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Profiles of Five Systems – Appendix

Acknowledgments

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An Exploration of Online Professional Development Systems Supporting the Competencies of Infant and Toddler Teachers and Caregivers: Profiles of Five Systems

In 2017, the Office of Planning, Research, and Evaluation in the Administration for Children and Families funded Mathematica to conduct the Infant and Toddler Teacher and Caregiver Competencies (ITTCC) project. The project aims to examine existing efforts across states, institutions of higher education, professional organizations, and early care and education programs related to competencies for infant and toddler teachers and caregivers who work in group settings and build a conceptual foundation to inform future measurement, research, and evaluation. As part of this project, we conducted an exploration of online competency-based professional development (PD) systems that include infant and toddler teachers and caregivers as an audience. The profiles included in this volume were developed based on that exploration. Definitions for key terms (competency, competency framework, competency-based professional development, proficiency levels) as used in this project can be found on page 3.

This volume is accompanied by a brief that highlights key findings from the exploration and that outlines future areas for learning; that brief is available at https://www.acf.hhs.gov/opre/report/exploration-online-professional-development-systems-supporting-competencies-infant.[1]

To support the quality of care for infants and toddlers, states, national organizations, and institutions of higher education have made efforts to outline specific competencies (that is, knowledge, skills, and attributes) that are essential to the practice of teaching and caring for infants and toddlers and that are needed to promote their optimal development. Competency-based professional development (PD) for teachers and caregivers is readily available through a number of online systems.

The Infant and Toddler Teacher and Caregiver Competencies (ITTCC) project conducted an exploration to give the child care and early education (CCEE) field a snapshot of how select virtual, competency-based PD systems are implemented; how teacher and caregiver knowledge, skills, and attributes are assessed in these systems; and whether the systems have or are building an evidence base. Box 1 describes how we selected systems for inclusion and provides an overview of how we gathered information on the systems selected for the exploration and the range of information gathered. In the rest of this volume, we present profiles of the five systems selected for a close review. The profiles are in alphabetical order by the name of the system shown in Box 1.

Box 1. Approach for the PD system exploration

Selecting systems for inclusion

To identify online PD systems, we conducted an Internet search and asked for nominations from experts in the infant-toddler CCEE field. We identified 23 systems in our search for a wide variety of systems, narrowed the pool identified to 12 for further exploration, and selected 5 systems for in-depth review using the following criteria:

- Required characteristics of the PD systems selected:
    - Relevant to competency-based learning for teachers and caregivers of infants and toddlers
    - Aligned with or based on a competency framework or an observational measure of competencies
    - Currently in use or in active development
- Preferred characteristic of the PD systems selected: Indication an evidence base exists for the systems or an evidence base is being developed
- Desired potential areas of variation across the PD systems:
    - Funding source(s)
    - Approach to supporting competencies

Using these criteria, we selected the following systems for inclusion:

- CDA with CLASS®
- Children's Learning Institute (CLI) Engage
- Maine Roads to Quality Professional Development Network (MRTQ PDN)
- Virtual Lab School (VLS)
- We Grow Together (WGT)

Documenting characteristics of the PD systems

We created profiles of each of the five systems selected by gathering information from publicly available online sources (including, but not limited to the websites hosting the PD system). We documented the following information:

- **Background information**, including developer of the system, funder, source, year developed, cost to use, availability in languages other than English, intended audience, and audience focus
- **How the system is used**, including alignment with a competency framework and/or observational assessment; areas of focus; approach to PD; approach to developing the PD system; approach to assessment of the competencies; components of the system for different proficiency levels; academic credits, certifications, or PD hours; incentives; and additional materials or resources
- **The research behind the system**, including how research or evidence informs or informed the development of the PD system, and research on the PD system

We also asked representatives of each of the systems to review their respective profiles for accuracy and to provide any other information they wanted to share. We updated each of the profiles based on the representatives' suggested edits and any other relevant additional information provided.

Key definitions

The ITTCC project has defined competency, competency framework, competency-based professional development, and proficiency levels as follows:

Competency: a piece of knowledge (K), a skill (S), or an attribute (A) essential to the practice of teaching and caring for infants and toddlers.

- Knowledge is information that may be applied to practice.

- Skills are strategies or abilities that may be applied to practice.

- Attributes are attitudes, beliefs, or other characteristics that may influence the application of knowledge and skills to practice.

Competency framework: a compilation of competencies (that is, KSAs).

Competency-based professional development (PD): PD that focuses on supporting teachers and caregivers of infants and toddlers in mastering specific competencies (that is, KSAs).

Proficiency levels: Competencies (that is, KSAs) that are essential for practice at various career stages (for example, entry, mid-career, advanced).

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[1] Nguyen, T. and E. Moiduddin. "An Exploration of Online Professional Development Systems for Supporting the Competencies of Infant and Toddler Teachers and Caregivers: Key Findings and Next Steps for Learning." OPRE Report #2022-263, Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2022.

System Profiles

CDA with CLASS®

System summary: CDA with CLASS® is an online training program that supports users in earning a new Child Development Associate® (CDA®) Credential™.[1] The system also offers a program for renewing a CDA® Credential™ called the CDA Renewal with CLASS®. The training is aligned with the CDA® competencies and is delivered within the lens of the Classroom Assessment Scoring System® (CLASS®);[2] that is, coursework integrates CLASS® concepts to improve teacher–child interactions in the classroom setting. The CDA with CLASS® course covers content related to working with infants, toddlers, and preschool-age children. The renewal option offers separate courses for those working with infants and toddlers or preschool-age children. CDA with CLASS® is one component of the larger CLASS® professional development (PD) system. CDA with CLASS® and CDA Renewal with CLASS® support users in completing the professional education hours needed to apply for or renew a CDA®. CDA with CLASS® also helps users build the portfolio needed for applying for a new CDA®.

Links:

- CDA with CLASS®, available at https://teachstone.com/cda-programs/cda-with-class/
- CDA with CLASS® course options, available at https://cdastore.teachstone.com/

Background information

Developer of system: Teachstone

Funder: Teachstone

Source: Teachstone

Year developed: 2018[3]

Cost to use: There are three versions of the base CDA with CLASS® course that covers all age groups (infant, toddler, and preschool): the on-demand version for continuing education units (CEUs) ($329), the facilitated version for CEUs ($549), and the facilitated version for college credit ($1,299). The CDA Renewal with CLASS® course, which has separate tracks for the different age groups (infant and toddler versus preschool), is $215.[4, 5] The process and cost for obtaining the CDA® is separate and paid directly to the Council for Professional Recognition, which grants the CDA®.

Availability in another language: Not available in another language.

Who is it for?

Intended audience: The system's intended audience is teachers and caregivers of infants, toddlers, and preschoolers.

Audience focus: The system is designed for pre-service and in-service teachers and caregivers.

 How is it used?

