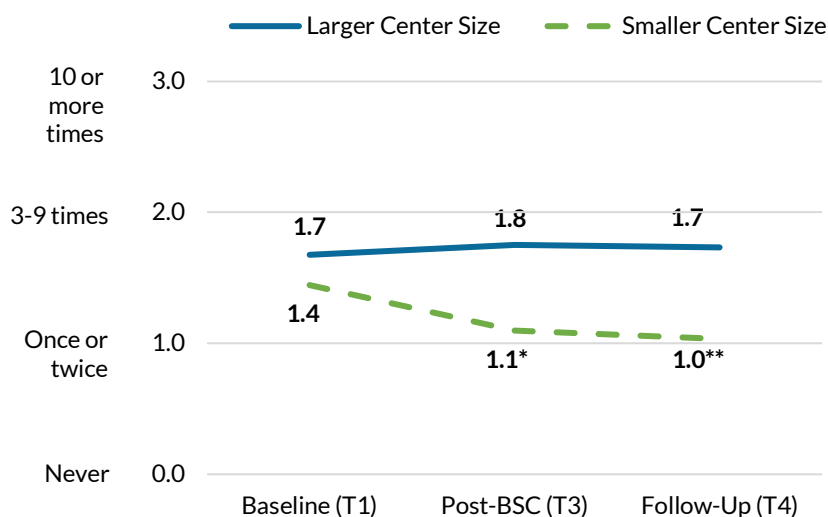
Source: T1, T3, and T4 Center Staff Survey

Note: ** $p < .01$ change from T1. Because hours of paid planning time was a continuous variable, the figure shows estimated changes over time for those with more (1 standard deviation above the mean) and less (1 standard deviation below the mean) paid planning time.

Organizational climate

Certain center-level characteristics predicted the rate of change in organizational climate outcomes. Specifically, changes in teacher collaboration significantly varied by center size, with BSC team members in larger centers reporting stable levels of teacher collaboration from baseline (T1) to post-BSC (T3) and follow-up (T4), and those in smaller centers showing decreases over time (Figure G3). Similarly, changes in center commitment significantly varied by amount of paid planning time. BSC team members in centers with more paid planning hours at baseline showed relatively stable levels of center commitment from baseline (T1) to post-BSC (T3) and follow-up (T4), and those in centers with fewer paid planning hours at baseline started higher but showed decreases in center commitment over time (Figure G4).

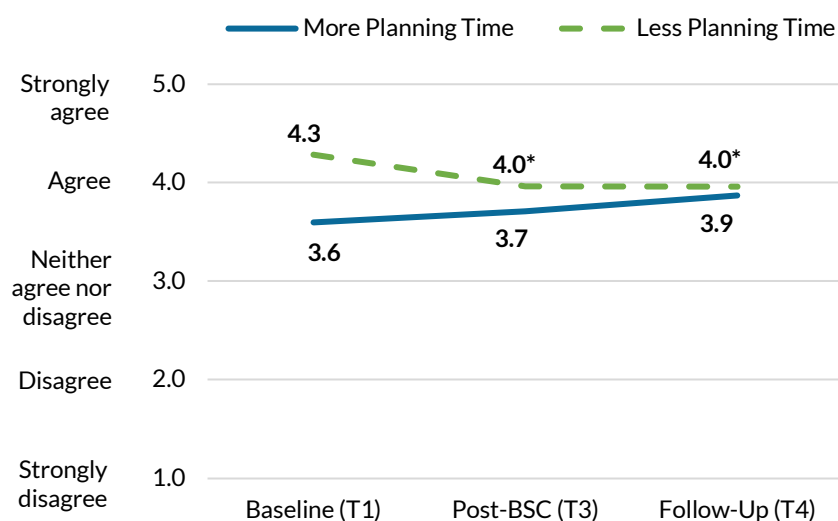
Figure G3. Changes in teacher collaboration among BSC teachers and other staff varied by center size ($n = 58$ BSC teachers and other staff)



Source: T1, T3, and T4 Center Staff Survey

Note: * $p < .05$, ** $p < .01$ change from T1. Only teachers and other staff (not administrators or parents) reported on teacher collaboration. Because center size was a continuous variable, the figure shows estimated changes over time for those in centers of larger (1 standard deviation above the mean) and smaller (1 standard deviation below the mean) size.

