



The *We Grow Together* Professional Development System

Final Report of the 2019 Field Test: Executive Summary

December 2020

Sally Atkins-Burnett, Louisa Tarullo, Shannon Monahan, Felicia Hurwitz, Timothy Bruursema, Ann Li, Elizabeth Blesson, Judy Cannon, Ayesha De Mond, and Anna Heckler

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Executive Summary

A. Overview of the WGT project

The We Grow Together Professional Development System (WGT) aims to improve the quality of caregiving in early childhood settings by helping infant-toddler caregivers understand how their interactions with young children support child development. The system includes training, strategies, and materials aligned with the principles and practices of the Quality of Caregiver-Child Interactions for Infant and Toddlers (Q-CCIIT) observational measure (Atkins-Burnett et al. 2015). Local professional development (PD) providers¹ support caregivers as they implement practices intended to promote infant and toddler social-emotional, cognitive, and language and literacy development. The system is designed for use in center-based classrooms and family child care homes (FCCs), in both Early Head Start (EHS) and community-based settings.²

Mathematica and our partners developed WGT as part of a project, Professional Development Tools to Improve the Quality of Infant and Toddler Care, funded in 2015 by the Office of Planning, Research, and Evaluation (OPRE) in the Administration for Children and Families (ACF), U.S. Department of Health and Human Services. We designed this project to support ACF's vision for helping early care and education (ECE) programs and staff deliver quality services that promote positive outcomes for young children.

For a field test of WGT during fall 2018 to spring 2019, Q-CCIIT observations at baseline informed the selection of areas for growth in the caregivers' practices. PD providers and caregivers could then select from an array of PD tools based on constructs and competencies in the Q-CCIIT measure. We organized these tools into nine web-based modules, or sections, designed to support infants' and toddlers' (1) language and literacy development, (2) social and emotional development, and (3) cognitive development. We further divided these modules into key practices that enabled caregivers to explore skills and exercise new caregiving techniques.

To accommodate diversity in learning preferences, WGT provided varied resources. Videos, handouts, and presentations introduced and demonstrated each key practice to provide shared understanding of WGT foundational principles and practices. We made handouts available to share with colleagues/supervisors and families to ensure the entire caregiving team was involved in supporting and using the key practice. Checklists and self-reflection questions on the WGT website offered support for collaborative progress monitoring, self-reflections, and feedback. Using surveys and web analytics, we collected information about the characteristics, background, knowledge, beliefs, and user experiences of the caregivers and PD providers who participated in the field test. Exhibit ES.1 provides an overview of the WGT modules.

¹ Throughout, we refer to “caregivers” as representing nonparental caregivers and teachers in Early Head Start (EHS), community-based child care centers, and family child care (FCC) homes. We refer to “PD providers” as representing a range of ECE staff who provide professional development, both within programs and employed by outside entities, such as managers and education directors, supervisors, mentors, coaches, employees of technical assistance (TA) networks or centers, and master teachers in the ECE setting.

² Throughout, we refer to “classrooms” as representing both center-based and FCC settings.

Exhibit ES.1. WGT PD modules

MODULE	OBJECTIVES Caregivers will learn and implement best practices such as:
 <p>Support Social-Emotional Development: Caregiver-Child Relationships</p>	<ul style="list-style-type: none"> • Responding to children’s social cues • Responding to children’s emotional cues • Responding to children in distress • Building a positive relationship • Supervising and joining in play and activities
 <p>Support Children’s Language Use</p>	<ul style="list-style-type: none"> • Responding to children’s cues • Taking turns in conversation • Asking questions • Extending children’s language use • Supporting children’s use of new words
 <p>Support Children’s Understanding of Language</p>	<ul style="list-style-type: none"> • Using different types of talk • Using lots of specific and new words • Supporting learning about concepts • Engaging children in books • Using themes and projects
 <p>Support Social-Emotional Development: Regulation of Behavior and Emotions</p>	<ul style="list-style-type: none"> • Using responsive routines • Managing behavior and setting limits • Responding to emotional cues • Supporting self-regulation
 <p>Support Social-Emotional Development: Support Non-Mobile Infants’ Peer Interactions</p>	<ul style="list-style-type: none"> • Supporting peer interaction and play • Creating a sense of belonging • Supervising and joining in play and activities
 <p>Support Social-Emotional Development: Support Toddlers’ Peer Interactions</p>	<ul style="list-style-type: none"> • Supporting peer interaction and play • Extending pretend play • Supporting social problem solving • Creating a sense of belonging
 <p>Support Literacy</p>	<ul style="list-style-type: none"> • Engaging children in books • Encouraging a positive attitude toward books • Using new words and sentences • Making connections to things not present
 <p>Support Infants’ Cognitive Development</p>	<ul style="list-style-type: none"> • Supporting object exploration • Supporting children in making choices • Supporting learning about concepts • Extending knowledge about the world
 <p>Support Toddlers’ Cognitive Development</p>	<ul style="list-style-type: none"> • Scaffolding problem solving • Supporting children in making choices • Extending pretend play • Extending knowledge about the world

Together, the PD provider and caregiver set goals for the PD process. These goals then directed an active change phase, during which the caregiver and PD provider used tools from the website to develop an action plan and implement new practices. When caregivers first accessed the WGT website, we asked them to complete a brief web survey on their learning preferences; we then shared results with PD providers to assist in tailoring their coaching approach and tool recommendations. Through PD training, PD providers learned how to develop SMART (specific, measurable, attainable, relevant, and timely) goals and action plans. We encouraged each PD provider to recommend specific resources based on the caregiver's skills, goals, and learning preferences. PD providers could also point the caregiver to supplementary WGT resources, including questions to ask children (available on key rings), posters of descriptive vocabulary and concepts, and other classroom supports that helped to facilitate the application of new skills. The level of intensity and duration needed to learn a key practice varied with the complexity of that practice and characteristics of the setting, and by caregiver (for example, the caregiver's motivation and background experience).