Alignment with a competency framework and/or observational assessment:

- CDA with CLASS® is aligned with the CDA® Competency Standards, although there is not a specific track for teachers and caregivers of infants and toddlers.
- CLASS®[1], which is an observational assessment that is one component of the larger CLASS® professional development (PD) system

Competency domains:

- Trainings for the CDA with CLASS® course for those earning a CDA® for the first time focus on the CDA® competency domains, which include:
  - Safe, healthy learning environments
  - Physical and intellectual competence
  - Social and emotional development
  - Relationships with families
  - Program management
  - Professionalism
- The CDA Renewal with CLASS® course has six units, each of which include content tailored to the specific age groups of focus (infant and toddler or preschool), which include:
  - The developing child and CLASS®
  - Interactions and CLASS®
  - A closer look at CLASS®
  - Planning with CLASS®
  - Interacting with family
  - Interacting with colleagues and community
- Both versions include concepts relevant to the CLASS® domains, which include:
  - Responsive caregiving for infants
  - Emotional and behavioral support
  - Engaged support for learning for toddlers

Approach to PD:

Course(s) and time commitment

As its website describes, CDA with CLASS® is offered in two formats: "a convenient on-demand, self-guided course or a fully facilitated course with experienced educators who offer specific feedback and strategies."6 In the on-demand CDA with CLASS® course, users can

access the coursework at their convenience and work at their own pace. In the facilitated CDA with CLASS® courses, a team of educators facilitate and help users through the process of obtaining a CDA®. The course is guided, but self-paced. The CDA with CLASS® course is 24 weeks long, and the CDA Renewal with CLASS® is 16 weeks long.

Course format

All CDA with CLASS® courses include videos of real classrooms for users to view on the platform. The CDA with CLASS® courses include concepts from the infant, toddler, and preschool versions of the CLASS®, and throughout the courses users have opportunities to focus on specific age groups. For example, in some lessons, users read an article on the age group for which they provide care, or content throughout the course might call out specific age groups. All courses include access to the CLASS® Learning Community to engage in peer-to-peer discussions. For guided courses, instructors are available to answer questions, provide feedback, and grade assignments. The CDA with CLASS® course for college credit includes "access to podcasts and additional learning experiences," as stated on the Teachstone website.[3]

Approach to developing the PD system: CDA with CLASS® was developed using core competencies for teachers and caregivers in alignment with the CDA® standards and requirements, as well as drawing upon the perspective of the CLASS® and its research base[2]; that is, the trainings draw on CLASS® concepts and strategies, which focus on high quality teacher–child interactions. Materials reviewed did not include additional information about how the system was developed.

Assessment of competencies: Users must complete and submit graded assignments. Competencies are assessed through a variety of activities including module quizzes and section assessments. Users cannot pass the course unless they complete all work, including all modules, assignments, and discussions.[7]

Passing the CDA with CLASS® courses and obtaining the CDA® certification or renewal are two different processes. The CDA with CLASS® course offers the 120 professional education clock hours necessary to apply for the CDA®.

Components of the system for different proficiency levels: The system is not tailored to different proficiency levels overall or by competency domains.

Academic credits, certifications, or PD hours:

- CEUs
- College credits
- Professional education clock hours necessary for earning or renewing the CDA; users must directly apply with the Council for Professional Recognition and meet additional criteria

Incentives: There are no specific incentives tied to the use of the CDA with CLASS® system. The system is available to anyone who wishes to pursue a CDA®. Incentives for obtaining a CDA® vary by state.

Additional materials or resources: Users in the CDA with CLASS® also receive a CDA® competency book; users can choose the Infant/Toddler, Preschool, or Family Child Care CDA® Competency Standards book.

What is the research behind it?

How research or evidence informs or informed development of the PD system: The CDA with CLASS® system was developed and created in alignment with the CDA® Competency Standards and enhanced with concepts from the CLASS®.[2] The CLASS® observational measure has been validated in more than 2,000 classrooms,[8] and more than 200 research studies have shown that "children in classrooms with more effective teacher-student interactions, as measured by the CLASS®, make gains in areas critical for success in school and life."[9] In the past two decades, studies have generally found these relationships to be small to modest in strength.[10, 11]

Research on the online PD system: Materials reviewed did not include information about research on the CDA with CLASS® system.[12]

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[1] The Council for Professional Recognition issues the Child Development Associate® (CDA®) Credential™.

[2] Pianta, R.C., K.M. La Paro, and B.K. Hamre. *Classroom Assessment Scoring System™: Pre-K Manual*. Baltimore, MD: Paul H. Brookes Publishing, 2008.

[3] Personal communication with S. Caverly, February 22, 2022.

[4] Teachstone. "The Only Child Development Associate Preparation Program Powered by CLASS®." 2021a. Available at https://cdastore.teachstone.com/.

[5] Cost information was obtained on November 15, 2021, from the Teachstone website.

[6] Teachstone. "CDA with CLASS®." 2021b. Available at https://teachstone.com/cda-programs/cda-with-class/.

[7] Teachstone. "Child Development Association (CDA) Credential." 2021c. Available at https://teachstone.com/support/child-development-association-cda-credential/.

[8] Center for Advanced Study of Teaching and Learning. "Classroom Assessment Scoring System™." n.d. Available at https://education.virginia.edu/classroom-assessment-scoring-system.

[9] Council for Professional Recognition. "Teachstone Training Center Earns Coveted CDA Gold Standard℠." 2019. Available at https://cdn2.hubspot.net/hubfs/336169/Council%20Gold%20Standard%20Press%20Release%20%204.1 7.19.pdf.

[10] Burchinal, M. "Measuring Early Care and Education Quality." *Child Development Perspectives*, vol. 12, no. 1, 2018, pp. 3–9.

[11] Perlman, M., O. Falenchuk, B. Fletcher, E. McMullen, J. Beyene, and P.S. Shah. "A Systematic Review and Meta-Analysis of a Measure of Staff/Child Interaction Quality (the Classroom Assessment Scoring

System) in Early Childhood Education and Care Settings and Child Outcomes." *PLoS One*, vol. 11, no. 12, 2016, pp. 1–33.

[12] In personal communication with the representative of the PD system (S. Caverly, February 22, 2022), there will potentially be an evaluation of the system.

Children's Learning Institute (CLI) Engage

System summary: CLI Engage is an online professional development (PD) system and assessment platform for early childhood programs. The tools and resources available through CLI Engage were originally developed for the Texas School Ready Project (TSR). TSR is a large program that focuses on "research-based curriculum, classroom resources, technology-driven child progress monitoring, teacher/staff professional development with one-on-one coaching, and ongoing program evaluation."[1] to support early childhood professionals serving children from birth to age 6. CLI Engage includes several competency-aligned trainings relevant for teachers and caregivers of infants and toddlers. For example, it offers training based on the CIRCLE Infant-Toddler Teacher Competencies for teachers and caregivers of infants and toddlers and a course on the Texas Core Competencies for Early Childhood Practitioners and Administrators that emphasizes how to improve the quality of care and education that young children birth to age 5 receive. The system also offers a course on Infant, Toddler, and Three-Year-Old Early Learning Guidelines (ITELG) to help early childhood professionals understand what young children should know and be able to do. All early childhood professionals can enroll in these online trainings, but some aspects of the broader PD offered by CLI Engage are available only to teachers and caregivers in Texas.[2]

Links:

- CLI Engage, available at https://public.cliengage.org/
- TSR Tools and Resources, available at https://texasschoolready.org/resources/tsr-tools/

Background information

Developer of system: Children's Learning Institute at the University of Texas Health Science Center at Houston in partnership with the Texas Education Agency and Texas Workforce Commission

Funders:

- Texas Education Agency
- Texas Workforce Commission
- Various philanthropic supporters[3]

Source: Children's Learning Institute at the University of Texas Health Science Center at Houston

Year developed: TSR launched in 2003, and the CLI Engage platform launched in 2014.