Figure G4. Changes in center commitment among BSC teachers and other staff varied by hours of paid planning time ($n = 58$ BSC teachers and other staff)



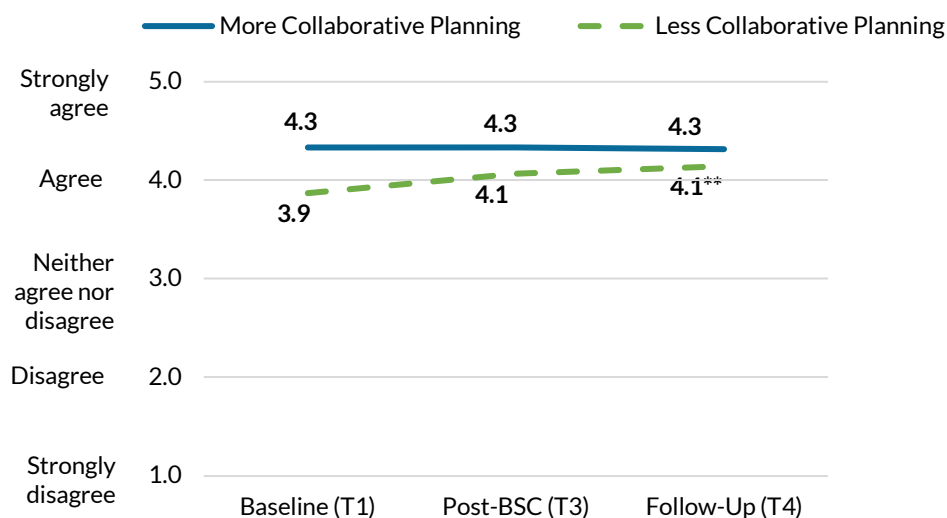
Source: T1, T3, and T4 Center Staff Survey

Note: * $p < .05$ change from T1. Only teachers and other staff (not administrators or parents) reported on center commitment. Because hours of paid planning time was a continuous variable, the figure shows estimated changes over time for those with more (1 standard deviation above the mean) and less (1 standard deviation below the mean) paid planning time.

Attitudes and beliefs about SEL

BSC team members in centers with less collaborative planning time at baseline reported greater growth in comfort with SEL comfort from baseline (T1) to follow-up (T4) compared to participants with more collaborative planning time (see Figure G5), suggesting the BSC may have been especially valuable for staff who had fewer prior opportunities for collaborative professional reflection and peer learning at baseline. There were no other significant or marginal quantitative changes in attitudes and beliefs toward SEL and CQI, and change did not significantly vary by centers' BSC participation or other center or individual-level characteristics.

Figure G5. Changes in comfort with social and emotional learning among BSC center staff varied by the extent to which planning time is collaborative ($n = 88$ BSC center staff)



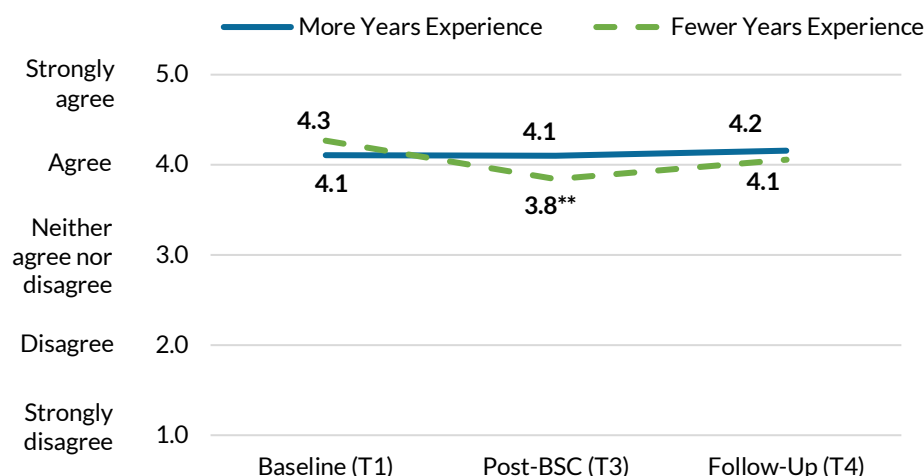
Source: T1, T3, and T4 Center Staff Survey

