Illinois Children's Healthcare Foundation

RFP for School District Participation in TCIT-U

This RFP invites proposals to initiate a second implementation of Teacher-Child Interaction Training-Universal (TCIT-U) in Illinois. In April 2020, an Illinois public school district ($20,000 grant) or two adjacent districts ($30,000 grant) will be selected to implement TCIT-U beginning in summer 2020. The plan is to select an additional district or two additional districts to begin a third round in summer 2021.

Illinois Children's Healthcare Foundation (ILCHF) is partnering with LearnVentures, LLC, and Loyola University Chicago to strengthen teachers' positive impact on the social-emotional and behavioral learning of young children in their classrooms. Toward this end, ILCHF will support three Illinois public school implementations of a manualized, train-the-trainer, professional development model for teachers designed to improve both children's behavioral outcomes and teachers' skills and confidence in interacting with children. The model is Teacher-Child Interaction Training – Universal (TCIT-U), which is designed for teachers and classroom support staff of children **pre-K through second grade.** TCIT-U was initially developed in Illinois and has been successfully implemented in eight other States in the U.S.

In 2019, ILCHF awarded the first grant to Glenview School District 34 in Glenview, Illinois. This school district started training in the TCIT-U model in June 2019. The model is now being implemented and evaluated in 10 classrooms in Glenview.

Teacher Child Interaction Training – Universal (TCIT-U)

TCIT-U is a professional development program that strengthens teachers' positive relationship and classroom management skills through a sustainable Train-the-Trainer approach. TCIT-U is adapted from Parent-Child Interaction Therapy (PCIT), a widely used and extensively researched intervention for children two to seven years old with disruptive behavior problems. TCIT-U applies the positive relationship and behavior management principles shown to be effective with children and their parents in PCIT to teacher-child interactions in an educational setting. **TCIT-U helps teachers promote children's social-emotional development (e.g., sustained attention, task completion and self-regulation), decrease challenging behaviors and prevent disruptive behaviors from emerging.** As a universal prevention approach, TCIT-U benefits all children in the classroom rather than only those identified as having behavior problems. Once TCIT-U is established in a classroom setting, components of the intervention can be applied on an individual or small-group basis for children who have specialized needs as part of their Individualized Education Program.

Train-the-Trainer model

TCIT-U's Train-the-Trainer approach is designed to equip qualified education professionals with the expertise to implement TCIT-U successfully after completing training. Typically, these staff

are school psychologists, social workers, counselors, or behavioral health or early education coordinators employed by the school district.

Participants in the TCIT-U training are trained to become part of their local TCIT-U team, consisting of trainers and coaches. Each local team member can function as either a trainer or a coach depending on their educational background (see TCIT-U Training Guidelines). As a coach, a team member can coach teachers in the TCIT-U skills. As a trainer, a team member can deliver didactic TCIT-U training and coach teachers.

LearnVentures trains local staff to build an effective, well prepared TCIT-U training team through a sequence of activities over a 12 to 18 month period:

- Two one-hour pre-workshop introductory sessions for up to eight local TCIT-U trainers and coaches
- Initial four-day workshop for up to eight local TCIT-U trainers and coaches
- Two on-site visits during delivery of TCIT-U by the local training team with one cohort of teachers (up to four teachers per local trainer and/or coaches with a maximum of 32 teachers)
- Review and discussion of teacher and child progress and problem-solving in monthly consultation calls
- Competency checks showing understanding and skills at delivering TCIT-U with fidelity
- Delivery of TCIT-U by the local site training team with a second cohort of teachers either in the spring of the first year or in the following fall, again with monthly video and phone consultation.

The Train-the-Trainer model builds a foundation for sustainability and financial value of the school district's professional development initiatives by preparing local school staff as TCIT-U trainers and coaches. The local training team will be able to continue to provide training to existing and newly hired teachers, thereby expanding the number of children impacted by TCIT-U. Each of member of the local training team can coach up to four additional teachers per subsequent semester.

Key findings from TCIT-U research

Evaluations of the model over time have demonstrated:

- Positive changes in teachers' use of observed skills
- Teacher ratings of child behavior show significant improvement
- Higher levels of teacher skill change is associated with overall higher child protective factor scores
- Teachers report high satisfaction and increased self-efficacy
- Public school personnel successfully implement TCIT-U at levels similar to researchers

See additional information about the resources needed for implementation of TCIT-U starting after page five and at the TCIT-U website - www.tcit.org/

Application Process

ILCHF is releasing this RFP to identify one Illinois school district or two adjacent Illinois school districts to participate in the second round of this project. ILCHF will provide a $20,000 stipend for one district or $30,000 to be shared between two districts to provide support toward equipment, evaluation assessment material and the cost of substitute teachers. Criteria for a district to be considered for participation in this TCIT-U demonstration project include:

1) The school district or districts must be in the state of Illinois. If two districts want to submit a joint application they must be in close physical proximity. It will be necessary for participating staff to convene in a common space on a regular basis for on-going training of local trainers and coaches and for training/coaching of teachers.

2) The district(s) must have at least one elementary schools with a district-owned, pre-K program.

3) The district(s) must be able to commit time for up to eight school staff total meeting the TCIT-U Training Guidelines (see attached document) to be trained as local TCIT-U trainers and coaches. If two districts are partnering for this project, a total of eight school staff are required with either 4 teachers from each district or 3 from one district and 5 from the other district who must participate in the initial summer training to establish the local teams in each district. Training entails an initial four-day workshop in the summer, delivery of training and individualized coaching during the school year and additional training activities to gain competence in delivering TCIT-U effectively. See Estimated Time Commitment During Training and Post-Training worksheets provided with additional documents after page five.

4) The district(s) must be able to commit teacher and staff time as needed to receive training from local trainers and coaches who will be trained by LearnVentures. TCIT-U training/coaching of teachers entails a total of 12 hours of group didactic training (four three-hour blocks) plus individualized coaching of teachers over ten to 12 weeks or until teachers meet proficiency criteria. See Estimated Time Commitment During Training and Post-Training worksheets provided with additional documents after page five.

5) The district(s) must be able to provide access to pre-K through second grade age children during the summer workshop. Ideally, the workshop will take place during a summer school session and the lead school administrator for the TCIT-U initiative and/or designee will be present to facilitate students being available to work with training participants.

6) The district(s) must participate in the evaluation by providing relevant, de-identified and abstracted student and staff data to the evaluation team and engaging in limited on-site or phone interviews with the evaluation team. TCIT-U has built-in methods for collecting data that are used for monitoring ongoing use of the training strategies and assessing teacher and student changes. This project will include some additional data collection, such as administrative data and interviews with school staff, to help further understand the impact of the training and how it is implemented in a school district. A focus will be placed in the

evaluation on identifying any improvement in student's learning as a result of the teachers' changes in classroom interactions and behavior management.

7) The district(s) must work with Loyola University Chicago in obtaining Institutional Review Board (IRB) and district approval for evaluation purposes.

Application questions

Below are a set of questions for districts to respond to in order to be considered.

1) Name of the district(s) and lead contact person.

2) Names of schools in the district(s) with pre-K through second grade classrooms.

3) For each school named in question two provide the number of pre-K through second grade classrooms and the total number of children at each grade level.

4) Number of eligible school staff (pre-K through second grade teachers and non-teaching support personnel) to receive TCIT-U training to be trainers and coaches in the eligible schools (see TCIT-U Training Guidelines).

5) Please provide a summary description of the demographics of the student population and other important features of the communities served by the district(s).

6) Describe current challenges facing the school district(s) that prompt interest in TCIT-U training and the objectives you hope to accomplish through this professional development initiative.

7) How will you select the school staff to be trained as local TCIT-U trainers and coaches starting in June or July 2020? What criteria and/or strategy will guide your selection process? (see TCIT-U Training Guidelines)

8) How will you select the first cohort of classroom teachers to receive the training and coaching from the local TCIT-U team?

9) How will you use existing personnel or infrastructure to provide de-identified student data to the evaluation team?

10) Besides working with Loyola to obtain IRB approval, are there additional steps you will need to take to ensure district-level approval for participation in the evaluation?

11) What additional new learning demands may be active for your staff and teachers while participating in the TCIT-U training during the 2020-2021 school year?

12) How will you ensure participating school personnel will have the time to participate?

13) How will you make sure that the costs of participating in this TCIT-U project are covered? See list of estimated local agency/school contribution to TCIT-U implementation on page two of the Training and Implementation Plan document attached after page five.

14) If you are submitting an application for two districts, describe experience the districts have working together particularly in the area of teacher professional development.

Application submission instructions

A link to the on-line application system can be found at ilchf.org under "Open RFPs" (https://ilchf.org/rfp-archive/). In addition to addressing the questions listed above, you will be asked to attach the following documents:

a) Budget worksheet: Budget narrative to support worksheet will be asked for in the online application. Please refer to the estimated local contribution section in the additional documents after page five for a list of necessary items.
b) Officers certification
c) Most recent financial audit report
d) List of School Board Members for the district
e) For applications with partnered districts, a letter of agreement between the districts delineating how the districts will work together to execute the plan. Include details regarding funding, staffing, leadership and implementation.

Templates for the Budget and Officers Certification can also be found at ilchf.org under "Open RFPs" (https://ilchf.org/rfp-archive/).

Timeline for Application and Program Implementation for 2020 to 2021 School Year

→Applications are due February 28th, 2020.

→The anticipated project start date for this second round is May 15th, 2020.

Please contact Matt Thullen at ILCHF if you have any questions.
Phone: (630) 571-2555
Email: mattthullen@ilchf.org

Teacher-Child Interaction Training
A Universal Model (TCIT-U)

PROFESSIONAL DEVELOPMENT FOR EDUCATORS AND MENTAL HEALTH PROVIDERS

Karen S. Budd, PhD and David Stern, LICSW

WHAT is TCIT-U?

Teacher-Child Interaction Training Universal, or TCIT-U, is a professional development program for strengthening teachers' relationship skills to promote children's social-emotional development. TCIT-U is adapted from Sheila Eyberg's Parent-Child Interaction Therapy, an evidence-based treatment for children aged 2-7 years with disruptive behavior. TCIT-U incorporates the core principles and goals of PCIT while attending to the unique dynamics of the classroom. We call our model TCIT-U to emphasize its universal prevention focus, application to the whole classroom, and inclusion of both teachers and classroom support staff in training. Research on TCIT-U has shown the promise of this approach as a universal intervention from mainstream across the continuum of special education settings in preschool and elementary classrooms. More details and a video example of TCIT-U in action are at www.tcit.org

GOALS OF TCIT-U:

- ☐ Strengthens positive teacher-child interactions
  - ◘ Promotes positive, nurturing emotional relationships
  - ◘ Increases teacher's use of effective behavior management techniques
  - ◘ Enhances children's pro-social skills, attachment, and self-regulation
  - ◘ Decreases disruptive and attention-seeking behaviors
- ☐ Increases teachers' confidence in dealing with challenging classroom behavior and reduces teacher burnout

WHAT SKILLS DO TEACHERS LEARN IN TCIT-U?