Cost to use: CLI Engage content, including online PD courses and activities, is freely available to the public after creating a free account on the website. Eligible child care and early education programs based in Texas[4] have access to a broader range of TSR resources (including a supplemental classroom curriculum, a progress monitoring system, activity collections, and quality improvement tools) at no cost. TSR resources are also available to non-eligible programs through fee-based licenses. A CLI Engage Teacher License, which is $175 annually,

provides one year of access for one teacher. A CLI Engage Administrator License, which is $75 annually, "provides access for one year to district/school staff that need access to CLI Engage for administrative purposes."[5]

Availability in another language: Yes, in Spanish for select courses and materials.

Who is it for?

Intended audience: CLI Engage is publicly available to early childhood professionals, including teachers and administrators, serving children birth to age 6. Some CLI Engage resources are fee-based if professionals do not meet eligibility requirements.[6]

Audience focus: The system is designed for in-service early childhood professionals serving children birth to age 6.

How is it used?

Alignment with a competency framework and/or observational assessment:

- CIRCLE Infant-Toddler Teacher Competencies
- Texas Core Competencies for Early Childhood Practitioners and Administrators

Competency domains:

- Competency domains for the CIRCLE Infant-Toddler Teacher Competencies include:
  - Language and communication
  - Early literacy
  - Cognitive skills
  - Social and emotional development
  - Physical development
- Competency domains for the Texas Core Competencies for Early Childhood Practitioners and Administrators include:
  - Child growth and development
  - Responsive interactions and guidance
  - Learning environments
  - Planning framework, curriculum, and standards
  - Supporting skill development
  - Observation and assessment
  - Diversity and dual language learners
  - Family and community relationships
  - Health, safety, and nutrition

      –   Professionalism and ethics

Approach to PD:

Course(s) and time commitment

CLI Engage currently offers a catalog of courses (including those described above) focused on different topics on its platform, each with multiple modules to complete. Each module is self-paced.

The CIRCLE Infant & Toddler Teacher Training: Play with Me series comprises 15 modules and takes approximately 27 hours to complete.[7] The Texas Core Competencies for Early Childhood Practitioners and Administrators course comprises 10 modules and takes 9.5 hours to complete. The ITELG course comprises 14 modules and takes 30 hours to complete.

Course format

Users first respond to a brief, ungraded, multiple-choice pre-test before the module begins. Users then move on to the interactive training content. Many of the courses feature narrated videos.[8] At the end of each sub-topic, users respond to open-ended questions to reflect on the content presented. For example, some of the questions ask how the content presented is relevant to the infant and toddler environment where the user worked or one they have observed. Before completing the post-test, users answer a brief survey related to their satisfaction with the module. Users must complete the module in the order assigned before moving onto the next section of the module.

Course features

CLI Engage offers standalone courses but also provides several other resources (for example, child progress monitoring tools, classroom observation and goal-setting tools) such as additional reading materials and activities that teachers can implement in the classroom.[9] There is no instructor for the CLI Engage courses unless the user is affiliated with the statewide PD program.

The online PD courses are also used in the context of a relationship with a professional development provider in two statewide PD programs in Texas.[10] The courses are used in TSR, which offers coaching support in infant, toddler, and preschool classrooms, and the Texas Infant Toddler Specialist Network (ITSN) uses these courses to guide discussions during interactive Professional Learning Communities (PLCs).

Approach to developing the PD system:

Texas School Ready

The original TSR resources, now disseminated through CLI Engage, were developed through a legislative initiative that asked CLI to demonstrate a high-quality professional development approach.[11] In 2014, CLI launched the CLI Engage platform to disseminate these resources more widely. With continued legislative support, the platform's resources have been revised and expanded over the years. The platform now houses hundreds of hours of coursework, multiple observation and goal-setting tools, child assessment tools from birth through second grade, curricula, and numerous other quality improvement tools. The CIRCLE Infant-Toddler Teacher

Competencies training was designed to follow the same research-based framework as TSR—a focus on competency-aligned online professional development, classroom activities, and tools for monitoring children's progress such as developmental checklists.

Usability pilot

A large-scale usability pilot of the digital tools and resources on the platform involved more than 2,450 teachers from Houston, Dallas, and Fort Worth Independent School Districts (ISDs) in the 2014–2015 school year. According to the developers, this pilot tested the user experience of the platform and ensured it had sufficient capacity to meet the demands of scaling up across the state.[12]

Assessment of competencies:

CLI Engage course assessment

Users engage in a summative multiple-choice post-test at the end of each module. To receive a certificate for completing the module, they must take the post-test and answer 8 of the 10 questions correctly. Users have six attempts to complete the post-test. If they do not receive a passing score after the second attempt, they must wait three days to retake the test. They can go back to the module and review the content at any time.

Observational assessment

Coaches can also assess teachers on the competencies using the Classroom Observation Tool, which allows them to mark observed behaviors as well as observed behaviors that need support.[13] This tool also can be used by coaches to work with teachers and caregivers on setting and meeting goals related to their teaching behaviors.[14]

Micro-credentialing

Additionally, CLI is creating a teacher micro-credential service, in which teachers and caregivers—regardless of whether their program participates in TSR—can submit work artifacts, such as video recordings, that are scored by independent raters.[15, 16] Badges are awarded for individual competencies and micro-credentials are awarded when all competencies in a given area are demonstrated.

Components of the system for different proficiency levels: The system is not tailored to different proficiency levels overall or by competency domains.

Academic credits, certifications, or PD hours

- Continuing Professional Education hours or Child Care Licensing clock hours are available.
- Some courses provide opportunities to purchase continuing education units.
- Certificates of completion available.
- Directors of programs pursuing or renewing Quality Rating and Improvement System (QRIS) certification can track PD completion among staff.[17]

Incentives: Materials reviewed did not include information about the availability of incentives associated with the CLI Engage system.

Additional materials or resources: CLI Engage resources are a part of a broader package of resources offered to TSR participants, which includes state learning guidelines, a print version of the CIRCLE Curriculum, and Classroom Startup and School Readiness Kits.

What is the research behind it?