B. Research questions guiding the WGT field test

After careful, iterative development of the WGT resources and system, we designed the field test to implement and examine WGT in real world settings. We expected that use of the WGT system would promote sustained, high quality, and responsive caregiving that supported children's development and increased caregivers' knowledge of child development and quality caregiving. Exhibit ES.2 lists the specific research questions comprising the focus of the field test.

Exhibit ES.2. WGT research questions

Research questions (RQs)

1a. Who are the participants in the WGT field test?

1b. What tools and support help early childhood professionals to use the responsive caregiving principles covered by WGT to improve caregiver-child interactions?

- a. How frequently do caregivers and PD providers make use of WGT over the implementation period, and which tools did they access?
 - b. How do caregivers and PD providers engage with the technological components of WGT (that is, usability of the website, accessing the website and tools within it, using the tablets)?
 - c. Are participants satisfied with WGT (both the content and tool types, such as the narrated presentations, summary handouts, and step-by-step guides)?
 - d. Are participants satisfied with the PD process (goal setting, action planning, practice and observation, reflection, feedback, trusting relationship)?
 - e. What are the challenges and barriers to WGT implementation in infant/toddler settings?
 - f. Do answers to these questions differ by subgroups (caregivers and PD providers associated with FCCs versus center-based settings, or EHS versus community-based settings) or characteristics of caregivers and providers? (See Table III.1 for more information.)
-

Research questions (RQs)

2. Can WGT be used by early childhood professionals to support change in beliefs, knowledge, or practice concerning infants and toddlers?³

- a. Is four months' implementation of WGT associated with change in the quality of caregiver-child interactions, as measured by Q-CCIIT instrument scores (fall to spring)?
 - b. Is four months' implementation of WGT associated with change in caregivers' and PD providers' beliefs and knowledge about child development and caregiving or change in caregivers' self-efficacy as teachers (fall to spring)?
 - c. Does the PD provider perceive change in the PD provider's own practice after PD providers' training and four months' implementation of WGT?
 - d. Does the caregiver perceive change in the caregiver's own practice after four months' implementation of Q-CCIIT PD tools?
 - e. Do answers to these questions differ by subgroups (caregivers and PD providers associated with FCCs versus center-based settings) or characteristics of caregivers and providers? (See Table III.1 for more information.)
-

C. Implementation of WGT in the field test

Site selection. Our goal was to recruit 300 pairs of caregivers and their local PD providers to participate in the WGT intervention, which spanned a four-month period. We targeted 10 geographic areas that included EHS, community-based centers, and FCC settings serving infants and toddlers. To select our geographic areas, we considered states that experts had recommended, using key criteria. They included states with PD registries; states with PD requirements or standards for PD providers or coaches; states with PD requirements for caregivers (for example, required minimum number of hours); and states with infant/toddler or mental health specialists, who serve as PD providers for FCCs in some states.

Participant recruitment. We aimed to recruit 175 center-based caregivers (half of them caregivers for infants and half for toddlers) and 125 FCC providers. By fall 2018, we recruited a purposive sample of 310 pairs, comprising 310 caregivers and 187 PD providers (some of the latter would be paired with more than 1 caregiver). Because of attrition, we used a set of minimum participation criteria to define the final analytic sample. The final field test analytic sample included 271 pairs, comprising 271 caregivers and 168 PD providers. Of the 168 PD providers, 93 were paired with more than 1 caregiver. The sample included 214 center-based classrooms (89 affiliated with EHS and 125 community-based child care programs) and 57 FCCs, of which 16 were affiliated with EHS (Exhibit ES.3).

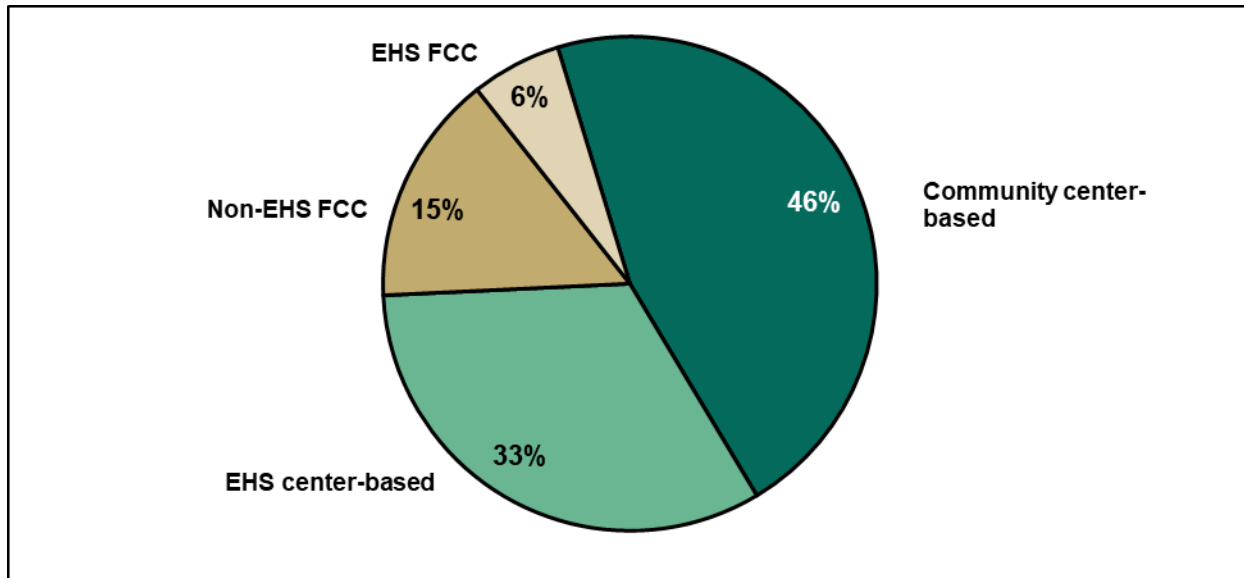
Survey data collection. From September 2018 to January 2019, we asked all caregivers and PD providers in the analytic sample to report information via a web survey about topics such as their background characteristics (for example, demographics, education, and experience) and knowledge and beliefs about child development. Some topics were specific to caregivers, such as their willingness to change their practices; some were specific to PD providers, such as their experience providing PD. We achieved a 98 percent response rate for the PD provider background survey and a 97 percent response rate for the caregiver background survey in the analytic sample.