- ☐ Child-Directed Interaction (CDI)
  - ☐ **P**raise
  - ☐ **R**eflect
  - ☐ **I**mitate
  - ☐ **D**escribe
  - ☐ **E**njoy!

  ↓ Negative Talk
  ↓ Unnecessary Questions and Commands
- ☐ Teacher-Directed Interaction (TDI)
  - ☐ Praising the opposite
  - ☐ Effective commands and following through
  - ☐ "Sit and watch" for hurting others or repeatedly not listening

HOW ARE TEACHERS TRAINED IN TCIT-U?

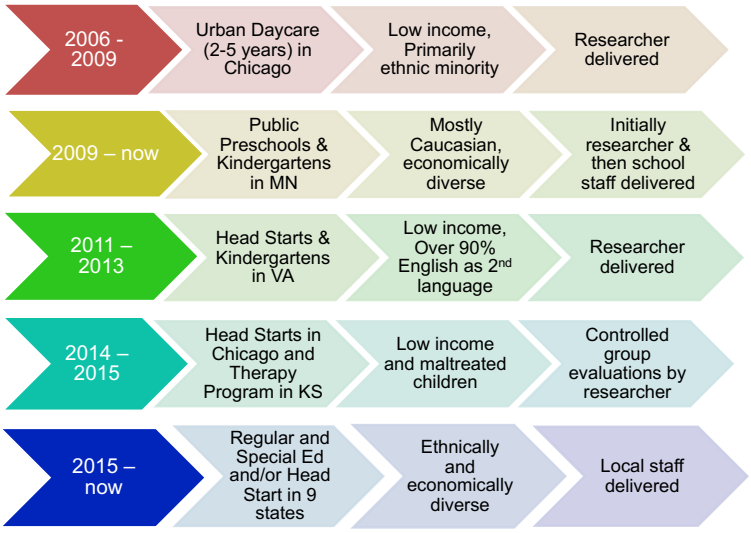
Teachers gain proficiency in specific relationship skills through a combination of (a) group didactic and practice-based strategies, and (b) individualized behavioral coaching sessions while interacting with children in routine classroom activities. Teachers have said that the immediate feedback and support they receive in using the skills during coaching is what really helped to solidify their skills. TCIT-U entails a total of 12 hours of group didactic training plus individualized coaching of teachers over 10-12 weeks or until teachers meet proficiency criteria. Once TCIT-U is established in a classroom setting, components of the intervention can be applied on an individualized basis for children who have specialized needs as part of their IEP.

TCIT-U'S PROFESSIONAL DEVELOPMENT MODEL:

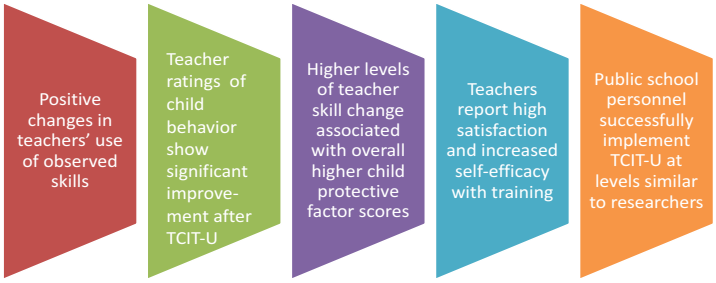
Our training is designed to achieve three goals:

- **Doable** – teachers learn and implement the skills
- **Effective** – teacher training leads to positive student outcomes
- **Sustainable** – schools are able to continue implementing the program after training

Research and field testing from 2006 to the present shows that TCIT-U's model meets these goals.



Key Findings from TCIT-U Research



TCIT-U's **Train-the-Trainer approach** is designed to equip education and mental health professionals with the expertise to implement TCIT-U successfully after completing training. We train local staff as **TCIT-U trainers and coaches** to build an effective, well prepared TCIT-U Site Training Team through a sequence of activities over a 1- to 2-year period:

- Initial 4-day workshop
- On-site visits during delivery of TCIT-U with one group of teachers
- Review and discussion of teacher and child progress and problem-solving in consultation calls through delivery of TCIT-U with a second group of teachers
- Competency checks showing understanding and skills at delivering TCIT-U with fidelity

We also offer **Advanced Training** to experienced TCIT-U trainers to build increased program capacity.

TCIT-U TRAINING OPPORUTNITIES

For more information about TCIT-U, visit our website at **www.tcit.org.** School and health administrators interested in considering adoption of TCIT-U should contact **karensbudd@gmail.com** or Dave Stern at **dstern2257@gmail.com** for more information about on-site training.

Training and Implementation Plan
Teacher-Child Interaction Training – Universal (TCIT-U) Train-the-Trainer Program
SAMPLE FOR SCHOOL DISTRICT WITH 9-MONTH ACADEMIC YEAR

PROJECT GOALS AND IMPLEMENTATION TIMELINE:

LearnVentures' TCIT-U Train-the-Trainer program is designed to equip education and mental health professionals with the expertise to implement TCIT-U successfully with teachers, teaching assistants, and other school personnel. We train staff as **local TCIT-U trainers and coaches** to build an effective, well prepared TCIT-U Training Team at their local site through a sequence of activities over a 1- to 2-year period. This table shows a typical timetable for activities. Two options are displayed for Cohort 2, indicated by a and b.

Quarters (3 months)	Spr 2020	Sum 2020	Fall 2020	Win 2021	Spr 2021	Sum 2021	Fall 2021	Win 2022	Spr 2022
Pre-planning	x								
TCIT-U Initial Trainer/Coach Workshop (plus 2 pre-training video sessions)		x							
Cohort 1 Pre-training assessment			x						
Cohort 1 CDI Didactic Days 1 & 2 and weekly coaching			x						
Cohort 1 TDI Didactic Days 1 & 2 and weekly coaching			x	x	x				
Cohort 1 Post-training assessment					x				
Cohort 2 Pre-training assessment				a			b		
Cohort 2 CDI Didactic Days 1 & 2 and weekly coaching				a			b		
Cohort 2 TDI Didactic Days 1 & 2 and weekly coaching					a		a/b	a/b	b
Cohort 2 Post-training assessment								a	b
Project evaluation and future planning									x

PROJECT ACTIVITIES:

Preparation and Initial Workshop Training of Local Trainers and Coaches by Master Trainers

- Up to 8 trainees meeting eligibility criteria in TCIT-U Training Guidelines
- Two (2) 1-hour pre-workshop group video conference sessions with all trainees
- Four (4) full days of onsite workshop training at local setting, typically in summer
- Requires access to local school site(s) for practice coding, coaching, and applying skills with children in classrooms during workshop

Continuation Training -- CDI and TDI Training Visits by Master Trainers

- Onsite visits during CDI and TDI didactic training with 1st cohort of teachers, up to 32 teachers, classroom assistants, and resource personnel (maximum of 4 teachers per coach); training conducted by local TCIT-U Team with consultation by Master Trainers
- Three (3) full days for CDI phase and two (2) full days for TDI phase, typically in fall
- Approximately 5-6 weeks between CDI and TDI didactic training

Monthly Consultation – Video Conference Sessions with Master Trainers

- 1-hour group consultation session each month with local TCIT-U Team for planning and logistics, addressing questions, reviewing data, problem-solving implementation issues, monitoring fidelity and trainee acquisition of skills, and planning next steps
- Consultation continues throughout delivery of TCIT-U with two cohorts of teachers

Video Reviews of Trainee Skills by Master Trainers

- Detailed feedback on five (5) videos submitted by each trainee on core TCIT-U skills

ESTIMATED LOCAL AGENCY/SCHOOL CONTRIBUTION TO TCIT-U IMPLEMENTATION:

Pre-post assessment of children in TCIT-U classrooms (Devereux measures – DECA-P2, DESSA, or DESSA-mini) (DECA p-2 www.kaplanco.com/devereux#Devpreschool Email: lmejias@kaplanco.com, DESSA or DESSA-mini www.ApertureEd.com Email: Delaney Brown, dbrown@Apertureed.com, Sales Coordinator Social Emotional Learning)

Teachers' Sense of Efficacy Scale (instrument available for download and copying at no charge at http://wmpeople.wm.edu/site/page/mxtsch/researchtools)

Remuneration to teachers for completing pre-post assessments – optional

Bug-in-the-ear equipment – 1 set per coach ($140-200/set or higher depending on model; Movo WMIC70 Wireless 48-Channel UHF Lavalier Microphone System with Omni-Lav, available from Amazon)

Training conference room with wi-fi, video playback and LCD capability

Clipboards with digital timer for coaches (optional)

Refreshments for 4 workshop training days for coaches

Refreshments for 4 didactic training days for teachers

Substitute teachers for 4 didactic training days

Copying charges for evaluation forms, pre-training exercises, coding forms, etc. up to 200 copies

For further information, please contact Karen Budd (karensbudd@gmail.com) or Dave Stern (dstern2257@gmail.com)

Estimated Time Commitment during TCIT-U Training
for Lead Trainers and Coaches
Karen S Budd, PhD and David Stern, LICSW, LearnVentures LLC

Time Period	Activity
Summer	Initial workshop training for lead trainers and coaches (4 full days, access to children needed to practice skills) Two 1-hour video conference sessions on observational coding system held 1-2 weeks prior to the workshop training, plus 2 hours pre-reading
Fall	Collect 1-3 pre-training observations on teacher skills in classroom (2-4 teachers per coach @ 20 mins per observation -- includes time for data collection and data entry)
Cohort 1 – Teacher Training, begins fall semester	CDI didactic training (3 days) -- includes practice and delivery of 3-hour CDI Day 1, initial coaching session with teachers, practice and delivery of 3-hour CDI Day 2, and on-site consultation with Master Trainers TDI didactic training (2 days) -- includes practice and delivery of 3-hour TDI Day 1, practice and delivery of 3-hour TDI Day 2, and on-site consultation with Master Trainers Coach 2-4 teachers @ 30 mins/week for each teacher x 20 weeks (5 months) or until teachers reach mastery in TCIT-U skills (includes time for observation, coaching, feedback, and data entry)
Cohort 2 – Teacher Training, begins spring semester or fall of next academic year	CDI didactic training -- preparation and delivery of CDI Day 1 and CDI Day 2 (3 hours each plus 2 hours preparation time) TDI didactic training -- preparation and delivery of CDI Day 1 and CDI Day 2 (3 hours each plus 2 hours preparation time) Coach 2-4 teachers @ 30 mins/week for each teacher x 20 weeks (5 months) or until teacher reaches mastery in TCIT-U skills (includes time for observation, coaching, feedback, and data entry)
TCIT-U team meetings	Monthly team meetings @ 1 hour each x 12 months
Video consultation with TCIT-U Master Trainers	Monthly calls @ 1 hour each x 12 months Preparation of 5 videos on skill use and review/coding