How research or evidence informs or informed development of the PD system:

Texas School Ready

As CLI Engage describes on its website, the system is a "comprehensive, research-based professional development program for early education teachers that ensures at-risk children receive targeted instruction in critical school readiness skills."[18] The design of the CIRCLE Infant-Toddler Teacher Competencies training was informed by research on the TSR preschool model, which was found to improve teacher and child outcomes.[19, 20]

Texas Core Competencies for Early Childhood Practitioners and Administrators

The Texas Core Competencies for Early Childhood Practitioners and Administrators is informed by existing research. Specifically, as described in the competency framework documents (p. 2), "TELC [Texas Early Learning Council] and THSSCO [Texas Head Start State Collaboration Office] staff worked for over a year researching, drafting, and vetting these Core Competencies. Critical assistance was also provided by the Children's Learning Institute (CLI), as April Crawford, Ph.D., a CLI researcher, served as the primary author of the Core Competencies. Dr. Crawford began the process by reviewing the preferences and notes of the TELC and the TECPDS Council. She then examined many existing state examples throughout the nation, consulted dozens of policy briefs, and reviewed the existing research literature on the subject. Her first drafts were reviewed by the TELC and TECPDS Council, as well as the TELC and THSSCO staff." [21]

Research on the online PD system:

As CLI Engage describes on its website, research on the system "is performed by a large team of experts within the Children's Learning Institute. Their work uses randomized controlled trials (RCTs) and is published in peer-reviewed academic journals after undergoing rigorous evaluation by independent experts in the field."[22]

CIRCLE Infant-Toddler Teacher Competencies pilot

A pilot randomized controlled study on the CIRCLE Infant-Toddler Teacher Competencies was conducted across two large urban southwestern cities during the 2018–2019 school year.[23] Classrooms were randomly assigned to the intervention[24] or business-as-usual condition. The authors found that "toddler teachers who participated in the CIRCLE Infant-Toddler Teacher Training online courses had improved interactions with toddlers" when interactions were assessed with "three separate measures (Arnett Caregiver Interactions, QRIS Caregiver Interactions, and Shared Book Reading Quality)."[25] Effect sizes ranged from 0.55 to 0.85, corresponding to medium to large effects. The intervention showed no main effects on toddlers' language and social-emotional or behavioral skills. The intervention included 38 teachers

working with toddlers from families with low income in Houston, Dallas, and Fort Worth. They received a face-to-face introductory workshop on the content, access to the online PD courses, 24 hours of individualized teacher coaching, and classroom resource kits.

Components of CLI Engage

Research studies have been published on the combination of components in the CLI Engage system, including child progress monitoring, high-quality curricula, and individualized coaching.[26, 27, 28, 29]

There are also two funded research studies in progress on the PD system and tools on the CLI Engage platform.[30, 31]

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[1] Texas School Ready. "TSR Tools and Resources." 2021. Available at https://texasschoolready.org/resources/tsr-tools/.

[2] According to the CLI Engage website (2021a), eligible programs include public school districts in Texas, public charter schools in Texas, Head Start programs in Texas, public higher education institutions in Texas, current Texas Rising Start Certified Providers, current and former TSR participants, child care programs participating in the Texas Infant-Toddler Specialist Network, and programs that agree to send data to the Texas Education Agency's Early Childhood Data System.

[3] CLI Engage. "Partners and Participants." 2021b. Available at https://public.cliengage.org/about/participants/.

[4] CLI Engage (2021a).

[5] Cost information was obtained on February 17, 2022, from https://clisolutionsgroup.org/products/cli-engage-access/.

[6] CLI Engage (2021a).

[7] In personal communication with a representative of the PD system (R. Cummins, February 18, 2022), as of February 2022, CLI is in the process of adding two modules on physical development, one of which is already posted. With those additions, this course includes16 modules and takes 30 hours to complete.

[8] Personal communication with R. Cummins, February 18, 2022.

[9] Personal communication with R. Cummins, February 18, 2022.

[10] Personal communication with R. Cummins, February 18, 2022.

[11] CLI Engage. "History and Mission." 2021e. Available at https://public.cliengage.org/about/history/.

[12] Personal communication with R. Cummins, February 18, 2022.

[13] University of Texas Health Science Center at Houston. "CIRCLE Infant & Toddler Teacher Competencies Observation & Notetaking Form." 2018. Available at https://cliengage.org/clirep/itsn/InfantToddlerTeachingCompetenciesObservationNotetaking.pdf.

[14] University of Texas Health Science Center at Houston. "CIRCLE Infant & Toddler Teacher Competencies Goal-Setting Form." 2018. Available at https://cliengage.org/clirep/itsn/InfantToddlerTeachingCompetenciesGoalSetting.pdf.

[15] Personal communication with R. Cummins, February 18, 2022.

16 CLI Engage. "ECE Specialist Micro-Credentials." 2021f. Available at https://public.cliengage.org/tools/online-learning/ece-specialist-micro-credentials/.

17 Texas Rising Star. "Texas Rising Star Continuous Quality Improvement." 2021. Available at https://texasrisingstar.org/providers/continuous-quality-improvement/.

18 CLI Engage. "Research Support." 2021g. Available at https://public.cliengage.org/about/research/.

19 Crawford, A., T. Zucker, B. Van Horne, and S. Landry. "Integrating Professional Development Content and Formative Assessment with the Coaching Process: The Texas School Ready Model." *Theory Into Practice*, vol. 56, no. 1, December 2016, pp. 56–65. https://doi.org/10.1080/00405841.2016.1241945.

20 Personal communication with R. Cummins, February 18, 2022.

21 Texas Early Learning Council, and Texas Head Start State Collaboration Office. "Texas Core Competencies for Early Childhood Practitioners and Administrators." Houston, TX: Children's Learning Institute at The University of Texas Health Science Center at Houston, March 2013.

22 CLI Engage (2021e).

23 Crawford, A., C. Varghese, Y. Oh, C. Guttentag, T. Zucker, S. Landry, and R. A. Cummins. "An Initial Investigation of the CIRCLE Infant-Toddler Teacher Training for Toddler Teachers." *Early Education and Development,* August 2021, pp. 1–25. https://doi.org/10.1080/10409289.2021.1961427.

24 According to Crawford et al. (2021), the "CIRCLE Infant-Toddler Teacher Training program included (a) training and resources to monitor instructional practices (e.g., Infant/Toddler Competency Observation Tool); (b) three self-guided online courses focused on language, literacy, and social-emotional development that were completed in nine 60-minute sessions; (c) developmental milestone assessments completed by the teacher to inform supports and instruction; (d) kits that contained materials such as implementation calendars, how to guides, and toys for them to use in their classroom; and (e) nine one-hour sessions of individualized remote coaching support."

25 Crawford et al. (2021).

26 Crawford, A. D., T. A. Zucker, J. M. Williams, V. Bhavsar, and S. H. Landry. "Initial Validation of the Prekindergarten Classroom Observation Tool and Goal Setting System for Data-Based Coaching." *School Psychology Quarterly,* vol. 28, no. 4, December 2013, pp. 277–300. https://doi.org/10.1037/spq0000033.

27 Landry, S. H., J. Anthony, P. R. Swank, and P. Monsegue-Bailey. "Effectiveness of Professional Development for Teachers of At-Risk Preschoolers." *Journal of Educational Psychology,* vol. 101, no. 2, May 2009, pp. 448–465. https://doi.org/10.1037/a0013842.

