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# Universal Teacher-Child Interaction Training: A Pilot Study Examining Coaching with Random Assignment

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Universal Teacher-Child Interaction Training:

A Pilot Study Examining Coaching with Random Assignment

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**Biography**

Alexandra Barnett is currently completing her clinical psychology internship at Columbia University Medical Center. She is a PCIT International Certified Level 1 Trainer and focuses her research and clinical work on training parents and teachers in evidence-based interventions to support urban youth. Prior to attending DePaul University for her doctorate in clinical child psychology, Barnett was a Project Associate at the New York University Child Study Center on a Randomized Control Trial of ParentCorps. This universal intervention is currently being offered in partnership with Pre-K for All as an evidence-based enhancement to programs throughout New York City. Barnett received her Master of Arts in Clinical Child Psychology from DePaul University in 2013 and her Bachelor of Arts in Psychology from Brandeis University in 2009.

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Classrooms are in dire need of teacher support services and effective child

behavior management, particularly in low-income urban areas (Campbell &

Ewing, 1990; Fantuzzo & Mohr, 1999; Hamre & Pianta, 2004; Visser, Bitsko,

Danielson, Perou, & Blumberg, 2010). Teacher-Child Interaction Training -

Universal (TCIT-U) is a preventive, classroom-wide teacher training protocol that

shows promise for strengthening teacher and child behavior (Budd, Garbacz, &

Carter, 2016; Fernandez, Gold, Hirsch, & Miller, 2015b; Garbacz, Zychinski,

Feuer, Carter, & Budd, 2014; Lyon, Budd, & Gershenson, 2009a). To date, this is

the first pilot study with random assignment to investigate TCIT-U; further, it is

the first study to examine in-class coaching, a key training component of TCIT-U,

separately from didactic training. Using randomized assignment by classroom and

a series of linear regressions, the current study evaluated the effects of TCIT-U on

(a) teacher skills, (b) teacher self-efficacy, and (c) child behavior. Preschool

classrooms at two different Head Starts in a large urban setting were randomly

assigned to one of three conditions: Combined (TCIT coaching plus didactic

training), Didactics (TCIT didactic training alone) or Control (volunteer

classroom support only). Participants included six lead teachers, their 10 teacher

assistants, and 107 students across six classrooms. Consistent with study

hypotheses, results demonstrate significant benefits of the Combined Condition

on teacher skills at mid-point and teacher self-efficacy at post-intervention.

Additionally, findings indicate significant benefits of the Combined Condition on

direct, condition-blind observations of children with the highest baseline problems.

However, contrary to hypotheses, there were no significant benefits of the

Combined Condition on teacher skills at post-intervention or on teacher reports of

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the Didactic Condition on teacher reports of child behavior. Implications of the

current study include recommending the full TCIT-U model including its

coaching component to improve teacher skills, self-efficacy, and classroom

behavior for children with problematic behavior. The benefits of TCIT-U's

didactic component are also discussed as a potential means for improving general

classroom behaviors, particularly in schools with limited resources.

Universal Teacher-Child Interaction Training:

A Pilot Study Examining Coaching with Random Assignment

Early childhood classrooms across the country are in dire need of classroom management programs to address the rising rates of teacher burnout and child externalizing behaviors (Hamre & Pianta, 2004; Visser, Bitsko, Danielson, Perou, & Blumberg et al., 2010). Teachers in underserved districts tend to experience disproportionately higher rates of burnout and turn-over, and to cite their inability to manage classrooms as a primary reason for leaving the field (Evertson, 2006; Hughes, 2001; Martin, Linfoot, & Stephenson, 1999; Özdemir, 2007; Smith & Ingersoll, 2004). Unfortunately, students in their classrooms are at the highest risk for developing behavior problems, relative to their peers in more advantaged communities (Campbell & Ewing, 1990; Fantuzzo & Mohr, 1999; Reid, Webster-Stratton, & Baydar, 2004). Effective interventions are needed to promote the well-being of young children and buffer the risk of negative outcomes (Yazejian, Bryant, Freel, & Burchinal, 2015).

Fortunately, positive teacher-child interactions are associated with improvements in children's social and academic outcomes even for those exposed to risk factors in other contexts (Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Kanine, Jackson, Huffhines, Barnett, & Stone, 2016; Pianta & Stuhlman, 2004; Sabol & Pianta, 2012). Therefore, effective interventions that promote these techniques are strongly recommended to improve outcomes for children in low-income communities (McCoy, Connors, Morris, Yoshikawa & Friedman-Krauss, 2015). The federal Head Start program, established to promote school readiness

and socialization skills for our country's most vulnerable preschool children (U.S. Department of Health and Human Services, 2009), provides a natural context for such professional development initiatives.