Project coordination by lead school administrator for TCIT-U initiative and/or designate:

- Orientation to TCIT-U for school staff and parents
- Arrange for pre & post data collection (e.g., Devereux measures, Teacher Sense of Efficacy form, and Teacher Evaluation forms) in coordination with the Loyola research team
- Coordinate monthly team meetings with TCIT-U lead trainers and coaches @ 1 hour/month x 12 months
- Participate in monthly calls with Master Trainers @ 1 hour/month x 12 months

Estimated Time Commitment Post Training for TCIT-U Implementation
by Lead Trainers and Coaches
Karen S Budd, PhD and David Stern, LICSW, LearnVentures LLC

Time Period	Activity
Fall	Collect 1-3 pre-training observations on teacher skills in classroom (2-4 teachers per coach @ 20 mins per observation -- includes time for data collection and data entry)
Cohort 1 – Teacher Training, begins fall semester	CDI didactic training – preparation and delivery of 3-hour CDI Day 1 and 3-hour CDI Day 2 TDI didactic training -- preparation and delivery of 3-hour TDI Day 1 and 3-hour TDI Day 2 Coach 2-4 teachers @ 30 mins/week for each teacher x 20 weeks (5 months) or until teachers reach mastery in TCIT-U skills (includes time for observation, coaching, feedback, and data entry)
Cohort 2 – Teacher Training, begins spring Semester or in fall of next academic year	CDI didactic training -- preparation and delivery of 3-hour CDI Day 1 and 3-hour CDI Day 2 TDI didactic training -- preparation and delivery of 3-hour TDI Day 1 and 3-hour TDI Day 2 Coach 2-4 teachers @ 30 mins/week for each teacher x 20 weeks (5 months) or until teacher reaches mastery in TCIT-U skills (includes time for observation, coaching, feedback, and data entry)
TCIT-U team meetings	Monthly team meetings @ 1 hour each x 9 months

Project coordination by lead school administrator for TCIT-U initiative and/or designate:

- Orientation to TCIT-U for school staff and parents
- Arrange for pre & post data collection and analysis (e.g., Devereux measures, Teacher Sense of Efficacy form, and Teacher Evaluation forms) at discretion of school district
- Coordinate monthly team meetings with TCIT-U lead trainers and coaches @ 1 hour/month x 9 months

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ORIGINAL PAPER

Collaborating with Public School Partners to Implement Teacher–Child Interaction Training (TCIT) as Universal Prevention

Karen S. Budd[1] · Lauren L. Garbacz[1] · Jocelyn S. Carter[1]

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Abstract This study expands on prior work investigating the transferability of parent–child interaction therapy, an efficacious treatment program targeting parents of children with disruptive behavior problems, for use as a universal preventive intervention targeting classroom teachers. Using a case study design, Teacher–Child Interaction Training (TCIT) was implemented sequentially with two groups of teachers ($N = 20$) and 169 preschool and kindergarten students in a public school setting. This study served as a pilot test for the feasibility of having local school staff independently implement TCIT, following training and participation in an initial delivery of TCIT conducted by a research team. Controlling for teacher effects, teacher ratings of children's total protective factor scores (TPF) significantly increased and ratings of behavior concerns (BC) significantly decreased over the course of the intervention. Boys and students qualifying for special education received lower TPF and higher BC ratings at baseline, yet interactions with time were nonsignificant, suggesting that all students improved according to teacher ratings across time. Observational data showed that teachers in both researcher-delivered and local staff-delivered groups substantially increased in their use of positive attention skills following training. Intervention effects, as well as program implementation factors (e.g., teacher attendance, homework completion), were comparable across researcher and school-based staff deliveries, suggesting that school staff were able to implement TCIT effectively. We discuss future research directions for TCIT implementation and development, as well as practical considerations for partnering with school systems.

Keywords Teacher–child interaction training (TCIT) · Early childhood · Teacher–child relationships · Implementation · Universal prevention

Introduction

Children's early experiences set the stage for their future development. Among the most significant contexts for children's social experiences outside the family environment are early care and education settings, where children's relationships with teachers have a strong influence on their behavior. Positive teacher–child relationships in early childhood have been associated consistently with adaptive outcomes for children, whereas negative relationships have been linked to maladaptive outcomes, including poorer grades, less interest in school, and more behavioral and discipline problems (Birch & Ladd, 1997; Buyse, Verschueren, Doumen, Van Damme, & Maes, 2008; Curby, Rudsasill, Edwards, & Perez-Edgar, 2011; Hamre & Pianta, 2001; Mashburn et al., 2008). Research on associations between teacher-child relationships and children's social and cognitive skill development has fueled policy initiatives to strengthen teacher preparation in positive relationship and classroom management skills and to provide training for those already in the workforce (Institute of Medicine & National Research Council, 2012; Pianta, Belsky, Houts, & Morrison, 2007). This study piloted the feasibility of training local school practitioners to implement Teacher–Child Interaction Training (TCIT), a promising approach designed to enhance teachers' relationship skills and, in turn, strengthen young children's social–emotional behavior in early childhood classrooms.

✉ Karen S. Budd
kbudd@depaul.edu

[1] Department of Psychology, DePaul University, Chicago, IL 60614, USA

Rationale for Early Childhood Prevention Programs

Longitudinal research suggests that for 50 % or more of children who display disruptive behaviors in early childhood, the problems will continue in later school age years (Bennett et al., 1999; Shaw, 2013). However, predicting *which* children will experience sustained problems is difficult so early in children's development (Carter, Briggs-Gowan, & Davis, 2004). Thus, it is important that all teachers, not only those serving children with identified difficulties, be equipped with skills to foster children's development and promote children's adaptive skills within the classroom environment.

Universal *preventive* interventions have the potential to strengthen the development of all children, including those at risk due to poverty, family stress, learning difficulties, or early behavior problems (Durlak & Wells, 1997; Wilson & Lipsey, 2007). Meta-analyses of school-based, universal prevention programs designed to strengthen children's social and emotional learning have found that well-designed, well-implemented programs benefit children in multiple areas, including boosting academic achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Greenberg et al., 2003). Programs using teachers as the primary intervention agents enhance children's skills within the relational context of teacher–child interactions by integrating the program into the classroom routine and across the whole classroom (Han & Weiss, 2005). Examples of evidence-based prevention programs for early childhood settings include the Chicago School Readiness Project (Raver et al., 2009), which provides teacher training, stress reduction workshops for teachers, and one-on-one, child-focused mental health consultation; teacher training and technical assistance initiatives such as CSEFEL (Center on the Social and Emotional Foundations for Early Learning, http://csefel.vanderbilt.edu/about.html) and My Teaching Partner (Hamre et al., 2012; Pianta, Mashburn, Downer, Hamre, & Justice, 2008); and curriculum-based programs such as PATHS (Promoting Alternative Thinking Strategies) to teach children social skills (Domitrovich, Cortes, & Greenberg, 2007).

Collaborating with Local School Partners on Program Implementation

Reviews of implementation studies in educational and other settings (e.g., Durlak & DuPre, 2008; Fixsen, Blase, Duda, Naoom, & VanDyke, 2010) have found that the extent and quality of implementation affect outcomes. A central tenet of several conceptual frameworks for implementation in real-world settings is that effective implementation requires close collaboration between program personnel (i.e., trainers, researchers, or consultants) and school practitioners throughout the design, implementation, and evaluation phases (Han & Weiss, 2005; Wandersman et al., 2008). Community psychologists have long promoted collaborative approaches as essential to facilitating intervention buy-in and engagement by consumers (Trickett & Espino, 2004). Several factors have been identified as important for increasing teachers' implementation fidelity and the sustainability of quality program implementation (e.g., Forman, Olin, Hoagwood, Crowe, & Saka, 2009; Han & Weiss, 2005). These include school policies and priorities directly linked to the program's objectives; support from the school director/principal; teachers' judgments of the acceptability of the program prior to its implementation; high-quality training that includes classroom practice and performance feedback; and programs that are feasible and practical for schools to continue with minimal, but sufficient, resources. Limited research has been conducted on models for local implementation of promising programs in early childhood settings (e.g., Baker, Kupersmidt, Voegler-Leeb, Arnold, & Willoughby, 2010; Shernoff & Kratochwill 2007). In an effort to promote such research, the National Association for the Education of Young Children (NAEYC) and the Society for Research in Child Development (SRCD) issued a position statement calling for implementation research as a priority in early childhood education (NAEYC & SRCD, 2008).

Teacher–Child Interaction Training (TCIT)

The program of interest in the present study is Teacher–Child Interaction Training (TCIT), designed to enhance relationship and behavior management skills in classroom teachers (Gershenson, Lyon, & Budd, 2010). TCIT was adapted from Parent–Child Interaction Therapy (PCIT), an evidence-based intervention for children ages 2–7 with disruptive behavior problems (Eyberg & Child Study Lab, 1999; Eyberg & Funderburk, 2011). The conceptual groundwork for TCIT, as for PCIT, is in theories of child development, social learning, and adult–child attachment (Zisser & Eyberg, 2010). Numerous PCIT outcome studies have demonstrated the positive effects of this parenting intervention on child behavior and on the parent–child relationship (Thomas & Zimmer-Gembeck, 2007).

Analogous to PCIT, TCIT includes two phases: Child-Directed Interaction (CDI), during which teachers learn skills in positive and responsive communication, and Teacher-Directed Interaction (TDI), during which teachers learn to provide effective instructions, follow through consistently, and implement a structured discipline procedure for serious misbehavior. As in PCIT, target skills are introduced first to teachers in didactic sessions, followed by several coaching sessions in which teachers receive immediate,

in vivo feedback on their use of target skills during teacher–child interactions. Coaching has increasingly been recognized as an effective strategy for promoting uptake of skills in professional development programs for teachers (Schultz, Arora, & Mautone, 2015), and research in PCIT has demonstrated the functional role of coaching in parents' acquisition of skills (Shanley & Niec, 2010). Another standard element of both PCIT and TCIT is behavioral observation of the parent's or teacher's use of target skills during adult–child interactions at the beginning of each coaching session. These data inform which skills to work on during coaching and provide a record of skill acquisition.