At three monthly intervals during implementation of the WGT program, we asked caregivers and PD providers to complete brief pop-up surveys about how they were using the PD materials outside of the time they spent on the website, and how they were working together (for example, how frequently

³ We developed the field test using a pre-post design. Findings from these research questions should not be interpreted as causal because we did not include a comparison group.

caregivers had attended meetings with the PD provider in the last month, and what their methods of communication had been). Unfortunately, the response rates were low for these surveys, limiting the dosage information available about the activities of caregivers and PD providers outside of the website.

Exhibit ES.3. Final WGT analytic sample pairs, by type of caregiver setting



Source: Fall 2018 WGT Classroom roster.

After completion of the WGT program’s implementation, we asked all caregivers and PD providers in the analytic sample to fill out web-based feedback surveys from May 2019 through July 2019. The feedback surveys for each type of respondent included a subset of the questions from the background survey and new items related to experiences with the WGT system. For example, the feedback surveys asked about satisfaction with PD (tools, website, process, and content), any changes in practices, and awareness of and access to available resources. We also collected information on the challenges caregivers and PD providers faced in balancing their ongoing work with PD activities. We asked the caregivers how satisfied they were with their relationship with the PD provider—for example, whether the caregiver believed the PD provider showed trust and respect for them. We achieved a 90 percent response rate for the PD provider feedback survey and a 93 percent response rate for the caregiver feedback survey in the analytic sample.

Observational data collection. To conduct the Q-CCIIT observation in each participating classroom, we led two in-person observer trainings, one in August 2018 to prepare for fall data collection and a second one, a remote refresher training in spring 2019, to prepare for spring data collection. In fall 2018, 23 certified observers completed 301 Q-CCIIT observations in caregivers’ classrooms. In spring 2019, 15 certified observers completed observations in 245 classrooms. With only one exception, the observers completed their observations for all caregivers still working in their original classrooms.

PD provider training. The PD provider training took place four weeks before the WGT implementation period—between November and December 2018. Ninety-nine percent of PD providers in the analytic sample participated in the PD provider training, during which we hosted three live 90-minute training webinars over four weeks to introduce WGT, demonstrate website navigation, discuss study logistics, and answer PD providers’ questions. We made each training webinar a requirement and offered them twice to

accommodate PD providers' schedules. In between training webinars, we required the PD providers to log onto the website to complete training activities, which we tracked through web usage data.

PD provider supports for WGT implementation. We provided technical assistance (TA) to PD providers during the training and implementation periods. We made a phone hotline available to offer TA in accessing the WGT website and materials. In addition, we monitored the study email address for questions or comments from participants. We also provided a discussion board on the website for PD providers to anonymously post questions or comments about PD. Senior members of the WGT project team also held monthly office hours. PD providers were able to schedule times for team members to offer them one-on-one information about the PD materials and strategies for working with their caregivers. The WGT team also responded to PD providers' discussion board posts by addressing questions raised in the posts and asking questions to encourage reflection, feedback, and celebration of successes.

During the implementation period, we encouraged PD providers to use the PD provider tools on the website to support their work with caregivers. We also hosted three optional one-hour live implementation webinars, which we made available in February, March, and April 2019. The first one addressed areas for which PD providers had noted the need for more information or training (in the survey at the end of their initial training.) For the next two implementation webinars, we asked PD providers to submit questions for the trainers in advance.⁴

Recommended modules based on Q-CCIIT scores. We used individual caregivers' Q-CCIIT scores from the fall classroom observations to inform which three WGT modules to highlight on each caregiver's home page on the WGT website. Caregivers and their PD providers could see and access the three recommended modules at the start of the implementation period (January 2019).

Although we guided caregivers to three specific modules, they coordinated with their PD providers to choose which of the key practices within the modules they would target. The primary goal in initially presenting only three modules was to guide caregivers to modules about practices on which they could improve, based on their Q-CCIIT observation. Participants also could access the other WGT modules if they chose. Once caregiver-PD provider pairs selected the first module on which to focus, they set goals for practice and worked at their own pace to implement new skills.

Web usage data. From November 2018 through April 2019, we collected web user tracking data from the WGT website on both caregivers and PD providers, noting login frequency, tools accessed, and length of time spent on the website.

Ongoing support and TA. Participants could use the website and contact the WGT study team for TA throughout the implementation period.

D. WGT analytic plan

Exhibit ES.4 displays the analysis methods and sources we used to answer each research and sub-research question.

⁴ We offered each live webinar twice to maximize participation across time zones; one of each of these webinars was audio-recorded and available via the website.