28 Landry, S. H., P. R. Swank, J. Anthony, and M. A. Assel. "An Experimental Study Evaluating Professional Development Activities Within a State-Funded Pre-Kindergarten Program." *Reading and Writing,* vol. 24, 2011, pp. 971–1010. https://doi.org/10.1007/s11145-010-9243-1.

29 In personal communication with the representatives of the PD system (A. Crawford and R. Cummins, February 18, 2022), as of February 2022, CLI is enrolling 100 teachers and caregivers in a pre-post design pilot study of the Infant-Toddler Specialist Network training model, which is primarily focused on the CIRCLE Infant-Toddler Teacher Training. They will examine the impact of teachers' participation in the Infant-Toddler Specialist Network training model on teacher-child interactions, the classroom environment, and children's development as measured by teacher reports. They also plan to collect self-report measures of teachers' stress and self-efficacy, as well as metadata that tracks the completion of courses.

[30] Crawford, A. and C. Varghese. "Building Coaching Capacity: Development of the Core Competencies for Coaching Professional Development Program (C3PD)." 2021. Available at https://ies.ed.gov/funding/grantsearch/details.asp?ID=4591.

[31] Crawford, A., M. Assel, H.Y. Yuan, S. Landry, and T. Zucker. "Examining the Cost-effectiveness of Continuous Improvement Models for Preschool Teachers: Balancing PD Structures to Match Teacher Need." 2018. Available at https://ies.ed.gov/funding/grantsearch/details.asp?ID=2184.

Maine Roads to Quality Professional Development Network

System summary: The Maine Roads to Quality Professional Development Network (MRTQ PDN) is a statewide professional development network that offers a variety of both in-person and online professional development (PD) to support early childhood professionals in providing high quality, inclusive care, education and out-of-school time programs. Components including training, technical assistance, and a professional registry. MRTQ PDN online and in-person trainings include the Core Knowledge Training, which aligns with the Child Development Associate® (CDA®) Competency Standards and is tailored to specific age groups.[1] The competencies are embedded within the Maine Infant Toddler Credential. The system also offers other facilitated and on-demand trainings, with courses such as Caring for Infants, Toddlers, and their Families, as well as a course on the Infant and Toddler Maine Early Learning and Development Standards (MELDS) to help early childhood professionals understand what young children should know and be able to do. All early childhood professionals can enroll in the online trainings, but some aspects of the broader PD offered by MRTQ PDN are available only to teachers and caregivers in Maine.

Links:

- Maine Roads to Quality Professional Development Network, available at https://mrtq.org/
- Center for Community Inclusion and Disability Studies, available at https://ccids.umaine.edu/research-projects/mrtq-pdn/
- Maine Afterschool Network, available at https://www.maineafterschool.org

 Background information

Developer of system: State of Maine Office of Child and Family Services, Department of Health and Human Services

Funder:

- State of Maine Office of Child and Family Services, Department of Health and Human Services
- Private funding[2]

Source: State of Maine Office of Child and Family Services, Department of Health and Human Services

Year developed:

- 1999[3]
- Course content is updated regularly[4]

Cost to use: Some MRTQ PDN on-demand content is freely available to the public after creating a free account on the website. The Core Knowledge Training, which aligns with the CDA® Competency Standards, is $30.[5] The cost for obtaining the CDA® is separate and paid directly to the Council for Professional Recognition, which grants the CDA®.

Availability in another language: No; however, the developer is in the process of translating materials into languages other than English on an individual basis if needed.

Who is it for?

Intended audience:

- In-service teachers and caregivers, administrators, family educators, and support professionals who provide early care and education services in child care, Head Start and Early Head Start, public pre-K, early intervention, or home visiting programs
- Training and technical assistance providers
- Family child care (FCC) providers can filter through relevant courses in the training catalog. Upon filtering through the courses, two are identified: Infant and Toddler Maine Early Learning and Development Standards course and Getting Started in Family Child Care. The latter course does not align with a competency framework.[6]

Audience focus: The system is designed for in-service early childhood professionals.

How is it used?

Alignment with a competency framework and/or observational assessment:

- CDA® competencies
- Maine Infant Toddler Credential

Areas of focus:

- Core Knowledge Training areas, which include:
    – Healthy, safe environments
    – Child Development
    – Developmentally appropriate practice
    – Observation and assessment
    – Guidance
    – Relationships with families
    – Individual and cultural diversity and inclusion
    – Business and professional development

Approach to PD:

Course(s) and time commitment

The Core Knowledge Training is available online and an instructor facilitates the course. MRTQ also offers a catalog of on-demand courses focused on different topics on its platform, each with multiple modules to complete. The courses are self-paced. The Bridge to the Infant and Toddler

Maine Early Learning and Development Standards (MELDS) course is an on-demand course that takes nine hours to complete.

Course format

Participants first respond to a brief, ungraded, multiple-choice pre-test before each module begins. Participants then move on to the interactive training content, which presents narrated videos. At the end of each sub-topic within a module, participants complete a brief knowledge check (such as matching a key term to its definition) before moving to the next. At the end of each module, participants complete a summative self-reflection exercise. For example, they respond to open-ended questions such as which topic(s) they think will be most helpful in their practice, why the topic(s) are important for all people who care for infants and toddlers, what is one way they will share the information they learned with other professionals or community members, and how they plan to share and use the information they learned with families. Participants must complete the modules in the order assigned before moving on to the next section of the module.

Approach to developing the PD system: Materials reviewed did not include any additional information about how the online coursework was developed.

Approach to assessment of competencies: Participants complete a summative, multiple-choice assessment at the end of each module. To receive a certificate for completing the module, they must take the assessment and answer 8 of the 10 questions correctly. There are an unlimited number of attempts for the assessment. Participants can go back to the module and review the content at any time.

Components of the system for different proficiency levels: The system is not tailored to different proficiency levels overall or by competency domain.

Academic credits, certifications, or PD hours:

- Participants receive academic credit or professional education clock hours that can go toward moving up on the MRTQ Registry Career Lattice, meeting training requirements for national accreditation, earning a CDA® Credential™, meeting annual training requirements for Maine Child Care Licensing, or earning a Maine credential.[7, 8] For earning a CDA®, participants must directly apply with the Council for Professional Recognition and meet additional criteria.

- Certificates of completion are available.

Incentives: Materials reviewed did not include any additional information about the availability of other incentives for participating in the competency-based PD. MRTQ PDN has other quality initiatives that offer financial awards.[9]

Additional materials or resources: There are several additional resources available to early childhood professionals located in Maine, including in-person trainings, credential cohorts, communities of practice, and on-site consultations to programs.[10]

What is the research behind it?

How research or evidence informs or informed development of the PD system: Materials reviewed did not include information about how research informed the development of the PD system.

Research on the online PD system: Materials reviewed did not include information about research on the MRTQ PDN system.

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[1] The Council for Professional Recognition issues the Child Development Associate® (CDA®) Credential™.

[2] National Center on Child Care Professional Development Systems and Workforce Initiative (PDW Center). "Professional Development System Overview: Maine." 2014. Available at https://childcareta.acf.hhs.gov/sites/default/files/public/PDW-state-profiles/ME_PD_System_Overview.pdf.