Note: ** $p < .01$ change from T1. Because collaborative planning was a continuous variable, the figure shows estimated changes over time for those with more (1 standard deviation above the mean) and less (1 standard deviation below the mean) collaborative planning.

Family engagement

The decrease in family engagement as reported by staff from baseline (T1) to post-BSC (T3) was most evident among those with fewer years of experience (Figure G6) and among those in centers with greater baseline turnover (Figure G7).

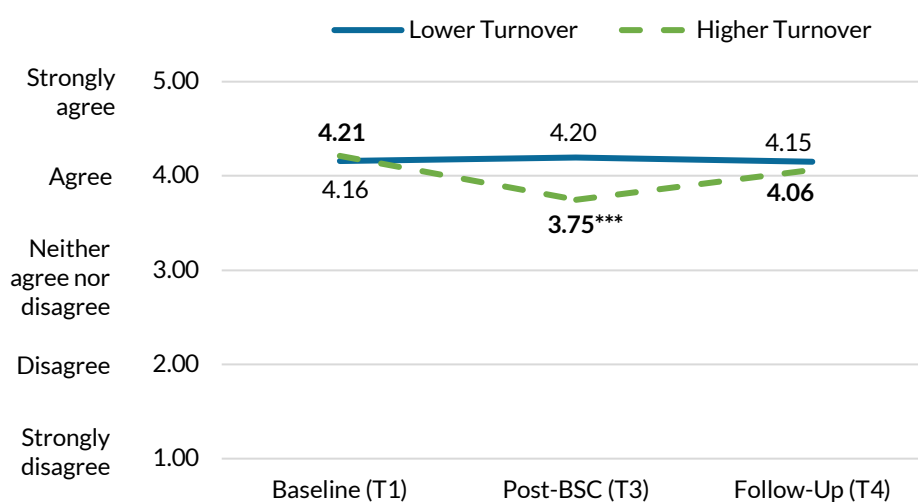
Figure G6. Changes in family engagement as reported by BSC center staff varied by years of experience ($n = 88$ BSC center staff)



Source: T1, T3, and T4 Center Staff Survey

Note: ** $p < .01$ change from T1. Because years of experience was a continuous variable, the figure shows estimated changes over time for those with more (1 standard deviation above the mean) and fewer (1 standard deviation below the mean) years of experience.

Figure G7. Changes in family engagement as reported by BSC center staff varied by baseline turnover rate ($n = 88$ BSC center staff)