Exhibit ES.4. WGT research question, by analysis methods and sources

Research question	Analysis methods	Sources
RQ1a. Who are the participants in the WGT field test?		
Who are the participants in the WGT field test?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses) • Tests of significance of group differences between center-based classrooms and FCCs, and between EHS and community-based settings 	<ul style="list-style-type: none"> • Background survey • Classroom roster • Sample management system (SMS)
RQ1b. What tools and support help early childhood professionals to use the responsive caregiving principles covered by WGT to improve caregiver-child interactions?		
How frequently do caregivers and PD providers make use of WGT over the implementation period, and which tools do they access?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses) 	<ul style="list-style-type: none"> • Feedback survey • Web usage data
How do caregivers and PD providers engage with the technological components of WGT (that is, usability of the website, accessing the website and tools within it, using the tablets)?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses) 	<ul style="list-style-type: none"> • Feedback survey • Help desk documentation • Web usage data
Are participants satisfied with WGT (both the content and the tool types, such as the narrated presentations, summary handouts, and step-by-step guides)?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses) • Bivariate correlations 	<ul style="list-style-type: none"> • Feedback survey • Help desk documentation
Are participants satisfied with the PD process (goal setting, action planning, practice and observation, reflection, feedback, trusting relationship)?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses) • Content analysis 	<ul style="list-style-type: none"> • Feedback survey • Help desk documentation
What are the challenges and barriers to WGT implementation in infant/toddler settings?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses) • Content analysis 	<ul style="list-style-type: none"> • Feedback survey • Help desk documentation • WGT documentation^a
Do answers to any of these primary questions differ by subgroups (caregivers and PD providers associated with FCCs versus center-based settings) or characteristics of caregivers and providers?	<ul style="list-style-type: none"> • Tests of significance of group differences between center-based classrooms and FCCs, and between EHS and community-based settings 	<ul style="list-style-type: none"> • Feedback survey • Classroom roster • SMS
RQ2. Can WGT be used by early childhood professionals to support change in beliefs, knowledge, or practice concerning infants and toddlers?		
Is four months' implementation of WGT associated with change in the quality of caregiver-child interactions, as measured by Q-CCIIT instrument scores (fall to spring)?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses); t-tests of fall and spring means 	<ul style="list-style-type: none"> • Q-CCIIT observation scores
Is four months' implementation of WGT associated with change in caregivers' and PD providers' beliefs and knowledge about child development and caregiving (fall to spring)?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses); t-tests of fall and spring means 	<ul style="list-style-type: none"> • Background survey • Feedback survey
Is four months' implementation of WGT associated with change in caregivers' self-efficacy as teachers (fall to spring)?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses); t-tests 	<ul style="list-style-type: none"> • Background survey • Feedback survey

Research question	Analysis methods	Sources
Does the PD provider perceive change in the PD provider's own practice after PD providers' training and four months' implementation of WGT?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses) 	<ul style="list-style-type: none"> • Feedback survey
Does the caregiver perceive change in the caregiver's own practice after four months' implementation of Q-CCIIT PD tools?	<ul style="list-style-type: none"> • Descriptive analyses (means and standard deviations, range of responses); t-tests 	<ul style="list-style-type: none"> • Feedback survey
Do answers to these questions differ by subgroups (caregivers and PD providers associated with FCCs versus center-based settings) or characteristics of caregivers and providers?	<ul style="list-style-type: none"> • Tests of significance of group differences between center-based classrooms and FCCs, and between EHS and community-based settings • Multivariate regression analyses 	<ul style="list-style-type: none"> • Q-CCIIT observation scores • Background survey • Feedback survey • Classroom roster • SMS • WGT documentation (PD provider webinars)

^aWGT documentation includes PD provider attendance at training and webinars, PD provider discussion boards, webinars, and office-hour phone calls.

Multivariate analyses and multiple imputation

Most PD providers served two caregivers but could serve as many as five. To account for this situation in analyses, we used hierarchical linear models (HLM) to examine change in caregivers' observed practices and self-reported knowledge and beliefs. The outcomes in the different models were the full Q-CCIIT W-score,⁵ the three Q-CCIIT domain W-scores, the caregiver-reported teacher self-efficacy (Teacher Opinion Survey; Geller and Lynch 1999) in the spring, and the caregiver's knowledge and beliefs as measured by the spring Early Head Start Family and Child Experiences Study (Baby FACES) Beliefs about Development scale.

With the unimputed data, we conducted unconditional models (without covariates) to examine the percentage of the variance in caregiver quality at the caregiver and PD provider levels. The PD provider level did not explain variance in the Q-CCIIT spring scores. After adding covariates in the model, none of the PD provider variables was significant in predicting any of the spring Q-CCIIT observation scores.

With the PD provider level not contributing significant variance, we added PD provider characteristics to the record of the caregiver partner(s) and used Full Information Maximum Likelihood (FIML) in Mplus (Muthén and Muthén 1998–2012) to estimate models that account for the missingness. FIML models impute for missing model predictors but not outcomes.

We simplified the models to limit to variables with stronger explanatory power and avoid missing significant associations when related variables in the model were associated with one another. We used the same set of covariates across models (with the relevant fall score used for each outcome) to allow for comparisons. After estimating in FIML, we tested our findings using multiple imputation and re-estimating the HLMs using *miAnalyze* with the 20 imputed data sets (Appendix F).

⁵ W-scores (Woodcock 1999) are based on item response theory (IRT) results and are useful scores for examining growth. W-scores have a mean difficulty of 500 and have properties that support criterion-referenced interpretation.

E. Highlights of study findings

1. Who were the caregivers in the WGT field test?

The WGT study sample comprised 271 PD provider-caregiver pairs—271 caregivers and 168 PD providers from EHS and community-based centers and FCCs (some PD providers were paired with more than 1 caregiver). *The caregiver sample was racially/ethnically diverse and primarily female.* Forty-six percent of WGT caregivers identified as White, 38.8 percent as Black/African American, 24.8 percent as Hispanic/Latino, 5.3 percent as Asian, 4.9 percent as American Indian/Alaska Native, and 0.4 percent as Native Hawaiian/Pacific Islander. The caregiver sample was 98.8 percent female. *They had an average of 11.2 years of experience in ECE. About half of the sample of WGT caregivers (49.8 percent) had received an associate’s degree or higher.* However, education levels differed by caregiver subgroup, with EHS caregivers generally reporting higher education levels than their community-based counterparts; for example, more EHS than community-based caregivers reported a bachelor’s degree as their highest level of education (27.6 and 15.3 percent, respectively).