TCIT applications share PCIT's conceptual frame and key features but have varied in target populations and procedural details (such as hours spent in didactics and coaching, format of coaching, and specific skills taught). Reviews of TCIT studies provide preliminary support that TCIT is beneficial in increasing positive teacher attention, reducing negative attention, and, in some cases, decreasing children's disruptive behavior (Fernandez, Gold, Hirsch, & Miller, 2015b; Gershenson et al., 2010). Whereas most TCIT research to date has employed uncontrolled single case designs or multiple baseline designs, a study using random assignment to TCIT or a no-TCIT control condition and entailing more classrooms than in prior studies demonstrated positive changes in teacher behavior, reduced teacher distress, and high teacher satisfaction with TCIT (Fernandez et al., 2015a). Most TCIT research (e.g., Campbell et al., 2010; Fernandez et al., 2008; Filcheck, McNeil, Greco, & Bernard, 2004; McIntosh, Rizza, & Bliss, 2000) has focused on children who have identified behavior problems; however, two studies (Fernandez et al., 2015a; Tiano & McNeil, 2006), in addition to those discussed below, delivered TCIT as a whole classroom approach. Although both studies reported positive effects of TCIT on teacher behavior, Tiano and McNeil (2006) found no significant effects on student behavior, and Fernandez et al. (2015a) found only small effects on child behavior. Both studies used a problem-based measure of student behavior and reported low baseline levels of disruptive behavior, which may have affected the opportunity to detect change. These findings point to the need for further research on TCIT's impact on child behavior when implemented across the whole classroom.

The current study further investigated TCIT's feasibility as a whole classroom approach using a universal prevention model. Universal TCIT's goals are (1) to equip teachers with skills in positive attention and consistent discipline, such that they can confidently handle child behavior challenges in their classrooms; and (2) to increase children's social-emotional adjustment, thereby enhancing children's behavioral and academic success (Lyon et al., 2009b). The universal TCIT model was initially studied with 12 teachers and 78 preschool-aged children at an urban daycare center in large, Midwestern city. Using a multiple baseline design across four classrooms, Lyon et al., (2009b) demonstrated systematic increases in teachers' observed use of target skills in classroom interactions, and teachers rated the program highly in consumer evaluations. This research found some reductions in teachers' skill use at 2-month follow-up, suggesting the need for booster training. Further, the generally low level of behavior problems prior to intervention may have precluded detection of significant differences following intervention in teacher ratings of child behavior using a problem-based inventory (Lyon, Budd, & Gershenson, 2009a). In a universal TCIT replication with 12 teachers in four early childhood classrooms in the same daycare setting, Garbacz, Zychinski, Feuer, Carter, and Budd (2014) examined the effects of teacher skill change on teacher ratings of child behavior using a standardized, strength-based measure. Results showed significant positive changes in teacher ratings after intervention. In addition, higher levels of teacher skill change, based on systematic observations of teacher–child interactions, were associated with greater teacher-rated improvements in child behavior (Garbacz et al., 2014). Universal TCIT also was implemented with five preschool teachers and 38 children, most of whom spoke English as a second language, in two elementary school classrooms (Devers, Rainear, Stokes, & Budd, 2012). Using a multiple baseline design across classrooms, the authors demonstrated positive changes in observed teacher skills concomitant with intervention. Observations of disruptive behavior in a subgroup of students nominated as challenging by their teachers showed variable levels of disruptive behavior across the study, with generally reduced levels by the end of intervention.

These studies offered preliminary support for the universal model of TCIT and, together with the extensive evidence base behind PCIT, provided a foundation for the model's further development. Of particular interest in this study was whether local school practitioners could be trained to deliver TCIT. Based on the implementation research described earlier, it was presumed that training local school staff could increase TCIT's potential for sustainability. The opportunity to carry out the current research arose when the staff of a public school district requested training in TCIT. Whereas in prior TCIT applications, researchers outside the school setting served as trainers, this study is the first to investigate training local school staff to deliver TCIT.

The decision to proceed with an effectiveness study of TCIT using school practitioners at this juncture might be considered premature given limited evidence of the efficacy of child behavior change from TCIT. However, Garbacz et al. (2014) found significant improvement in child behavior following TCIT when using a strength-based measure, which provides initial evidence of a positive impact of classroom-wide TCIT intervention on students. Further, reports of the challenges of scaling up evidence-based programs for

implementation under real-world conditions (Durlak & DuPre, 2008; Evans & Weist, 2004) provide reason for caution about presuming the transferability of efficacy findings to practice settings. This realization has called into question the traditional path of developmental science (i.e., laboratory to efficacy trials to effectiveness trials to dissemination) as an exclusive model. Instead, some researchers and policymakers have recommended the value of research that is embedded from the outset in the "messy reality" of the community context (Dodge, 2011). The current study reflects this alternative path by piloting implementation of TCIT in a public school setting despite the nascent state of the TCIT literature.

The purpose of this research was to provide a preliminary test of the feasibility of having local school staff implement TCIT independently with a second group of teachers after they had participated in initial training delivered by outside researchers. Specifically, we tested two hypotheses: (a) Teacher ratings on a standardized strength-based measure in both the researcher-delivered and local school staff-delivered groups will demonstrate perceived improvement in children's protective factor and behavioral concerns scores across the intervention period; and (b) Teachers in both groups will show significant increases in observed skill use concomitant with intervention. Due to pragmatic constraints, this study did not include a controlled experimental group design. Instead, repeated observations of teachers' classroom behavior and teacher ratings of child behavior provided an initial test of the effects of intervention using a case study design.

Method

Setting

Research activities took place in a public school district composed of an early childhood center and six elementary schools serving children from preschool to sixth grade in a Midwestern city of 12,000 residents. Group trainings for participating teachers were conducted in a school conference room, and individualized coaching was conducted in the teachers' classrooms.

Participants

Principals at participating elementary schools were asked to identify preschool and kindergarten teachers who were respected by their peers and were representative of the teachers employed there as potential study participants, and these teachers were invited to participate. Paraprofessional assistants and resource staff in those classrooms also were invited to participate. All those invited to participate agreed to do so. Approximately 25 % of the eligible teaching staff at each school took part in the study.

Two groups of teachers and children participated in the study, which was approved by the university's Institutional Review Board. The Fall group consisted of eight teachers and 56 children, and the Spring group consisted of 12 teachers and 113 children. In addition, five staff members (e.g., resource teacher, special education teacher, principal) who had expressed interest in the TCIT model sat in as observers on the Spring group training sessions, but they did not receive coaching and were not included as research participants. Teachers provided informed consent for their data to be included in the study prior to participation. Informed consent was not sought for the children's participation because no identifiable data were collected on the children.

The 20 teachers included eight lead teachers, nine paraprofessional assistants, and three resource staff (e.g., speech/language pathologist, occupational therapist, special education teacher) who provided instruction in the classrooms. Demographic information on the teachers can be found in Table 1. Teachers received continuing education credits for their participation in TCIT, but they were not paid for their participation or completion of measures.

Child participants, aged 3–6 years, were 55 % male and were evenly split (50 %) between early childhood programs and kindergarten classes. Twenty-two percent of children in the sample received special education services. Individual child ethnicity data were not obtained for confidentiality purposes. The school district reported that in the schools targeted by the intervention, 95–97 % percent of children were Caucasian, 1–3 % African American, 0–1 % Hispanic, and 0–1 % Asian. Between 30 and 47 % of students in the target schools received eligibility for free or reduced lunch.

Trainers

The trainers for the Fall group were TCIT research staff (a doctoral level psychologist and a master's level social worker) who had extensive training and experience delivering PCIT and TCIT. The trainers for the Spring group were the director of special education, coordinator of behavioral health services, and a social worker, each of whom had advanced degrees in a mental health field and were employed full time by the school district. The local school staff interacted regularly with teachers and children as part of their job responsibilities.

Training of Local School Staff

Joint planning for the TCIT implementation occurred during a series of conference calls between the researchers and local administrative school staff in the summer before

Table 1 Teacher demographic data

	Fall ($n = 8$) (%)	Spring ($n = 12$) (%)
Teacher characteristics		
Gender		
Female	100	100
Male	0	0
Ethnicity		
Non-hispanic white	100	100
Other	0	0
Education		
Master's degree (e.g., M.S., M.Ed.)	25	25
Some graduate courses	25	0
Bachelor's degree	25	42
Associate's degree	25	8
Some college	0	25
	M (*SD*)	*M* (*SD*)
Age		
Mean	38.00 (11.23)	40.17 (5.07)
Range	27–55	23–55
Years of experience		
Mean	9.00 (4.93)	6.50 (11.46)
Range	3–15	1–15

the academic school year in which the study was conducted. As background for learning the TCIT model, the three school staff who served as trainers for the Spring group participated in a 1-week PCIT training workshop 1 month prior to beginning the study. The TCIT researchers travelled to the study site on three occasions in the fall to deliver TCIT to a group of local teachers. The local school staff observed and assisted with group sessions and individual coaching of teachers during the Fall training sequence. In between researchers' visits, the local school staff conducted coaching sessions with teachers in their classrooms. In the Spring, the local school staff delivered TCIT on their own to a separate group of teachers, consulting with the researchers via conference calls twice per month. At the end of the academic year, the researchers and school staff met to review study findings.

Measures

DECA

The Devereux Early Childhood Assessment (DECA; LeBuffe & Naglieri, 1999) is a 37-item behavior rating scale developed for assessment of social–emotional strengths and behavioral concerns in young children. Each questionnaire typically takes five minutes for teachers to complete. Teachers rated children's behavior on a five-point Likert-type scale ranging from 0 (*never*) to 4 (*very frequently*) to indicate how often within the past 4 weeks a child exhibited various behaviors. The same rater (the lead classroom teacher or teaching assistant) assessed the same children at each time point.

Children's positive behavior was assessed with 27 items loading onto a Total Protective Factors (TPF) scale. The TPF includes items that load onto three subscales: Initiative, Self-Control, and Attachment. Scores on the three subscales are summed to yield a Total Protective Factors score, with higher scores indicating stronger levels of protective factors. Questions begin with the stem: "During the past 4 weeks, how often did the child…" Sample items include: "choose to do a task that was challenging for her/him," "handle frustration well," and "act happy or excited when parent/guardian returned?"

Raters also assessed children's problem behaviors on a 10-item behavioral concerns screener, with higher scores indicating more disruptive or problematic behaviors. The BC scale includes items such as "fight with other children" and "have temper tantrums." Internal consistency reliability within the current study's sample was acceptable across all time points on each scale: TPF ($\alpha = 0.86$–0.96), and BC ($\alpha = 0.78$–0.89). The DECA has demonstrated good reliability and validity in several independent psychometric studies and with national standardization samples (Chain, Dopp, Smith, Woodland, & LeBuffe, 2010). Table 2 shows mean raw scores for each rating scale for Fall and Spring groups.