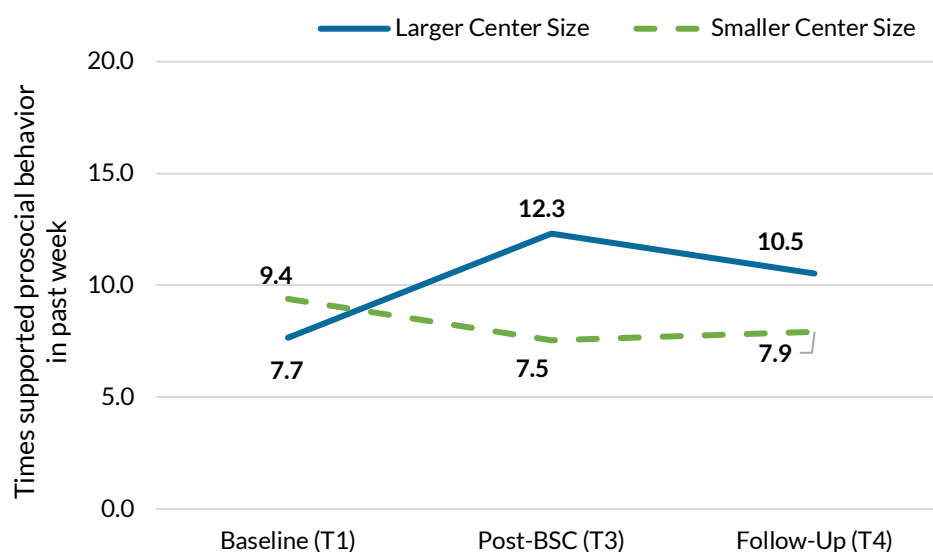
Source: T1, T3, and T4 Center Staff Survey

Note: *** $p < .001$ change from T1. Because turnover was a continuous variable, the figure shows estimated changes over time for those with higher (1 standard deviation above the mean) and lower (1 standard deviation below the mean) turnover.

SEL classroom practices and environments

BSC teachers in larger centers significantly differed from BSC teachers in smaller centers in the pattern of change in supporting children's prosocial behavior, with BSC teachers in larger centers showing an increasing pattern from baseline (T1) to post-BSC (T3), and BSC teachers in smaller centers showing a decreasing pattern. However, the amount of change from baseline to post-BSC was not statistically significant for either group of teachers (Figure G8). BSC teachers in larger centers also showed greater increases in times they perceived challenging behaviors from baseline (T1) to follow-up (T4), whereas this did not significantly change over time among teachers in smaller centers (Figure G9).

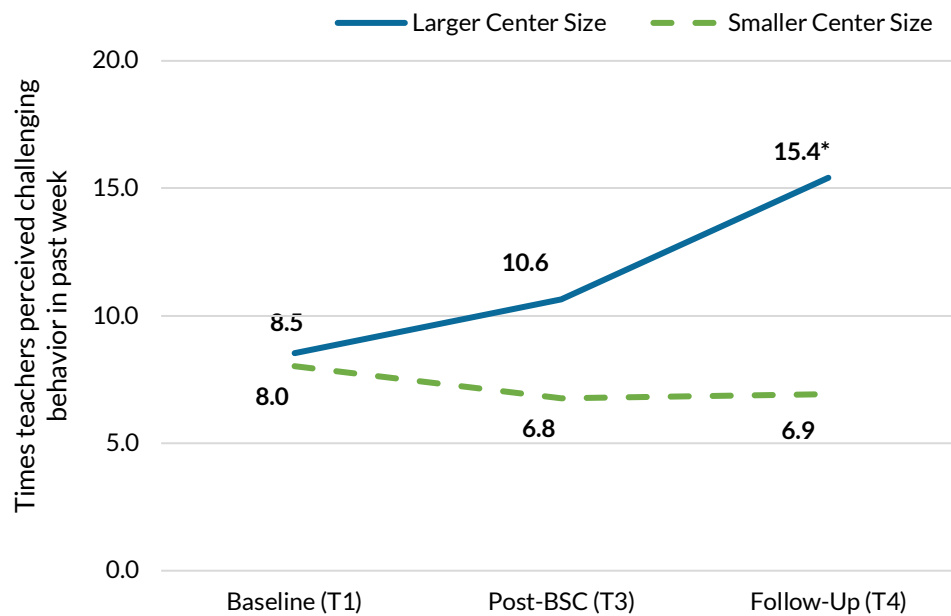
Figure G8. Changes in times teachers supported prosocial behavior in past week varied by center size ($n = 40$ BSC teachers)



Source: T1, T3, and T4 Center Staff Survey

Note: Times teachers supported prosocial behavior only reported by teachers (not administrators, other staff, or parents). Because center size was a continuous variable, the figure shows estimated changes over time for those in centers of larger (1 standard deviation above the mean) and smaller (1 standard deviation below the mean) size.