Most caregivers had prior experience participating in PD activities before beginning WGT. Almost three-quarters of caregivers reported having a mentor, coach, or other PD provider before the study (72.9 percent). Almost half of all caregivers had a previous relationship with the WGT PD provider with whom they worked during this project (48.6 percent) and, on average, reported having a positive relationship with this PD provider (mean of 3.8 on a 4-point rating scale).

In fall 2018, caregivers reported satisfaction in working with infants and toddlers, and expressed being open to improving their practice as they embarked on WGT. Caregivers reported being very likely to continue working in infant/toddler care, particularly if they worked in FCCs (84.4 percent overall, 98.2 percent FCCs). In fall 2018, 91.6 percent of caregivers endorsed being ready to change or already actively engaged in change on a Stage of Change scale.

2. Who were the PD providers in the WGT field test?

In fall 2018, most WGT PD providers were internal coaches in their respective settings (59.2 percent), typically worked with 13–14 caregivers on an ongoing basis, and were supervisors of the caregivers they coached (63 percent of caregivers reported their PD provider was also their supervisor). The PD providers were not as racially/ethnically diverse as the caregivers. Most PD providers were White (55.4 percent) and female (97.6 percent). About three-quarters of PD providers had attained a bachelor’s degree or higher (75.8 percent); about one-quarter had earned a master’s degree or higher (25.5 percent). ECE was their primary degree field (42.8 percent), and more than half reported membership in a professional organization or network (56.5 percent).

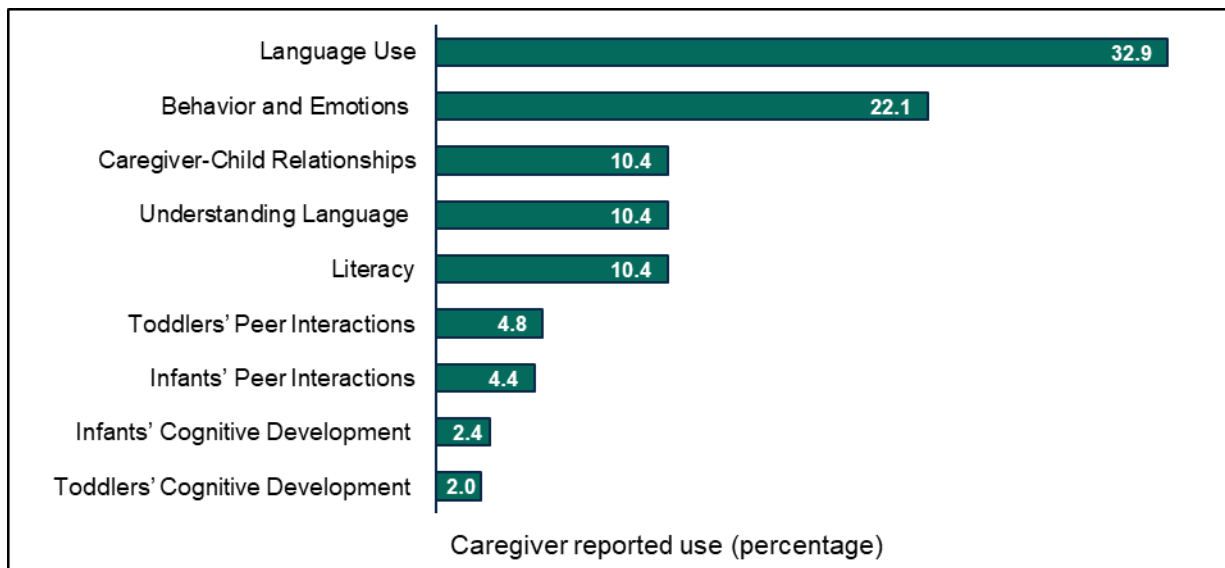
WGT participants are not representative of PD providers and caregivers nationally. They agreed to participate in an intensive online PD program for approximately four months, with an additional month for PD provider remote training. They were comfortable using written materials in English. Therefore, readers should not use these data to draw conclusions about the PD experiences of PD providers and caregivers nationally.

3. In which WGT modules did caregivers and PD providers report spending most of their time?

WGT modules provided a comprehensive range of domains of child development that caregiver and PD providers could use to improve their practice. Based on their baseline Q-CCIIT observation, we

recommended that most caregivers use the Language Use module in WGT (77.2 percent). The other two most frequently recommended modules were the Understanding of Language (69.3 percent) and Literacy (57.5 percent) modules. PD providers most commonly reported using those three modules with their caregivers (76.7, 58.7, and 50.7 percent, respectively), as well as the Support for Children’s Behavior and Emotions module (51.3 percent). Similarly, *the majority of the WGT caregivers reported spending most of their time in the Language Use (32.9 percent of caregivers) or Behavior and Emotions (22.1 percent) modules; fewer reported spending most of their time in the Understanding Language or Literacy modules (10.4 percent for each; Exhibit ES.5).*

Exhibit ES.5. WGT caregivers reported most frequent use of the Language Use and Behavior and Emotions modules



Source: Spring 2019 WGT Caregiver and PD Provider Feedback Surveys.

Note: Three modules were recommended to each caregiver based on scores on the positive Q-CCIIT scales, but PD providers were given permission to introduce other modules’ key practices as needed, based on their observations. Caregivers collaboratively selected practices within modules and created goals with the PD providers

4. How did caregivers access and respond to WGT materials?

Most caregivers logged onto the WGT website through a tablet provided by the study (74.7 percent); regardless of the device, most used Wi-Fi (81.1 percent). Although some caregivers experienced challenges at first in accessing the technological components of WGT, by the end of the study they reported the website was easy to use once they logged on (96.0 percent).