[3] Cutler Institute. "Maine Roads to Quality Career Development Services." 2021. Available at https://usm.maine.edu/cutler/maine-roads-quality-career-development-services-0.

[4] Maine Roads to Quality (MRTQ) Professional Development Network (PDN). "Publications." 2021. Available at https://mrtq.org/publications/.

[5] Cost information was obtained on November 5, 2021, from the MRTQ PDN website.

[6] As stated on the MRTQ PDN website: "This training introduces aspects of opening a family child care business in the home. It covers state certification procedures and addresses the reasons and importance of becoming a family child care provider. This revised curriculum identifies and provides a full array of resources to aid providers in establishing a successful and organized in-home business."

[7] MRTQ PDN. "Training Catalog 2019." 2019. Available at https://mrtq.org/wp-content/uploads/2019/02/Training-Catalog-2019.pdf.

[8] The MRTQ PDN administers the following credentials: Infant and Toddler, Youth Development, Director, Inclusion, and Technical Assistance.

[9] MRTQ PDN. "Quality Initiatives." n.d. Available at https://mrtq.org/quality-initiatives/.

[10] MRTQ PDN. "Infant Toddler Credential." n.d. Available at https://mrtq.org/infant-toddler-credential/.

Virtual Lab School

System summary: Virtual Lab School (VLS) is an online professional development (PD) system originally developed for early childhood professionals working in child and youth programs run by the U.S. military. VLS offers numerous courses for early childhood professionals, with separate tracks for caregivers of infants and toddlers, preschool-age children, and school-age children; family child care (FCC) providers; training and curriculum specialists; and those in management (for example, center directors or assistant directors). Each of the foundational tracks include 15 courses that align with the Child Development Associate® (CDA®) Competency Standards.[1] VLS also offers courses on other topics not aligned with the CDA®. All early childhood professionals can enroll in these online trainings, but some aspects of the VLS online system (such as the ability to create user accounts to track progress) are only available to those working in child and youth programs run by the U.S. military.[2]

Links:

- VLS, available at https://www.virtuallabschool.org/
- VLS webinar, available at https://www.acf.hhs.gov/opre/training-technical-assistance/webinar-responsive-relationships-ece-workforce-improving[3]

Background information

Developer of system: The Ohio State University

Funders:

- U.S. Department of Defense, Office of the Secretary of Defense
- U.S. Department of Agriculture, National Institute of Food and Agriculture

Source: The Ohio State University

Year developed: 2009, with course content updated quarterly[4, 5]

Cost to use: VLS online content is freely available to the public.[6] The cost for obtaining the CDA® is separate and paid directly to the Council for Professional Recognition, which grants the CDA®.

Availability in another language: Not available in another language.

Who is it for?

Intended audience: The VLS system is publicly available to all early childhood and youth professionals, including teachers and caregivers of infants and toddlers, preschool-age children, and school-age children;[7] FCC providers; training and curriculum specialists; and those in management. However, only those employed by military child and youth programs are currently eligible to create a user account for "tracking certifications, progress tracking, and customized

content pertaining to the Service branch that oversees the facilities in which they are employed."[8] Specifically, as VLS describes on its website, "User accounts on the VLS site are available only to individuals employed by military child and youth programs. If you work in a military child and youth program, your trainer, coach, or administrator is responsible for creating and assigning your Virtual Lab School account."[7, 9]

Audience focus: The system is designed for early childhood and youth professionals.

How is it used?

Alignment with a competency framework and/or observational assessment:

- CDA® competencies

Competency domains:

- Areas of focus for all tracks include:
    - Safe environments
    - Healthy environments
    - Learning environments
    - Physical development
    - Cognitive development
    - Communication and language development
    - Creative expression
    - Self and cultural understanding
    - Social and emotional development
    - Positive guidance
    - Family engagement
    - Program management
    - Professionalism
    - Identification and reporting of child abuse
    - Prevention of child abuse

Approach to PD:

Course(s) and time commitment

VLS offers courses for each track (caregivers of infants and toddlers, preschool-age children, and school-age children; FCC providers; training and curriculum specialists; and those in management). All users can engage with the learning materials at their own pace.

Course format

Content is differentiated depending on the track (caregivers of infants and toddlers, preschool-age children, and school-age children; FCC providers; training and curriculum specialists; and those in management). Each area of focus is organized into lessons on individual sub-topics. All lessons follow a Learn, Explore, Apply and Demonstrate (LEAD) format. In the Learn section, users are introduced to the lesson objectives, read the course content, and watch the related videos. In the Explore section, users self-reflect on their own strategies and are given an opportunity to try out the material for the course. In the Apply section, users are given resources or activities to support implementation in their own classroom or program. In the Demonstrate section, users respond to a short, non-graded, multiple-choice quiz based on the lesson objectives and content and receive immediate feedback.[10]

Course features

Registered VLS users (that is, military-affiliated professionals) receive one-on-one support from coaches through reflective practice and supervision. By law, military programs have a training and curriculum specialist; that individual can serve in the coach role and receive support for their role in implementing VLS. VLS has also conducted pilots in community-based settings where they provided the coaches or partnered with a program to train and support a coach.

Approach to developing the PD system: Each course was written by a subject-matter expert who first reviewed relevant research literature.[11] Course outlines and full first drafts were reviewed in multiple rounds by internal and external subject-matter experts and the U.S. Department of Defense's Office of Military Family Readiness Policy. Coursework is also reviewed frequently for relevant updates.

Assessment of competencies: As noted above, after each lesson, users complete a short, non-graded, multiple-choice quiz on the content in the Demonstrate section of the lesson. After completing the lessons for each area of focus, users also fill out a competency reflection form, on which they self-assess their competencies, using a 1 for emerging, 2 for developing, and 3 for mastered. The self-assessment is organized into four sections: (1) competencies that are directly observable during the participant's typical workday; (2) competencies that can be assessed through conversations with a trainer, coach, or administrator; (3) environmental evidence in the classroom; and (4) concluding reflections in which the participant comments on their overall strengths in the area of focus, ways they would like to strengthen their practices, and their plans to achieve these goals.

To earn a VLS certificate, professionals must (1) correctly complete the Demonstrate quiz questions in each lesson, (2) adequately complete all required activities within each lesson, receiving feedback and support from their coach, (3) pass the end-of-course knowledge assessment, and (4) display adequate foundational competency as determined by the coach's reflection on observations of and conversations with the teacher or caregiver. As a reminder, only military-affiliated professionals and professionals in non-military programs partnering with VLS to pilot materials can earn a VLS certificate at this time. For military-affiliated and VLS-partnered users, successful completion of a full VLS foundational track and relevant focused topics courses can be used for the 120 professional education clock hours necessary to apply for the CDA®.

Components of the system for different proficiency levels: The system is not tailored to different proficiency levels overall or by competency domain.

Academic credits, certifications, or PD hours: CDA® clock hours are available for military-affiliated professionals only.[12, 13] Users must directly apply with the Council for Professional Recognition and meet additional criteria.