Figure G9. Changes in times teachers perceived challenging behavior in past week varied by center size ($n = 40$ BSC teachers)



Source: T1, T3, and T4 Center Staff Survey

Note: * $p < .05$ change from T1. Times teachers perceived challenging behavior only reported by teachers (not administrators, other staff, or parents). Because center size was a continuous variable, the figure shows estimated changes over time for those in centers of larger (1 standard deviation above the mean) and smaller (1 standard deviation below the mean) size.

References

- ¹ Davis Schoch, A., Simons Gerson, C., Halle, T., & Bredeson, M. (2023). Children's learning and development benefits from high-quality early care and education: A summary of the evidence. OPRE Report #2023-226. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://acf.gov/opre/report/childrens-learning-and-development-benefits-high-quality-early-care-and-education>
- ² Douglass, A., Tout, K., & Doyle, S. (2021). Considerations for incorporating the Breakthrough Series Collaborative (BSC) as a quality improvement methodology in early childhood systems. OPRE Report # 2021-211. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://files.eric.ed.gov/fulltext/ED640043.pdf>
- ³ Taylor, M. J., McNicholas, C., Nicolay, C., Darzi, A., Bell, D., & Reed, J. E. (2014). Systematic review of the application of the plan-do-study-act method to improve quality in healthcare. *BMJ quality & safety*, 23(4), 290-298.
- ⁴ Daily, S., Tout, K., Douglass, A., Miranda, B., Halle, T., Agosti, J., Partika, A., & Doyle, S. (2018). Culture of Continuous Learning project: A literature review of the Breakthrough Series Collaborative (BSC). OPRE Report #2018-28. Administration for Children & Families. <https://acf.gov/opre/report/culture-continuous-learning-project-literature-review-breakthrough-series-collaborative>
- ⁵ Douglass, A., Halle, T., & Tout, K. (2019). The Culture of Continuous Learning Project: A Breakthrough Series Collaborative for Improving Child Care and Head Start Quality: Theory of Change, OPRE Report #2019-100, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://acf.gov/opre/report/culture-continuous-learning-project-theory-change>
- ⁶ Davis Schoch, A., Simons Gerson, C., Halle, T., & Bredeson, M. (2023). Children's learning and development benefits from high-quality early care and education: A summary of the evidence. OPRE Report #2023-226. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://acf.gov/opre/report/childrens-learning-and-development-benefits-high-quality-early-care-and-education>
- ⁷ Douglass, A., Tout, K., & Doyle, S. (2021). Considerations for Incorporating the Breakthrough Series Collaborative (BSC) as a Quality Improvement Methodology in Early Childhood Systems. OPRE Report # 2021-211. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://files.eric.ed.gov/fulltext/ED640043.pdf>
- ⁸ Daily, S., Tout, K., Douglass, A., Miranda, B., Halle, T., Agosti, J., Partika, A., & Doyle, S. (2018). Culture of Continuous Learning project: A literature review of the Breakthrough Series Collaborative (BSC). OPRE Report 2018-28. Administration for Children & Families. https://acf.gov/sites/default/files/documents/opre/ccl_literature_review_03082018_508_compliance_508.pdf
- ⁹ Halle, T., Cleveland, J., Bamdad, T., Nagle, K., Tout, K., Douglass, A., Agosti, J., & Doyle, S. (2021). Promoting a Culture of Continuous Learning in Early Care and Education Settings. OPRE Report # 2021208. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://files.eric.ed.gov/fulltext/ED616411.pdf>