The DECA was selected as a child behavior measure based on prior research showing its sensitivity to TCIT

Table 2 Mean raw scores for pre-, post-, and follow-up DECA rating scales

Variable	Baseline			Post-intervention			Follow-up[c]		
	M	SD	Range	*M*	SD	Range	*M*	SD	Range
Fall[a]									
TPF	56.48	11.77	28–80	66.09	15.97	24–99	69.43	12.68	24–88
BC	7.32	5.12	0–21	6.57	4.65	0–24	6.63	4.93	0–26
Spring[b]									
TPF	78.69	14.80	38–107	84.24	15.29	44–108	84.24	15.29	44–108
BC	8.24	6.70	0–31	7.06	5.87	0–21	7.06	5.87	0–21

TPF total protective factor scale, *BC* behavioral concerns scale

[a] $n = 56$

[b] $n = 113$

[c] Fall group follow-up occurred 13 weeks after post-intervention time point. Spring group follow-up occurred 4 weeks after post-intervention time point when school year ended

intervention (Garbacz et al., 2014) and because the DECA's strengths-based measurement of social-emotional functioning is ideally suited to this study. Few protective measures of child behavior for the classroom have been developed, and no alternative measures with strong psychometric support were identified. However, of the 169 participants in the current study, nine children in the Fall group and 15 in the Spring group (total of 24) were over 6.0 as of the beginning of the school year and an additional 23 in the Spring group had turned six before their baseline, thus placing them outside the age range on which this version of the DECA was normed. A *t* test comparing the 47 total children over six to the 122 under six at their baseline was nonsignificant for TPF and BC at baseline. For this reason, and in order to represent the entire sample of children exposed to intervention, all children were included in the analyses. Raw scores were used in the analyses to allow for more meaningful modeling of change over time and because some children fell outside the age range for standardized scores.

Teacher Observations

Individual teachers were observed in their classrooms for 5-min behavioral samples an average of one to two times per week. For the Fall group, observers included the two researchers and three local school staff who were learning to become TCIT trainers. For the Spring group, only the three local school staff conducted observations. Observers collected between 2 and 10 behavioral samples on each teacher per phase. Variability in number of teacher observations was typically a result of teachers' availability and scheduling constraints. In addition, more observations were collected on the Fall group due to having both researchers and school staff as observers. Observations took place across a variety of activities, including circle time, free play, group and individual table activities, and transition periods. During baseline observations, teachers were asked to engage in their typical behavior toward children. After TCIT began, teachers were asked to practice using their TCIT skills during observations, most of which occurred immediately prior to coaching sessions.

Observers used a modified version of the Dyadic Parent–Child Interaction Coding System (DPICS-III; Eyberg, Nelson, Duke, & Boggs, 2005) to record teacher behaviors targeted by the intervention. Coded behaviors included Behavioral Descriptions (BD; e.g., "You're coloring a picture"); Reflections (RF; e.g., a child states, "I'm coloring a tree!" and the teacher responds, "You're coloring a tall, strong tree!"); Labeled Praises (LP; e.g., "Thank you for putting your crayons away."); Unlabeled Praises (UP; e.g., "Great job!"); Questions (QU; e.g., "What is the first letter in your name?"); and Negative Talk (NTA; e.g., "Stop coloring on the table."). Observers also recorded commands, follow-through with commands, and child compliance during the second phase of intervention; however, these behaviors were not formally examined as part of the research. Observers tallied teacher behaviors using frequency counts in 5-min observational periods. Observer training in the coding system for the local school staff occurred as part of initial PCIT workshop training and consisted of review of the abridged DPICS-III manual, administration of quizzes from the DPICS-III workbook, and completion of practice observations. Additionally, the researchers provided school staff with practice using the coding system during classroom observations immediately prior to beginning the Fall group.

In 57 % of total observations during the Fall group, two observers (typically one researcher and one local school staff) independently coded target behaviors to assess inter-observer agreement. Reliability for observations was calculated based by comparing frequency counts for individual teacher behaviors coded during a 5-min observation and computing the percent agreement. Nonoccurrence of behavior for an entire 5-min period was not counted as

agreement and thus did not count toward the reliability index except for Negative Talk, which had a very low base rate. Inter-observer agreement based on reliability observations was as follows: Behavior Descriptions = 0.75, Reflections = 0.81, Labeled Praises = 0.74, Unlabeled Praises = 0.60, Questions = 0.70, and Negative Talk = 0.64. Levels of agreement (0.75–0.81) for the three behaviors of primary research interest, Behavior Descriptions, Reflections, and Labeled Praises, were considered acceptable. No reliability data were collected during the Spring group; however, the trainers for this group had already established reliability with the researchers during the Fall.

Engagement and Satisfaction

Indices of training participation included teacher attendance at group training sessions, number of CDI and TDI coaching sessions completed per teacher, and amount of daily homework practice completed per teacher. Teachers also provided anonymous consumer satisfaction ratings on a Teacher Evaluation Form along six dimensions, each of which was rated on a five-point (0–4) scale, ranging from *strongly disagree* (0) to *strongly agree* (4). Dimensions measured included the extent to which (a) the trained skills were useful, (b) training helped the teachers feel more effective in their jobs, (c) the activities utilized in training were helpful to solidify the material, (d) the presenters were knowledgeable, (e) training was organized and clear, and (f) training was useful. All measures used in the current study, including the DECA, the teacher observational coding system, and consumer satisfaction measure, were identical to the versions used in the Garbacz et al. (2014) implementation.

Procedure

The study consisted of four phases: baseline (2–3 days), child-directed interaction (CDI) (approximately 1 month), teacher-directed interaction (TDI) (approximately 1 month), and follow-up (1–3 months). For both groups, teacher observations were collected in baseline, CDI, and TDI phases. Teachers completed a DECA measure for each child at four time points in the Fall group and at three time points for the Spring group: at the beginning of baseline phase, following the completion of the CDI phase (Fall group only), following the completion of the TDI phase, and at follow-up. The follow-up time point for DECA assessment occurred 3 months after the intervention ended for the Fall group and 1 month after the intervention ended for the Spring group due to the ending of the school year. For both groups, consumer satisfaction forms were completed four times across the study: after CDI group sessions, at the end of the CDI phase, after TDI group sessions, and at the end of the TDI phase.

Teacher Training Sequence

The timeline, number, and length of TCIT group sessions varied slightly for the two groups of teachers. For the Fall group, the researchers travelled to the site to conduct training on three adjacent days for the CDI phase, returned for 3 days 1 month later for the TDI phase, and returned again 1 month later for a graduation session. The Fall group teachers attended seven group sessions (three CDI, three TDI, and one graduation) lasting a total of 17 h. For the Spring group, professional development days were used for some sessions. Teachers attended five group sessions, including two CDI and two TDI sessions, and a graduation session, for a total of 12 h. The second TDI session was scheduled for small groups of two to three teachers rather than as a large group (in order to accommodate teachers who came from four different schools). For both Fall and Spring groups, when a teacher missed a session (which was rare), one of the trainers met with the teacher during the following week to cover missed material.

For both groups, one of the trainers met with each of the teachers for individualized coaching sessions in the classroom lasting approximately 20 min. Coaching began after the first CDI group session and occurred an average of 1–2 times per week for teachers in the Fall group and an average of 1 time per week for teachers in the Spring group over the course of 3–4 weeks. TDI coaching sessions began after the first TDI group session and continued for 3–4 weeks until graduation. During the Fall group, the researchers conducted the initial coaching sessions while the local school staff observed. Next, the local school staff took over the coaching responsibility while the researchers observed and provided mentoring, after which the local school staff began to conduct coaching sessions independently. During the Spring group, the local school staff were responsible for conducting all coaching sessions.

TCIT Protocol

The TCIT protocol was adapted from the PCIT treatment manual. A detailed explanation of the changes made to the PCIT protocol is available elsewhere (Gershenson et al., 2010; Lyon et al., 2009b); therefore, only a brief description of the content and procedures is provided here. In didactic sessions, trainers followed a written manual as they taught the conceptual basis for TCIT and the target skills using modeling, descriptive handouts, and role-plays, in which teachers practiced using the skills in simulated teacher–child interactions. Teachers also were assigned to complete homework, which consisted of practicing the skills for 5 min per day in the classroom and recording examples of their use. As in PCIT, the skills covered in the CDI segment were introduced using the acronym PRIDE. Specifically, teachers

learned to provide labeled *Praise* for the child's appropriate behavior; *Reflect* the child's speech by repeating, paraphrasing, or expanding upon a child's words or phrases; *Imitate* appropriate behaviors by engaging in the same activities as the child; *Describe* the child's current appropriate behavior; and convey *Enthusiasm* when interacting with children. Teachers also learned to reduce unnecessary questions and commands, selectively ignore inappropriate behavior, and refrain from negative talk.

The TDI phase focused on effective use of behavior management strategies, including direct commands and consistent follow-through. Teachers learned to implement a "Sit & Watch" procedure (Lyon et al., 2009b; Porterfield, Herbert-Jackson, & Risley, 1976) in their classrooms as a consequence for serious disruptive or unsafe behaviors. Teachers followed a scripted procedure for instructing a child to *sit* on a chair placed at the periphery of the activity area and *watch* how the other children played appropriately. The specific behaviors leading to Sit and Watch, as well as the length of time children sat and watched, was collaboratively determined by teachers in each classroom during a planning session; however, the recommended time was 1 min.

Individual coaching sessions took place during natural classroom situations, such as during lessons with an individual child, small group activities, or whole class instruction. Trainers coded teachers' skill use during the first 5 min of coaching sessions to assess skill progress and establish a focal point for coaching based on the skills with the lowest observed frequency during coding. For the next 10–15 min, trainers provided immediate verbal feedback and support as the teacher interacted with children. During coaching, trainers used labeled praise (e.g., "Great reflection!") to pinpoint and reinforce teachers' use of skills as situations occurred (e.g., "Perfect job of following through with labeled praise when she did what you asked"). On occasion, trainers selectively prompted teachers about an opportunity to use a skill (e.g., "Notice how well Jamie and Sara are sharing. What could you say to reinforce this behavior?" or during TDI, "Give him a direct command to come back to the table"). Coaches also commented on children's behavior in relation to teacher behavior (e.g., "You're really keeping them engaged with your positive attention"). Immediately following most coaching sessions, trainers met with teachers briefly (3–5 min) to discuss the session or to solve problem about individual children's behavior when necessary.