Incentives: Upon completion of the course, military-affiliated users receive a higher job classification and greater compensation. The VLS system does not offer other incentives for non-military-affiliated users.

Additional materials or resources: An end-of-course assessment comprising a series of short-answer and essay-based questions to assess mastery of the material is available only to registered VLS users. As it describes on its website, VLS is "actively exploring ways to offer this new approach to professional development" to all VLS users in the future.[14]

 What is the research behind it?

How research or evidence informs or informed development of the PD system: As VLS describes on its website, the course content "combines research on child development, effective teaching practices, and principles of adult learning."[1] Additionally, VLS regularly updates course content based on its continuous review of the latest research and best practices.[15]

Research on the online PD system:

Pilot study of online PD with coaching

VLS conducted a pilot study of online PD with coaching to prepare teachers for their CDA® in late 2019.[2] Caregivers of infants, toddlers, and preschoolers had access to the courses and worked with coaches, "who observe/model practices and offer feedback on VLS course activities and assessments."[2] The research team partnered with their local municipality and centers in the area and provided coaches to support teachers.[16] The pilot sample included 77 teachers, 41 of whom were infant and toddler teachers, located in Ohio. For infant and toddler teachers, the developers conducted a preliminary examination of pre- and post-test scores on assessments for five courses: Child Abuse Identification and Reporting, Child Abuse Prevention, Professionalism, Learning Environments, and Positive Guidance.[10] Preliminary results from a one-way analysis of variance indicated that post-test scores were statistically significantly higher than pre-test scores (p-values = .001 to .05).[2] For the full sample, the developers found that "coaches reported in their debrief forms, which were completed after every coaching session, that they were increasingly able to use reflective questioning and focus on at least 3 of the teacher's strengths as they built relationships with participants."[2]

Social-emotional learning course hosted on the VLS platform

A research study also assessed a social-emotional learning course for teachers hosted on the VLS platform.[17] The course, Social Emotional Learning for Teachers (SELF-T), also followed the same LEAD format across all VLS lessons. Sixty-three center-based teachers of infants, toddlers, and preschoolers completed a brief, online course on stress management and resiliency practices. Teachers "completed pre-and post-surveys to assess their knowledge of stress and stress reduction, use of prevention strategies, use of emotion regulation strategies, self-reported stress, and their social and emotional responsiveness to children." At the end of

the intervention, teachers showed greater knowledge of stress, stress reduction and use of prevention strategies, and use of reappraisal emotion regulation, but they also reported higher levels of personal stress and negative reactions to children's emotions. VLS is currently conducting a pre-post design pilot of the tracks and courses in a community-based setting.[10, 18]

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[1] The Council for Professional Recognition issues the Child Development Associate® (CDA®) Credential™.

[2] Virtual Lab School (VLS). "About VLS." 2021a. Available at https://www.virtuallabschool.org/about.

[3] Lang, S. N., R. Odean, E. Tebben, and C. K. Buettner. "Examining VLS Momentum: Pairing Online PD with Coaching to Prepare Teachers for Their CDA®." Presentation at the Society for Research in Child Development 2021 Biennial Meeting. In "Responsive Relationships in the ECE Workforce: Improving Knowledge and Care for Young Children." OPRE Report #2021-228. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research, and Evaluation. Session recording. April 8, 2021a, 19:57–40:01. Available at https://www.acf.hhs.gov/opre/training-technical-assistance/webinar-responsive-relationships-ece-workforce-improving.

[4] VLS. "News." 2021b. Available at https://www.virtuallabschool.org/news.

[5] Ohio State University. "Enhancement of the Virtual Lab School, A Comprehensive Professional Development System for Childcare Professionals." 2020. Available at https://portal.nifa.usda.gov/web/crisprojectpages/1023792-enhancement-of-the-virtual-lab-school-a-comprehensive-professional-development-system-for-childcare-professionals.html.

[6] Cost information was obtained on September 29, 2021, from the VLS website.

[7] The School-Age track is for those in center-based before- and after-school and summer-based programs that serve children ages 5 to 12.

[8] VLS. "Account Registration Availability." 2021c. Available at https://www.virtuallabschool.org/support/articles/user-registration-availability.

[9] By law, military programs have a training and curriculum specialist; that individual can serve in the coach role and receive support for their role in implementing VLS.

[10] Personal communication with K. Knight and S.N. Lang, February 15, 2022.

[11] Personal communication with S.N. Lang, February 15, 2022.

[12] VLS. "Certificates." 2021d. Available at https://www.virtuallabschool.org/support/articles/certificates.

[13] As stated on its website, VLS is "exploring options to provide professional development and certification capabilities to a wider audience, including partnerships with state and local educational institutions." VLS instructs federal, state, or municipal entities interested in partnering with VLS to contact VLS directly via email (support@virtuallabschool.org; https://www.virtuallabschool.org/support/articles/user-registration-availability).

[14] VLS. "FAQs." 2021e. Available at https://www.virtuallabschool.org/support/faqs.

[15] VLS. "VLS Support Articles and News." 2021f. Available at https://www.virtuallabschool.org/focused-topics/using-the-vls-coaching-to-enhance-practice/lesson-1/act/24086.

[16] Personal communication with S.N. Lang, August 5, 2022.

[17] Lang, S.N., L. Jeon, E.B. Sproat, B.E. Brothers, and C.K. Buettner. "Social Emotional Learning for Teachers (SELF-T): A Short-Term, Online Intervention to Increase Early Childhood Educators' Resilience." *Early Education and Development*, vol. 31, no. 7, April 2020, pp. 1112–1132. https://doi.org/10.1080/10409289.2020.1749820.

[18] Ohio State University. "Post Doctoral Researcher." 2021. Available at https://osu.wd1.myworkdayjobs.com/en-US/OSUCareers/job/Columbus-Campus/Post-Doctoral-Researcher_R31986.

We Grow Together

System summary: The We Grow Together (WGT) Professional Development (PD) System aims to improve the quality of caregiving in early childhood settings by helping caregivers of infants and toddlers 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 Care for Infants and Toddlers (QCIT; formerly Quality of Caregiver-Child Interactions for Infants and Toddlers [Q-CCIIT]) observational measure.[1, 2]

Links:

- We Grow Together: The Professional Development Tools for Improving Quality for Infant and Toddler Care, available at https://www.acf.hhs.gov/opre/project/professional-development-tools-improve-quality-infant-toddler-care-q-cciit-pd-tools

- Experiences with We Grow Together, a Professional Development System to Support Caregiver-Child Interactions for Infants and Toddlers, available at https://www.mathematica.org/events/experiences-with-we-grow-together

- We Grow Together webinar, available at https://www.acf.hhs.gov/opre/training-technical-assistance/webinar-responsive-relationships-ece-workforce-improving[3]

Background information

Developer of system: Mathematica

Funder: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research, and Evaluation (OPRE)

Source: Mathematica

Year developed: 2015[4]

Cost to use: Not available for purchase at this time.

Availability in another language: Not available in another language.

Who is it for?

Intended audience: WGT seeks to engage infant and toddler teachers and caregivers in center-based classrooms and family child care (FCC) settings, in both Early Head Start and community-based settings. The system is not publicly available yet, although training on the aligned QCIT measure is available from Mathematica.