-
- ¹⁰ Hemmeter, M. L., Snyder, P. A., Fox, L., & Algina, J. (2016). Evaluating the implementation of the Pyramid Model for promoting social-emotional competence in early childhood classrooms. *Topics in Early Childhood Special Education*, 36(3), 133-146. <https://doi.org/10.1177/0271121416653386>
- ¹¹ Taylor, M. J., McNicholas, C., Nicolay, C., Darzi, A., Bell, D., & Reed, J. E. (2014). Systematic review of the application of the plan-do-study-act method to improve quality in healthcare. *BMJ quality & safety*, 23(4), 290-298. doi/10.1136/bmjqs-2013-001862
- ¹² Cohen J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.
- ¹³ Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research*, 15(9), 1277-1288. doi/10.1177/1049732305276687
- ¹⁴ Douglass, A., Chickerella, R., & Maroney, M. (2021). Becoming trauma-informed: A case study of early educator professional development and organizational change. *Journal of Early Childhood Teacher Education*, 42(2), 182-202. [doi/10.1080/10901027.2021.1918296](https://doi.org/10.1080/10901027.2021.1918296)
- ¹⁵ The Build Initiative & Child Trends. (2024). A catalog and comparison of quality initiatives: Technical assistance. <https://qualitycompendium.org/top-ten/ta-type/>
- ¹⁶ The Build Initiative & Child Trends. (2024). A catalog and comparison of quality initiatives: Incentives. <https://qualitycompendium.org/top-ten/financial-incentives/>
- ¹⁷ Halle, T., Cleveland, J., Bamdad, T., Nagle, K., Tout, K., Douglass, A., Agosti, J., & Doyle, S. (2021). Promoting a culture of continuous learning in early care and education settings. OPRE Report #2021-208. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://www.acf.hhs.gov/opre/report/promoting-culture-continuous-learning-early-care-and-education-settings>
- ¹⁸ National Child Welfare Resource Center for Organizational Improvement and Casey Family Programs. (2005). Using continuous quality improvement to improve child welfare practice: A framework for implementation. <http://muskie.usm.maine.edu/helpkids/rcpdfs/CQIFramework.pdf>
- ¹⁹ Douglass, A., Halle, T., & Tout, K. (2019). The Culture of Continuous Learning Project Theory of Change. OPRE Report #2019-100. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <https://acf.gov/opre/report/culture-continuous-learning-project-theory-change>
- ²⁰ Early childhood education professional development: Training and technical assistance glossary (2011). Child Care Aware of America & National Association for the Education of Young Children. https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/our-work/public-policy-advocacy/glossarytraining_ta.pdf
- ²¹ Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350-383. <https://doi.org/10.2307/2666999>
- ²² Fox, L., Dunlap, G., Hemmeter, M.L., Joseph, G., & Strain, P. (2003). The teaching pyramid: A model for supporting social competence and preventing challenging behavior in young children. *Young Children*, 58 (4), 48-52.
- ²³ Hemmeter, M. L., Ostrosky, M., & Fox, L. (2006). Social and emotional foundations for early learning: A conceptual model for intervention. *School Psychology Review*, 35, 583-601.
- ²⁴ Holod, A., Faria, A., Weinberg, A. & Howard, E. (2015). *Moving up the ladder: How do states deliver quality improvement supports within their quality rating and improvement systems?* American Institute for Research. <https://files.eric.ed.gov/fulltext/ED579820.pdf>
- ²⁵ About QRIS. (2020). Administration for Children and Families, U.S. Department of Health and Human Services, National Center on Early Childhood Quality Assurance. <https://ecquality.acf.hhs.gov/about-qrjs>

-
- ²⁶ Pyramid Model for Promoting Social and Emotional Competence in Infants and Young Children. From National Center for Pyramid Model Innovations at the University of South Florida.
<https://www.pyramidmodel.org/>.
- ²⁷ Early childhood education professional development: Training and technical assistance glossary (2011). *National Association for the Education of Young Children*.
https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/our-work/public-policy-advocacy/glossarytraining_ta.pdf.
- ²⁸ Early childhood education professional development: Training and technical assistance glossary (2011). *National Association for the Education of Young Children*.
https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/our-work/public-policy-advocacy/glossarytraining_ta.pdf.