Data Analysis

All analyses were conducted using SPSS statistical software, version 20. We used longitudinal multilevel modeling (MLM; Singer & Willett, 2003) to account for the nested design of children within classrooms and to examine growth rates across multiple measurement points for teacher-reported measures of behavior. Multilevel modeling is well suited for longitudinal analyses when there are three or more waves of data, and when measurement occasions are not evenly spaced, as was the case in the current study. Multilevel modeling requires less stringent assumptions to be met than repeated measures analysis of variance (Singer & Willett, 2003).

Models were built separately for each scale on the DECA, i.e., protective factors (TPF) and BC. First, unconditional models were tested without any predictor variables in order to compute the intraclass correlation coefficients (ICCs). ICC refers to the amount of variance in individual child outcomes that is explained by teacher-level variables. The between-teacher ICC for the total score of the TPF scale was 4 % and for the BC scale was 0.7 %. Although the ICC for the BC scale indicated nonsignificant variance contributed by the teacher level, we included teacher as a covariate for the TPF and BC scales in order to facilitate more consistent comparisons among models for the two scales. In the current study, the time variable was re-centered to simplify the interpretation of the time variable (Singer & Willett, 2003). The time variable was coded in weeks so that week 0 equals the participants' initial status at the time the intervention began. No other variables were centered. Restricted maximum likelihood estimation was used to estimate parameters in the current study due to the relatively small sample size (Bickel, 2007).

Three MLM models were built; they were the same for both outcome variables. We entered the time variable at level 1. In all models, time slopes were allowed to vary randomly as repeated measures random effects. Effects of teachers were represented by including teacher as a level-2 covariate. Child demographic variables (i.e., gender, special education status) and wave (i.e., Fall, Spring) were entered as level-2 variables. Child gender, special education status, and wave were all dummy coded with male, no special education services, and Fall as the reference groups.

In model 1, we investigated the effects of time on DECA ratings at baseline, mid-intervention (for Fall group), post-intervention, and follow-up. In model 2, we examined demographic variables (i.e., child gender and special education status) as predictors of variance for time on DECA ratings. In model 3, we added intervention wave (i.e., Fall or Spring) as a predictor of variance for time on DECA ratings while retaining demographic variables as fixed effects. Nonsignificant interaction variables (time by demographic factors) from model 2 were dropped from model 3 in an effort to retain the most parsimonious model.

Table 3 Results from MLM analyses for TPF ratings

	Model 1	Model 2	Model 3
Fixed effects			
Intercept	83.43 (2.53)***	80.16 (3.51)***	80.75 (3.52)***
Time	0.51 (0.04)***	0.51 (0.04)***	0.42 (0.07)***
Male		−4.57 (1.80)**	−4.57 (1.79)**
No special ed.		5.76 (2.20)**	5.77 (2.19)**
Wave			−36.16 (3.50)***
Wave*time			0.14 (0.10)
Model fit statistics			
Deviance	4006.99	3985.58	3986.14
AIC	4022.99	4001.58	4002.14
BIC	4057.51	4036.07	4036.62
Pseudo r^2	0.56	0.60	0.60

Standard errors are in parentheses. For ease of presentation, fixed effects for teachers and random effects for repeated measures of time are not reported in table. Pseudo r^2 = proportional reduction in variance

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Results

Changes in Child Ratings over Time

Only 1 % of data were missing, and they were missing at random resulting from participants skipping over items on the questionnaires. Missing data were imputed through linear regression using the multiple imputation command in SPSS 20. All assumptions for linearity and normal distribution of the dependent variable in repeated measures multilevel modeling were met. MLM estimates, standard errors, beta coefficients, and effect sizes for each of the DECA scales are presented in Tables 3 and 4. The intercept represents the raw score for each scale at baseline. Model 1 tested whether change occurred over the course of the intervention in teacher-rated child behaviors on each of the two DECA scales. Controlling for teacher variance, a significant positive coefficient for time indicated significant increases in TPF scale ratings across the intervention ($\beta = 0.51$, $p < .001$). A significant negative coefficient for time showed significant decreases in BC scale ratings across the intervention ($\beta = -0.05$, $p = .001$). Results for model 1 demonstrated linear change over time in the expected directions for teacher ratings of child behaviors during the intervention period. Random slopes also indicated significant residual, unexplained variance across time points for TPF and BC.

In order to explore additional contributions to variance in teacher scores, in model 2 we added child demographic variables, specifically gender and special education status. Controlling for teacher, time remained significant for TPF and BC when adjusted for special education status and gender. There were also significant main effects for child gender, adjusting for the other variables, such that males received lower baseline TPF ratings ($\beta = -4.57$, $p = .01$) and higher baseline BC ratings ($\beta = 2.75$, $p = .001$) compared to girls. In addition, students who were not identified for special education services received higher TPF ratings at baseline ($\beta = 5.76$, $p = .01$) and lower BC ratings ($\beta = -2.59$, $p = .01$) compared to students eligible for special education. Despite differences in baseline ratings, there were no significant interactions between the child demographic variables and time. These results indicated that children did not differ in their patterns of change over time in teacher ratings as a function of their gender or special education status.

In model 3, we kept time and the demographic variables in the models and added wave as a level-2 variable. Time and the demographic variables continued to demonstrate significant main effects on TPF and BC. There was also a significant main effect for wave on TPF, such that children in the Fall wave started with significantly lower protective factor ratings at baseline than the Spring wave ($\beta = -36.16$, $p < .001$). The interaction between wave and TPF was nonsignificant, indicating that wave did not predict any slope differences in change over time for TPF.

In the BC model, wave did not predict significant differences in baseline ratings; however, there was a significant wave by time interaction ($\beta = 0.07$, $p = .05$) indicating that BC ratings across time differed in the Fall and Spring groups. We probed the significant interaction using a multiple linear regression (MLR) two-way interaction tool to further explain the interaction effects (Preacher, Curran, & Bauer, 2006). We conducted analysis on the simple intercepts and slopes for the wave by time interaction. The simple slope was significantly different from zero for the Fall group but not for the Spring group (see Fig. 1). These results suggest a significant downward trajectory for BC ratings across the intervention period in the Fall group

Table 4 Results from MLM analyses for BC ratings

	Model 1	Model 2	Model 3
Fixed effects			
Intercept	6.65 (1.14)***	7.71 (1.55)***	8.04 (1.56)***
Time	−0.05 (0.02)***	−0.05 (0.02)***	−0.10 (0.03)***
Male		2.75 (0.80)***	2.75 (0.80)***
No special ed.		−2.59 (0.97)**	−2.59 (0.97)**
Wave			−0.93 (1.55)
Wave*time			0.07 (0.03)*
Model fit statistics			
Deviance	2977.03	2952.99	2954.03
AIC	2993.03	2968.99	2970.03
BIC	3027.55	3003.48	3004.51
Pseudo r^2	0.18	0.28	0.28

Standard errors are in parentheses. For ease of presentation, fixed effects for teachers and random effects for repeated measures of time are not reported in table. Pseudo r^2 = proportional reduction in variance

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

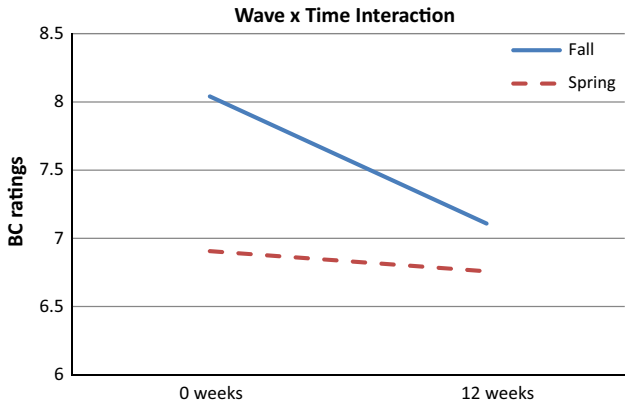

Fig. 1 Graph of interaction effect of time by wave for behavioral concerns scale. *BC* behavioral concerns

($z = -3.5496$, $p < .001$), and a nonsignificant downward slope in the Spring group ($z = -1.5081$, $p = .13$).

To examine model fit, we calculated pseudo r^2 for time, which estimates the proportional reduction in residual variance between two nested models (Peugh, 2010; Singer & Willett, 2003). The proportional reduction in residual variance (Pseudo r^2) accounted for by time in Model 1 was computed by subtracting the level-1 residual variance estimates from the residual variance of the unconditional model (without time included), and then dividing by the unconditional model residual variance. Pseudo r^2 was also calculated to estimate the proportional reduction in variance accounted for by adding the level-2 variables, child demographic variables, and wave. As seen in Tables 3 and 4, the pseudo r^2 for time in Model 1 was 56 % for TPF and 18 % for BC. Adding the level-2 demographic variables to Model 2 for TPF increased the pseudo r^2 by 4 % indicating greater variance accounted for by the additional variables. For BC, adding in the demographic variables in model 2 accounted for an additional 10 % reduction in residual variance. Pseudo r^2 in model 3 for both TPF and BC showed no further reduction in variance accounted for by adding in the wave variable. Finally, the deviance and AIC/BIC statistics showed improved model fit for TPF and BC from model 1 to model 2 after including demographic predictors in the model. There was minimal change in model fit from model 2 to model 3 for TPF or BC with the addition of the wave variable.

Changes in Teacher Behavior over Time

Teacher behavior change over time was assessed by examining mean, trend, level, and latency (i.e., points prior to shift in trend or level) of skills per 5-min observation averaged across teachers for baseline, CDI, and TDI phases (Kazdin, 1982). Figure 2 displays the mean level of PRIDE skills (i.e., labeled praise, reflections, behavioral descriptions) across observations for teachers in the Fall group and the Spring group. As this figure shows, both Fall and Spring group teachers demonstrated a low level of PRIDE skills during baseline, with a mean of 7.3 skills per 5-min observation in the Fall group and 6.7 in the Spring group. With the introduction of CDI, both groups substantially increased the mean level of PRIDE skills used to 18.3 per observation in the Fall group and 23.3 in the Spring group. In TDI, mean PRIDE skills remained relatively horizontal and stable at 17.6 and 27.5 per observation for the two groups, respectively, and well above baseline levels. Inspection of data for individual teachers indicated that six of eight teachers in the Fall group and all 12 teachers in the Spring group showed a consistent pattern of increased PRIDE skills during TCIT.