Across settings, caregivers who tried a WGT activity reported it to be useful (mean ratings between 3.9 and 4.4 on a 5-point scale). The activities most commonly reported as useful were trying WGT practices in their classroom (mean of 4.4, n = 245), engaging in self-reflection (mean of 4.2, n = 235), and receiving feedback from their PD provider (mean of 4.3, n = 231). Nearly all caregivers used the iPad tablet to video-record their practice (92.6 percent); of those who did so, most found it useful (mean of 4.1, n = 219).

Center-based caregivers felt supported by leadership and peers in their settings during WGT implementation (mean ratings of 4.8 and 4.9, respectively, on a 6-point scale). However, on average, caregivers reported challenges in finding time to participate in WGT activities, given their already busy schedules and many job responsibilities. These challenges included finding time to use online materials or practice with children, and having a PD provider who was too busy (21.5 percent). A greater percentage of FCC caregivers than center-based caregivers reported working more than eight hours a day (74.5 percent compared with 26.7 percent), leaving little time for PD activities.

Caregivers reported having positive and trusting relationships with their PD providers (mean ratings of between 3.7 and 3.9 on a 4-point scale) and collaborating to set goals (mean rating of 4.9 on a 6-point scale). Despite challenges in finding time to meet, most of them met more than once a month (67.4 percent), including both in person and via virtual meetings.

More than 91 percent of caregivers overall and across different settings agreed they had a positive experience with WGT. Caregivers most commonly agreed that WGT provided useful resources and helped them become more effective in interacting with children (99.6 percent and 98.4 percent, respectively). Nearly all caregivers (more than 98 percent) across settings and WGT practices agreed that using these practices helped infants and toddlers (overall mean agreement rating of 5.3 on a 6-point scale)—especially with their development of language and literacy (98.4 percent and 98.8 percent, respectively).

5. How did PD providers respond to WGT materials?

Most PD providers who tried WGT coaching activities reported being satisfied with them (mean ratings between 3.7 and 4.4 on a 5-point scale), most commonly with observing caregiver practice via video or in person (mean of 4.4), providing feedback to caregivers (mean of 4.3), and action planning activities (mean of 4.2). PD providers tended to spend more time on the WGT website reviewing coaching materials and training modules than reviewing the content in caregivers' recommended modules (68 percent compared with 15 percent). Similar to caregivers, PD providers reported challenges that prevented them from meeting with their caregivers, including finding time (50.7 percent) and dealing with additional work responsibilities (26.0 percent).

6. Did WGT support change in caregivers' beliefs and knowledge?⁶

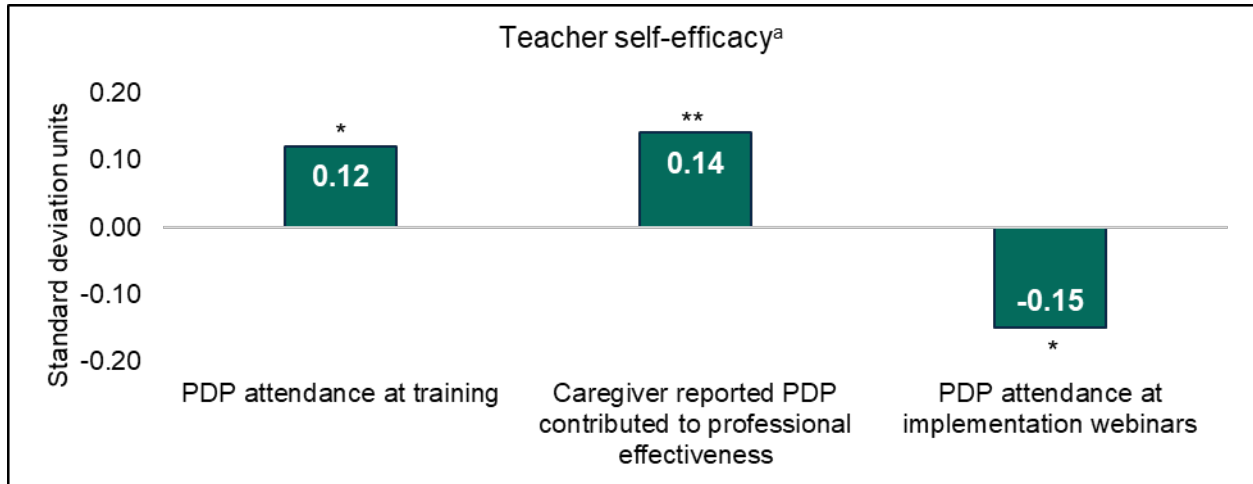
WGT caregivers agreed more with evidence-based beliefs about practices supporting language development in spring 2019 than in fall 2018. These practices formed the basis of WGT resources. We found an increase in this self-reported measure for the full sample and in each setting subgroup. The finding is consistent with the type of module in which caregivers spent most of their time working—as reported above, more than half of caregivers worked primarily on one of the three language modules. Change was not detected for beliefs about supporting social-emotional development, supporting cognitive development, or knowledge of child development (see Exhibit ES.6).

Caregivers reported change in their ability to be effective in providing care for infants and toddlers, with an increase in their teacher self-efficacy related to their WGT experiences (mean score of 4.6 to 4.8 on a 6-point scale). After controlling for caregiver, classroom, and program characteristics and fall score, the number of WGT training webinars that their PD providers attended and the caregivers' report of how

⁶ We developed the field test using a pre-post design. Findings should not be interpreted as causal because we did not include a comparison group.

much the PD provider contributed to their professional effectiveness were positively associated with their spring self-efficacy score. However, PD provider attendance at more of the implementation webinars was negatively associated with the caregiver’s report of self-efficacy (Exhibit ES.6). Although open to all PD providers, the implementation webinars were optional and designed to address the needs of providers who expressed concerns or had difficulty understanding how to implement key WGT activities after training.