Audience focus: The system is designed for in-service teachers and caregivers of infants and toddlers.

How is it used?

Alignment with a competency framework and/or observational assessment:

- Quality of Care for Infants and Toddlers (QCIT)[1]
- WGT was also crosswalked with other frameworks[5] including:
    – Child Development Associate® (CDA®) competencies[6]
    – Collaborative for Understanding the Pedagogy of Infant/Toddler Development (CUPID) Draft competencies for the infant/toddler workforce[7]
    – ZERO TO THREE Critical Competencies for Infant-Toddler Educators[8]

Competency domains:

- Support for social-emotional development
- Support for language and literacy development
- Support for cognitive development

Approach to PD:

Course format and time commitment

The WGT system is organized into nine web-based modules designed to support the three competency domains embedded in the QCIT. The modules are further organized into key practices that enable caregivers to explore skills and exercise new caregiving techniques. Each key practice highlights specific tools as either recommended for all teachers and caregivers, or supplemental. The modules introduce and demonstrate each key practice to provide shared understanding of WGT foundational principles and practices. The level of intensity and duration needed to learn a key practice varies with the complexity of that practice. Caregivers spend as much time as they need to work on a key practice within a module.

Course features

The WGT system provides teachers and caregivers with an array of tools, including videos, handouts, and presentations with voiceovers, based on competencies in the QCIT. Users can also download and print the content and other related materials. Handouts are available to share with colleagues, supervisors, and families to ensure the entire caregiving team is involved in supporting and using the key practices. Checklists and open-ended questions on the WGT website offer support for monitoring collaborative progress, self-reflections, and feedback.

The tools are intended for use in the context of a trusting PD provider and caregiver relationship. That is, local PD providers support caregivers as they implement practices intended to promote infant and toddler development. PD providers have access to all caregiver tools in addition to their own PD provider tools. In the field test, local PD providers used QCIT scores to direct caregivers to specific modules, which can be found on the caregiver's individualized home page. Caregivers work with the trained PD provider to select key practices as goals within each module and select tools that support their learning. Caregivers work with their PD provider to develop an action plan, review the materials, try implementing the practice

in their setting, perhaps video recording their use of the practice, and discussing with the PD provider.

Approach to developing the PD system: Mathematica first conducted a literature review[9] to summarize tools and approaches that aim to improve the quality of care for infants and toddlers. It focused on "the most promising methods and approaches for enhancing caregiver interactions with young children." The review focused particularly on care for young children in center-based, home-based, and FCC settings.

As described by the authors of the WGT field test final report[4]: "The literature review noted the emergence of several key findings related to the overall development of PD strategies—and the tools for implementing those strategies—particularly germane to this project. These literature review findings informed the development of the project's conceptual frameworks, the suite of WGT tools, and the approach to the field test."

After developing the WGT resources and the online PD system, the WGT developers and OPRE designed a field test to implement and examine the use of WGT in real-world settings during fall 2018 to spring 2019 across 10 geographical areas spanning 12 states and the District of Columbia.

Assessment of competencies:

WGT course assessment

Caregiver self-assessment checklists are available for each of the modules. The checklists present teachers and caregivers with a list of practices related to the competencies and ask them to respond to whether they used any of the practices in the past week with the following options: did not do it, sometimes did it (a few times), often did it (daily or more), or usually did it (multiple times throughout each day). Self-reflection activity questions based on videos ask users about specific interactions with children, such as how they showed interest in what children were doing and examples in the video of caregivers responding to children.

Observational assessment

An independent observer can also use the QCIT to assess teachers' and caregivers' competencies because the tools align with the practices in the QCIT.

Components of the system for different proficiency levels: The system is not tailored to different proficiency levels overall or by competency domain. However, in the WGT field test[4], the WGT system recommended three WGT modules to teachers and caregivers based on their baseline QCIT scores. The system also encouraged PD providers to recommend specific resources based on the caregiver's skills, goals, and learning preferences.

Academic credits, certifications, or PD hours: Users do not earn academic credits, certifications, or PD hours based on the WGT system.

Incentives: The WGT system does not offer other incentives.

Additional materials or resources: The QCIT observational tool[1] with which this system aligns is an additional resource. Mathematica developed the observational tool with funding from OPRE to measure the quality of caregiver–child interactions for infants and toddlers in nonparental care.

What is the research behind it?

How research and evidence inform or informed development of the PD system:

Literature review

A literature review[10] informed the development of the WGT system. The review aimed to include "recent reviews and meta-analyses conducted within the past 10 years, the websites of leading PD and research organizations, database searches for empirical studies published during the past 10 years, and expert and Office of Planning, Research, and Evaluation (OPRE) input." The literature review findings informed the development of the WGT conceptual framework, the suite of tools, and the approach to the field test.

QCIT

Research also informed the QCIT, with which WGT aligns. The QCIT was validated in a psychometric field test of 400 classrooms across different child care settings.[1, 10] Using classical and item response theory approaches, the developers demonstrated the strong reliability and validity of the QCIT. The developers also showed that the QCIT was sensitive to change in the WGT field test.[4] That is, QCIT scores improved over the course of a four-month professional development intervention with infant and toddler teachers and caregivers.

Research on the online PD system:

WGT pre-post field test

Using a pre-post design, Mathematica conducted the field test of the WGT PD system during fall 2018 and spring 2019 with pairs of caregivers and PD providers (271 caregivers received PD from 168 providers).[4] These field test participants remained in the field test as of March 1, 2019, eight weeks after implementation began. Their settings included 214 center-based classrooms and 57 FCC classrooms; 105 classrooms were Early Head Start and 166 were community-based classrooms. Based on the ages of the children on the day of the fall classroom observations, there were 68 infant classrooms and 146 toddler classrooms in center-based settings.

The field test descriptively examined the characteristics of the participants in the field test and the tools and supports that helped them use the responsive caregiving principles covered by WGT to improve caregiver–child interactions. The field test also examined whether early childhood professionals could use WGT to support change in beliefs, knowledge, or practice concerning infants and toddlers.

Three research briefs detail the field test findings on PD experiences,[11] implementation,[12] and caregiver beliefs, knowledge, and practices.[13, 14] Caregivers benefited from having a trusting relationship with their PD providers. Additionally, caregivers who reported having a previous coaching relationship with their PD provider reported having a more positive goal-setting experience.[11] In terms of implementation, time was the most frequently noted barrier to participating WGT.[12] Finally, caregivers reported a change in their ability to be effective in providing care for infants and toddlers, as well as their beliefs about children's language

development as a result of participating in WGT. Caregivers also improved in their support for social-emotional development as measured by the QCIT. Dosage, measured by the number of WGT pages opened, was related to the overall quality of caregiver-child interactions as measured by the QCIT.

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[11] Li, A., S. Atkins-Burnett, and T. Nguyen. "We Grow Together Professional Development System: Professional Development Exper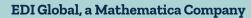iences in Infant-Toddler Care." OPRE Report #2021-157. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research, and Evaluation, 2021.

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