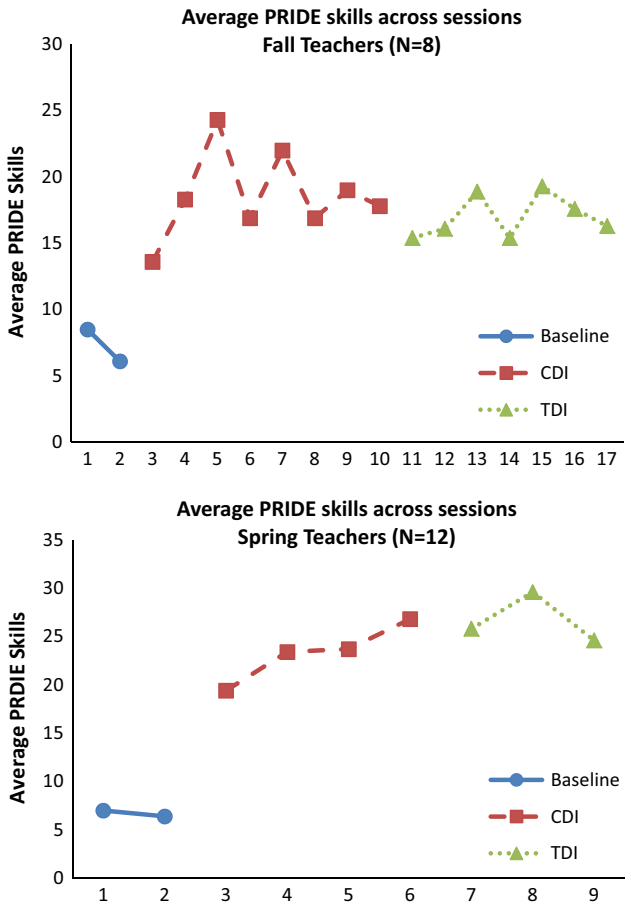

Fig. 2 Session-by-session levels of PRIDE skills (i.e., labeled praise, reflection, behavioral description) averaged across classroom teachers, graphed as the mean number per 5-min observation. CDI child-directed intervention, TDI teacher-directed intervention

Engagement and Satisfaction

Teachers showed strong engagement in the program through attendance and homework completion. All but one of the 20 teachers attended every group session or participated in a makeup session if absent, with the exception being one teacher who was on medical leave during the TDI phase. Overall homework completion was 94 % for the Fall group and 87 % for the Spring group. Teachers also rated strong satisfaction with the TCIT intervention. Consumer satisfaction ratings were highly positive on all dimensions, ranging between *agree* and *strongly agree* for the both Fall group ($M = 3.65$, SD = 0.33, range 3.49–3.86) and the Spring group ($M = 3.87$, SD = 0.15, range 3.77–3.95).

Discussion

This study expands on prior investigations of universal Teacher–Child Interaction Training (TCIT) by examining the feasibility of having local school staff independently implement TCIT, following training and participation in an initial delivery of TCIT conducted by a research team. Despite the promise of early childhood preventive interventions, many programs are not effective when put into practice outside of controlled trials, due to difficulties bridging the divide between research and practice (Durlak & DuPre, 2008; Evans & Weist, 2004). Community researchers have emphasized the need for collaborative approaches to facilitate intervention buy-in and engagement by consumers (Trickett & Espino, 2004; Wandersman et al., 2008). Observational data on teacher skills as well as program implementation indices (e.g., teacher attendance, homework completion, consumer evaluations) were comparable across researcher and school-based staff deliveries, suggesting that local school staff were able to implement TCIT effectively.

This study also extends evidence of universal TCIT's feasibility to a public school setting. As in prior studies with toddler and preschool teachers in a daycare setting (Garbacz et al., 2014; Lyon et al., 2009b), the current results showed that teachers' observed positive attention skills increased systematically with TCIT intervention, reaching levels at and often above those displayed by teachers in prior studies. High levels of teacher attendance and homework performance during training as well as high consumer satisfaction ratings suggest that the public school teachers were engaged in intervention and perceived it positively, again consistent with previous research (Garbacz et al., 2014; Lyon et al., 2009b). In order to detect change in child behavior as part of a universal prevention program, we used a strength-based measure and found that, controlling for teacher effects, children's protective factor (TPF) teacher ratings significantly increased and behavior concerns (BC) significantly decreased over the course of the intervention. Local effect size estimates indicated a medium effect of TCIT for TPF and a small effect for BC. Further, we found that although boys and students receiving special education had lower TPF and higher BC ratings at baseline, interactions with time were nonsignificant, suggesting that all students improved according to teacher ratings across time. The only area in which the findings differed across groups was a significant downward trajectory for BC ratings across the intervention period in the Fall (researcher-delivered) group and a nonsignificant downward slope in the Spring (practitioner-delivered) group. The reasons for this difference are unclear and will require further research. Some possibilities include a greater ability to coach discipline skills by the researchers, the greater number of training hours in TDI for the researcher-delivered group, or that teachers may have been more willing to perceive change in children's BC earlier in the year than later in the year after possible burnout from working with children's behavioral challenges over time. Overall, the promising results in increased protective factors in children for both researcher- and practitioner-led

groups, and improvements in behavior problems over time in the Fall group, lend support for the applicability of TCIT as a universal prevention model in a public school setting.

The above results need to be considered in light of several study limitations, a chief one being the case study design. Due to pragmatic limitations, this research did not include a controlled experimental group design. The lack of a control group precludes our ability to rule out maturation effects across the school year as an explanation for behavior change and limits interpretation of Fall versus Spring waves (i.e., researcher vs. school implementation). Other variables, such as teacher exposure to other experiences coincident with TCIT, the uniqueness of this school setting and its personnel, or expectancy biases could have been responsible for the observed changes. Also, the current sample of children was mostly white and from middle-class backgrounds, and all the teachers were white, non-Hispanic females. Additional research with more diverse child and teacher samples is needed to test the external validity of the findings. With regard to measurement of child behavior, slightly over one-quarter of the children had turned six before their baseline DECA scores were obtained, placing them outside the age range on which this version of the DECA was normed. A *t* test comparing the subgroup of children over six to those under six at their baseline was nonsignificant for TPF and BC at baseline; thus, we included all children in the analyses in order to represent the entire sample of children exposed to intervention. However, the fact that validity of the DECA cannot be established for the over six subgroup weakens our ability to draw conclusions.

Further, this study included only one measure of child functioning, whereas multiple measures and informants of child behavior would provide stronger evidence and would be preferable in future research (Carter et al., 2004). The teacher skills assessed in this study were the specific positive attention behaviors taught in CDI; however, due to resource limitations, formal data were not collected on teacher delivery of commands, follow-through strategies, and the sit-and-watch disciplinary procedure taught in TDI. Observational data were collected by TCIT trainers rather than independent observers, whereas the preferred methodology is for observers to be blind to the nature, hypotheses, and phases of the study. Finally, no reliability data were obtained on observations conducted by the local school staff for the Spring group, which limits the internal and statistical validities of the findings. Although adequate levels of inter-observer agreement had been established between researchers and school staff during the Fall group, greater comprehensiveness, standardization, and objectivity in observational coding are needed in future TCIT studies.

Despite the inherent disadvantages of the case study design, one major advantage was that it allowed for flexibility throughout the planning and implementation of TCIT. By approaching our work as a partnership and a trial run, we were able to learn from the changes made by local practitioners to enhance the feasibility of TCIT implementation. For the Spring group, the school staff held didactic sessions on the school's professional development days rather than on the schedule used in the Fall group to accommodate the off-site researchers. The local staff also included more teachers (12 rather than 8), had slightly fewer total group training hours (12 rather than 17) by consolidating some material, and invited five affiliated staff members (e.g., resource teacher, special education teacher, principal) who had expressed interest in TCIT to sit in as observers in group sessions to increase buy-in for TCIT. In other respects, based on the session protocols, discussions between research and local staff, and review of evaluation measures, the local school staff closely followed procedures used in the initial trial.

In summary, the results provide an encouraging yet tentative indication that the universal TCIT model can be successfully delivered with public school preschool and kindergarten teachers and that, with pretraining and ongoing support, local staff can learn to implement TCIT effectively on their own. The latter finding is particularly important for establishing the real-world feasibility of TCIT, in light of research documenting the research-to-practice gap in evidence-based interventions (Durlak & DuPre, 2008; Fixsen et al., 2010). The current universal TCIT model has yet to be examined in a randomized control design, and this research along with longer follow-up data on both teacher and child behavior are essential to establishing it as an evidence-based preventive intervention. An important further step is a controlled experimental evaluation of the training program for preparing local practitioners. This research will require strong collaborations that can allow for increased research controls to improve interpretability of findings, such as control groups. Further, it will be important to determine the sustainability, fidelity, and effectiveness of TCIT implementation by local school staff over time.

Finally, the findings from this study suggest setting characteristics that may help to make implementation of TCIT by local practitioners more successful (cf., Durlak & DuPre, 2008; Wandersman et al. 2008). Community-level factors related to funding, politics, educational theory and research, and policy are relevant in determining whether TCIT is likely to fit with the local setting's needs and priorities. Given the financial pressures facing school systems, there is a need to justify investments in any specific program over other worthwhile initiatives. Local school practitioners in this study reportedly were attracted to TCIT because its goals fit with their school district's needs and priorities. In introducing TCIT to stakeholders (e.g., funders, administrators, and teachers), public school staff

reported that they found it helpful to emphasize the universal prevention focus of TCIT. They characterized the positive communication and effective behavior management skills taught in TCIT as foundational, i.e., basic communication skills that build teachers' self-confidence and enhance their other competencies.

Organizational factors such as leadership, agency climate, and openness to change also bear consideration in assessing the viability of TCIT in school settings. In the current study, the director of special education and coordinator of mental health services were involved from the beginning of the collaboration, and their leadership roles may have made others more amenable to the program. Further, the school staff strategically reached out to principals in planning and implementing TCIT, beginning with inviting a building principal to join in the site visit to learn about TCIT. The presence of professional support staff who could implement TCIT also was necessary in order to implement the program. Whereas school districts or larger programs are likely to have staff who could potentially function as local TCIT trainers, smaller programs may need to seek outside sources for TCIT training and support.

In conclusion, this pilot study offers encouraging evidence that universal TCIT can be implemented successfully in public school preschool and kindergarten classrooms and that local school staff can learn to deliver TCIT. The study exemplifies the opportunities and challenges that exist when researchers and practitioners join forces to implement a prevention program in a real-world environment. The promising findings lay the groundwork for systematic investigation of TCIT's effectiveness and sustainability as a universal classroom approach.

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References

Baker, C., Kupersmidt, J., Voegler-Lee, M., Arnold, D., & Willoughby, M. (2010). Predicting teacher participation in a classroom-based, integrated preventive intervention for preschoolers. *Early Childhood Research Quarterly, 25*, 270–283.

Bennett, K. J., Lipman, E. L., Brown, S., Racine, Y., Boyle, M. H., & Offord, D. R. (1999). Predicting conduct problems: Can high-risk children be identified in kindergarten and grade 1? *Journal of Consulting and Clinical Psychology, 67*, 470–480.