Exhibit ES.6. Caregivers who reported their PD provider contributed to their professional effectiveness and had PD providers who attended more WGT training webinars reported stronger self-efficacy in spring 2019



Source: Spring 2019 WGT Caregiver Feedback Survey and PD provider attendance at initial training and implementation webinars.

Note: PDP = PD provider. Models were estimated with full information maximum likelihood. Covariates include teacher self-efficacy (z-score) in the fall, beliefs about development and practice in the fall, experience in ECE, the Kessler-6 scores, class/group size, caregiver: child ratio, whether classroom served toddlers, and setting type (with community-based as the referent). *p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.

^a Geller, S., and K.B. Lynch. Teacher Opinion Survey [Measurement Instrument]. Virginia Commonwealth University Intellectual Property Foundation and Wingspan, LLC, 1999.

After controlling for caregiver and setting characteristics, none of the indicators of WGT PD provider involvement in WGT training was significantly associated with spring caregiver reports of beliefs about development. Caregivers’ fall beliefs about development, class size, and being in an EHS setting had positive associations with spring beliefs about development. The positive association with class size—also positively associated with the caregiver’s report of self-efficacy—indicates that caregivers with larger class sizes in community-based settings made greater change in their beliefs than those with smaller class sizes.

7. Did WGT support change in PD providers’ beliefs, knowledge, and practice?

From fall 2018 to spring 2019, WGT PD providers agreed more with evidence-based beliefs and knowledge about how to support children’s language development (mean score of 4.7 to 5.0 on a 6-point scale). WGT resources were closely aligned with these beliefs and knowledge. PD providers’ scores decreased slightly on a measure of overall beliefs about child development that did not include WGT

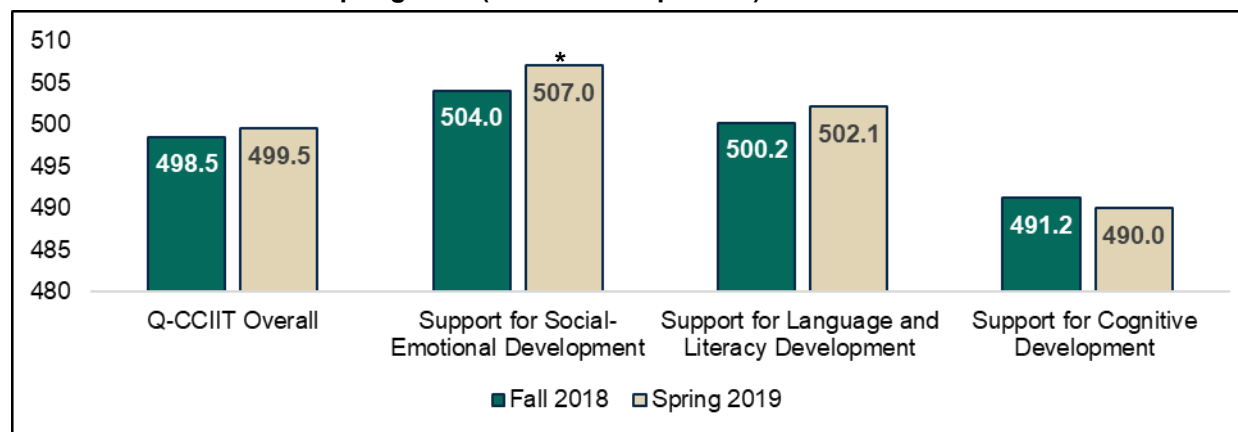
practices (mean score of 5.1 to 5.0).⁷ We did not find significant changes for PD provider measures of beliefs about supporting social-emotional or cognitive development, or their knowledge of child development (such as when children develop specific skills).

PD providers’ reported use of different PD strategies evolved between fall and spring, including increases in reported use of video recordings of caregiver practice (a recommended activity in WGT; mean rating from 2.2 to 3.6 on a 6-point frequency scale). In contrast, there was a decrease in reported use of methods such as discussing in-person classroom observations (mean 4.6 to 4.2) and suggesting or providing trainings for caregivers to attend, neither of which were specific components of WGT (mean 3.9 to 3.5 and 3.6 to 3.1, respectively). From fall to spring, PD providers responded consistently, on average, that PD approaches should be changed if the caregiver’s practice is not improving, and that individual caregivers need different PD approaches.

8. Did WGT support change in caregivers’ observed practice?

From fall to spring, average scores for caregivers participating in WGT improved in the Support for Social-Emotional Development domain of the Q-CCIIT (Exhibit ES.7). This finding aligned with the original hypotheses; support for social-emotional development is a hallmark of all module practices to varying degrees.

Exhibit ES.7. WGT caregivers scored significantly higher in the Social-Emotional Development domain from fall 2018 to spring 2019 (W-score comparison)



Source: WGT Field Test 2019 Q-CCIIT observations.

Note: Mean score for W-scores is 500.

* Indicates a significant difference between fall and spring means (*p < 0.05).

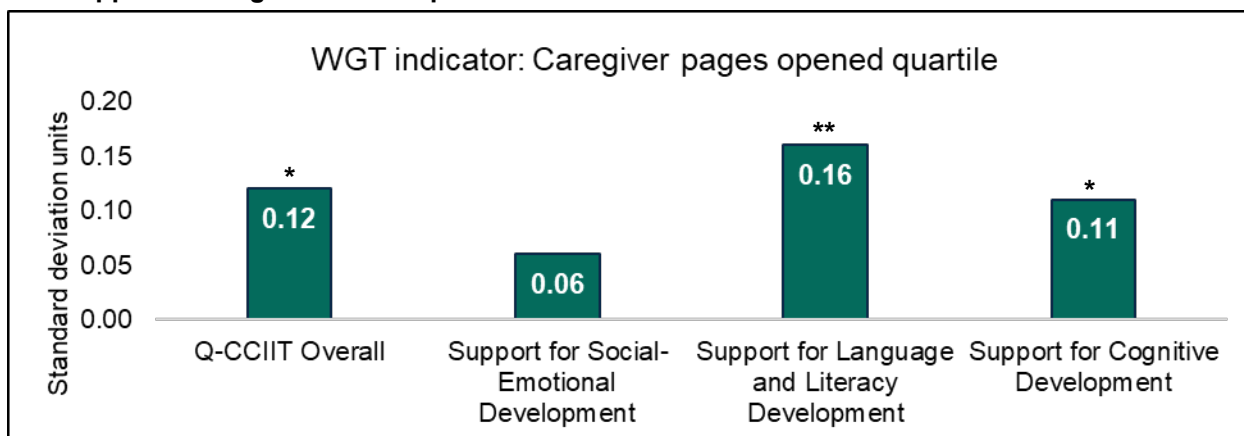
Looking at change in Q-CCIIT scores by subgroup, EHS caregivers demonstrated a significant increase in Q-CCIIT scores in both the Support for Social-Emotional Development and Support for Language and Literacy Development domains (W-score increase from 503.8 to 509.7 and 498.7 to 502.8, respectively). As noted above, more than half of all caregivers (53.7 percent), including EHS caregivers, spent most of their time working in one of the three modules focusing on language and literacy practices.

⁷ This measure addressed knowledge of the capability of even very young infants; how to support positive physical health, such as preventing dental problems; and what child behaviors are indicators of future problems or disabilities.

Our selected dosage indicator of WGT pages opened by the caregiver (by quartile) was significantly related to spring total Q-CCIIT scores. The fall baseline Q-CCIIT score, the caregiver’s years in ECE, and a negative coefficient for the number of weeks between observations and the start of WGT were other significant predictors of total Q-CCIIT scores.

Looking at domain-level Q-CCIIT scores, the WGT dosage indicator was also positively related to the spring Support for Language and Literacy and Support for Cognitive Development domain scores, along with other covariates. However, unlike the other domains and the total score, none of the WGT dosage estimates was significant for the Support for Social-Emotional Development domain score, although the indicator for EHS caregivers was. Caregivers with a bachelor’s degree, smaller group sizes, and better caregiver:child ratios had stronger scores in Support for Social-Emotional Development in the spring, controlling for the fall observation in this domain and for EHS. The bachelor’s degree was a significant covariate only in Support for Social-Emotional Development. This finding suggests that higher education pre-service training may place a stronger emphasis on social-emotional development than on other areas.

Exhibit ES.8. Our selected dosage indicator of WGT pages opened by the caregiver was significantly associated with spring total Q-CCIIT scores and Support for Language and Literacy and Support for Cognitive Development domain scores.



Source: Spring 2019 WGT Caregiver Feedback Survey and Web user tracking data.

Note: Models were estimated with full information maximum likelihood. Covariates include the fall score of the respective outcome, weeks between WGT start and spring observation, caregiver education level, experience in ECE, Kessler-6 scores, whether classroom served toddlers, class/group size, caregiver:child ratio, ECE setting type, caregiver report of contribution to professional effectiveness, PD provider is supervisor, and PD provider dosage. *p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.

F. Implications of the WGT field test findings

The WGT field test was designed to examine whether a diverse sample of caregivers, working in concert with their local PD providers, could use the WGT intervention to change their beliefs and knowledge of evidence-based practices or improve the quality of their practices with infants and toddlers. The intervention was intentionally designed to take place within “real world” conditions, using local PD providers and sampling from a range of ECE settings serving infants and toddlers across multiple localities.

From the first steps of selection and recruitment, we realized that challenges would arise. At the setting level, contacts often needed to discuss requirements for participation with other decision makers and weigh other PD requirements. For example, EHS settings often needed program-level approval before committing to the study. A number of caregiver-provider pairs expressed concern about having the time to participate in the intervention, given their other responsibilities; some were unable to commit. For caregivers, these demands included managing curriculum and assessment, providing daily care for children from birth through age 3, and engaging in existing PD activities.⁸ For PD providers, their mentoring caseloads often ranged beyond 10 caregivers, and they commonly had supervisory as well as PD responsibilities for these staff.

In fact, time and flexibility were serious challenges. Caregiver-PD provider pairs had difficulty finding time to meet and often spent less time than we had hoped engaging with the materials on the website. Some experienced difficulties engaging with the technology, especially at the outset. However, they persisted, seeking help with access and mastering their iPad tablets to record and share their practice with their mentors. They conferred with their PD provider in selecting one or more modules on which to work, trying out exercises in the classroom, and noting children's progress.

We found differences between caregiver-PD provider pairs working in EHS settings compared to those in community-based settings, which suggests important implications for future research. We found an association of EHS with improved quality in some of the models predicting the overall Q-CCIIT and Support for Social-Emotional domain scores. EHS PD providers may have been more attuned to practice-based coaching approaches because of the program's emphasis on coaching. EHS programs often have smaller class sizes and shorter days relative to community-based providers.

Ultimately, with only four months of exposure (and often less), caregivers on average progressed toward improved self-efficacy and beliefs about practices for supporting the language development of infants and toddlers in their care. They showed improvement in the observed quality of caregiver-child interactions in the Support for Social-Emotional Development domain. As noted above, these findings should not be interpreted as causal because we did not include a comparison group. Caregivers expressed positive feelings about the WGT concepts and activities, the support given by their PD providers, and their ability to reflect on and change their practice. The lessons from this field test will be helpful in enhancing the WGT system and suggesting questions to be explored in further research.

⁸ Anecdotal evidence suggests that WGT did not fulfill the PD requirements that caregivers needed to meet; therefore, participation in the study required work beyond the other PD activities they were required to attend.

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