Bickel, R. (2007). *Multilevel analysis for applied research: It's just regression!*. New York City: Guilford Press.

Birch, S. H., & Ladd, G. W. (1997). The teacher-child relationship and children's early school adjustment. *Journal of School Psychology, 35*, 61–79.

Buyse, E., Verschueren, K., Doumen, S., Van Damme, J., & Maes, F. (2008). Classroom problem behavior and teacher-child relationships in kindergarten: The moderating role of classroom climate. *Journal of School Psychology, 46*, 367–391.

Campbell, C., Martin, E. K., West, T., Hubel, G., Flood, M. F., & Hansen, D. J. (2010, November). Applying evidence-based practices to improve social and behavioral competence in preschoolers: Evaluating the effectiveness of Teacher-Child Interaction Training in Head Start settings. In C. Campbell & D. J. Hansen (Chairs), *An innovative application of evidence-based practices to unite cognitive-behavioral therapists and teachers: Teacher-Child Interaction Training*. San Francisco, CA: Symposium conducted at the meeting of the Association for Behavioral and Cognitive Therapies.

Carter, A. S., Briggs-Gowan, M. J., & Davis, N. O. (2004). Assessment of young children's social-emotional development and psychopathology: Recent advances and recommendations for practice. *Journal of Child Psychology and Psychiatry, 45*, 109–134.

Chain, J., Dopp, A., Smith, G., Woodland, S., & LeBuffe, P. (2010). *The devereux early childhood assessment literature review*. Unpublished manuscript, The Devereux Center for Resilient Children. Retrieved from http://www.devereux.org/site/DocServer/DECA_Lit_Review_in_PDF.pdf?docID=12821.

Curby, T. W., Rudasill, K. M., Edwards, T., & Pérez-Edgar, K. (2011). The role of classroom quality in ameliorating the academic and social risks associated with difficult temperament. *School Psychology Quarterly, 26*, 175–188.

Devers, K. A., Rainear, C. A., Stokes, T. F., & Budd, K. S. (2012, November). *In-classroom coaching using a bug-in-the-ear communication system to improve teacher interactions in managing the behavioral challenges of preschoolers*. Poster session presented at the meeting of the Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Dodge, K. A. (2011). Context matters in child and family policy. *Child Development, 82*, 433–442.

Domitrovich, C. E., Cortes, R. C., & Greenberg, M. T. (2007). Improving young children's social and emotional competence: A randomized trial of the preschool "PATHS" curriculum. *The Journal of Primary Prevention, 28*, 67–91.

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*, 327–350.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The Impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*, 405–432.

Durlak, J. A., & Wells, A. M. (1997). Primary prevention mental health programs for children and adolescents: A meta-analytic review. *American Journal of Community Psychology, 25*, 115–159.

Evans, S. W., & Weist, M. D. (2004). Implementing empirically supported treatments in the schools: What are we asking? *Clinical Child and Psychology Family Review, 7*, 263–267.

Eyberg, S. M., & Funderburk, B. (2011). *Parent–child interaction therapy protocol*. Gainesville, FL: PCIT International.

Eyberg, S. M., Nelson, M. M., Duke, M., & Boggs, S. R. (2005). *Manual for the dyadic parent–child interaction coding system* (3rd ed.). Gainesville, FL: University of Florida.

Eyberg, S. M., & Child Study Lab. (1999). *Parent–child interaction therapy integrity checklists and session materials*. Gainesville, FL: University of Florida.

Fernandez, M. A., Adelstein, J. S., Miller, S. P., Areizaga, M. J., Gold, D. C., Sanchez, A. L., et al. (2015a). Teacher–child interaction training: A pilot study with random assignment. *Behavior Therapy, 46*, 463–477.

Fernandez, M. A., Gold, D. C., Hirsch, E., & Miller, S. P. (2015b). From the clinics to the classrooms: A review of Teacher–child interaction training in primary, secondary, and tertiary prevention settings. *Cognitive and Behavioral Practice, 22*, 217–229.

Fernandez, M. A., O'Brien, K. A., Kurtz, S. M., Karlin, T., Kirby, A., DiMotta, R., & Eyberg, S. M. (2008, November). *A pilot study of Teacher-Child Interaction Therapy in a day treatment program and therapeutic nursery*. Poster session presented at the 42nd Annual Convention of the Association for Behavioral and Cognitive Therapies, Orlando, FL.

Filcheck, H., McNeil, C., Greco, L., & Bernard, R. (2004). Using a whole-class token economy and coaching of teacher skills in a preschool classroom to manage disruptive behavior. *Psychology in the Schools, 41*, 351–361.

Fixsen, D. L., Blase, K. A., Duda, M. A., Naoom, S. F., & VanDyke, M. (2010). Implementation of evidence-based treatments for children and adolescents: Research findings and their implications for the future. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-based psychotherapist for children and adolescents* (2nd ed., pp. 435–450). New York: Guilford Press.

Forman, S. G., Olin, S. S., Hoagwood, K. E., Crowe, M., & Saka, N. (2009). Evidence-based interventions in schools: Developers' views of implementation barriers and facilitators. *School Mental Health, 1*, 26–36.

Garbacz, L. L., Zychinski, K. C., Feuer, R., Carter, J. S., & Budd, K. S. (2014). The impact of teacher–child interaction training on teachers' skills and children's behaviors. *Psychology in the Schools, 51*, 850–865.

Gershenson, R., Lyon, A., & Budd, K. S. (2010). Promoting positive interactions in the classroom: Adapting parent–child interaction therapy as a universal prevention program. *Education and Treatment of Children, 33*, 261–287.

Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*, 466–474.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*, 625–638.

Hamre, B. K., Pianta, R. C., Burchinal, M., Field, S., LoCasale-Crouch, J., Downer, J. T., et al. (2012). A course on effective teacher-child interaction effects on teacher beliefs, knowledge, and observed practice. *American Educational Research Journal, 49*, 88–123.

Han, S., & Weiss, B. (2005). Sustainability of teacher implementation of school-based mental health programs. *Journal of Abnormal Child Psychology, 33*, 665–679.

Institute of Medicine (IOM), & National Research Council (NRC). (2012). *The early childhood care and education workforce: Challenges and opportunities: A workshop report*. Washington, DC: The National Academies Press.

Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and appliedsettings*. New York: Oxford University Press.

LeBuffe, P., & Naglieri, J. (1999). *The devereux early childhood assessment- technical manual*. Lewisville, NC: Kaplan Press.

Lyon, A. R., Budd, K. S., & Gershenson, R. A. (2009a). Teacher–child interaction training: Overview, outcome, and sustainability. *Emotional and Behavioral Disorders in Youth, 9*, 27–30.

Lyon, A., Gershenson, R., Farahmand, F., Thaxter, P., Behling, S., & Budd, K. S. (2009b). Effectiveness of teacher-child interaction training (TCIT) in a preschool setting. *Behavior Modification, 33*, 855–884.

Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., et al. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*, 732–749.

McIntosh, D., Rizza, M., & Bliss, L. (2000). Implementing empirically supported interventions: Teacher–child interaction therapy. *Psychology in the Schools, 37*, 453–462.

NAEYC & SRCD. (2008). Using research to improve outcomes for young children: A call for action. Final report of the Wingspread Conference, September 18–20, 2007. *Early Childhood Research Quarterly, 23*, 591–596.

Peugh, J. L. (2010). A practical guide to multilevel modeling. *Journal of School Psychology, 48*, 85–112.

Pianta, R. C., Belsky, J., Houts, R., & Morrison, F. (2007). Opportunities to learn in America's elementary classrooms. *Science, 315*(5820), 1795–1796.

Pianta, R. C., Mashburn, A. J., Downer, J. T., Hamre, B. K., & Justice, L. (2008). Effects of web-mediated professional development resources on teacher–child interactions in pre-Kindergarten classrooms. *Early Childhood Research Quarterly, 23*, 431–451.

Porterfield, J. K., Herbert-Jackson, E., & Risley, T. R. (1976). Contingent observation: An effective and acceptable procedure for reducing disruptive behavior of young children in a group setting. *Journal of Applied Behavior Analysis, 9*, 55–64.

Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interaction effects in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics, 31*, 437–448.

Raver, C., Jones, S., Li-Grining, C., Zhai, F., Metzger, M., & Solomon, B. (2009). Targeting children's behavior problems in preschool classrooms: A cluster-randomized controlled trial. *Journal of Consulting and Clinical Psychology, 77*, 302–316.

Schultz, B. K., Arora, P., & Mautone, J. A. (2015). Consultation and coaching ot increase the uptake of evidence-based practices: Introduction to the special issue. *School Mental Health, 7*, 1–5.

Shanley, J. R., & Niec, L. N. (2010). Coaching parents to change: The impact of in vivo feedback on parents' acquisition of skills. *Journal of Clinical Child & Adolescent Psychology, 39*, 282–287.

Shaw, D. S. (2013). Future directions for research on the development and prevention of early conduct problems. *Journal of Clinical Child & Adolescent Psychology, 42*, 418–428.

Shernoff, E. S., & Kratochwill, T. R. (2007). Transporting an evidence-based classroom management program for preschoolers with disruptive behavior problems to a school: An analysis of implementation, outcomes, and contextual variables. *School Psychology Quarterly, 22*, 449–472.

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press.

Thomas, R., & Zimmer-Gembeck, M. J. (2007). Behavioral outcomes of parent–child interaction therapy and triple p—positive parenting program: a review and meta-analysis. *Journal of Abnormal Child Psychology, 35*, 475–495.

Tiano, J., & McNeil, C. (2006). Training head start teachers in behavior management using parent–child interaction therapy: a preliminary investigation. *Journal of Early and Intensive Behavior Intervention, 3*, 220–233.

Trickett, E. J., & Espino, S. R. (2004). Collaboration and social inquiry: Multiple meanings of a construct and its role in creating useful and valid knowledge. *American Journal of Community Psychology, 34*, 1–69.

Wandersman, A., Duffy, J., Flashpohler, P., Noonan, R., Lubell, K., Stillman, L., et al. (2008). Bridging the gap between prevention research and practice: The Interactive Systems Framework for dissemination and implementation. *American Journal of Community Psychology, 41*, 171–181.

Wilson, S., & Lipsey, M. (2007). School-based interventions for aggressive and disruptive behavior: Update of a meta-analysis. *American Journal of Preventive Medicine, 33*, S130–S143.

Zisser, A., & Eyberg, S. (2010). Parent-Child Interaction Therapy and the treatment of disruptive behavior disorders. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents* (2nd ed., pp. 179–193). New York: Guilford Press.