The current study evaluated a universal model of Teacher-Child Interaction Training (TCIT-U, with the U for universal) (Budd, Garbacz, & Carter, 2016; Garbacz, Zychinski, Feuer, Carter, & Budd, 2014; Gershenson, Lyon, & Budd, 2010; Lyon et al., 2009a), a promising preventive teacher training intervention developed for use in preschools and early elementary classrooms, including those serving low-income, ethnically diverse children. TCIT-U's goals are (1) to equip teachers with skills in positive attention and consistent discipline, such that they can more confidently handle child behavior challenges; and (2) to increase children's social-emotional adjustment, thereby enhancing children's behavioral and academic success (Budd et al., 2016). TCIT-U was adapted from Parent-Child Interaction Therapy (PCIT), a parent training and coaching program with an extensive evidence base in improving parental skills and confidence in the behavior management of children ages two to seven with disruptive behavior problems (Zisser & Eyberg, 2010). Whereas PCIT was designed for a clinically referred population, TCIT-U was designed as a universal, classroom-wide program (Gershenson et al., 2010; Lyon et al., 2009a). A few other TCIT classroom applications (e.g., Campbell, 2011; Filcheck, McNeil, Greco, & Bernard, 2004; McIntosh, Rizza, & Bliss, 2000; Tiano & McNeil, 2006) have been developed for use with children who have identified problems rather than as a whole classroom approach. However, universal preventive approaches such as

TCIT-U are designed to train all teachers and benefit all children in the classroom, including those not yet identified as having behavioral difficulties (Budd et al., 2016; Wilson & Lipsey, 2007).

**Theoretical Framework of TCIT**

Like PCIT, TCIT is informed by theories of attachment, social learning, and development (Zisser & Eyberg, 2010). According to attachment theories, an authoritative caregiver, one who provides consistent warmth and appropriate boundaries, is recommended to provide children with a secure base for exploring, learning, constructing future healthy relationships, and promoting social and academic adjustment (Ainsworth, 1979; Birch & Ladd, 1998; Bowlby, 1969). TCIT equips teachers with skills to foster warm, supportive attention to students' positive behaviors. Additionally, teachers are trained in effective commands and disciplinary procedures to promote appropriate and consistent boundaries.

According to social learning theory, observational modeling can influence behavioral goals (Bandura, 1986). In TCIT, purposeful modeling of behavior occurs between trainers and teachers and between teachers and children. Trainers model effective classroom management skills during didactic training and, during in-class coaching sessions, they provide immediate feedback. These strategies aim to shape positive, responsive teacher behavior and model appropriate problem-solving and skill implementation decisions. In turn, teachers learn to implement TCIT skills in their classrooms, with the goal of modeling positive self-regulation and pro-social skills for their students.

TCIT's theoretical framework is also informed by developmental theory. In using this approach, TCIT takes children's developmental capabilities into account in setting teacher's expectations and improving their ability to promote children's developmental functioning (Baumrind, 1967; Lyon et al., 2009a). TCIT also uses a developmental approach in training teachers. In doing so, teachers are gradually taught more complex classroom management problem-solving techniques through the program. Following training, individualized coaching from a more experienced individual is provided to further facilitate teachers' effective interactions with students.

**Coaching**

TCIT shares its origin in many of the same behavioral principles and general structure as other effective classroom-based programs (Campbell et al., 2010; Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008; Webster-Stratton, Reid, & Stoolmiller, 2008). TCIT consists of two phases: Child Directed Interaction (CDI), designed to teach positive attention skills, and Teacher Directed Interaction (TDI), designed to teach discipline and follow-through strategies. Compared to other classroom-based interventions, TCIT is particularly distinct for its use of *in vivo* or "in-the-moment" style coaching (Campbell et al., 2010; Gershenson et al., 2010). Live consultation is aimed at increasing the retention of newly taught skills (Joyce & Showers, 2002). Analogous to PCIT, coaching in TCIT is characterized by being immediate, brief, and focused on teachers' use of discrete target skills (e.g., labeled praise, reflections of child speech, and use of consistent follow-through procedures) in the flow of teacher-

child interactions. The feedback is delivered to parallel the differential social attention and learning principles being taught to teachers (e.g., "good behavioral description," "she's really enjoying your attention," or "you can ignore that"). As in PCIT, TCIT coaching sessions start with an observation period to code teachers' current use of skills before beginning the coaching. This allows coaches to obtain valid measurements of teachers' skills and to set individualized session coaching goals. Coaching is followed with 3-5 minutes of supportive feedback either immediately after the session or later in the class day.

Various methods of coaching have been found to improve the fidelity of many evidence-based programs delivered in school settings. Across the board, classroom coaching refers to "an expert [who provides] individualized support to teachers after an initial training occurs" (Kretlow & Bartholomew, 2010, p. 280). Although TCIT's *in-vivo* coaching shares this broad definition, it combines aspects of different methods. *Supervisory* coaching, the most frequently used coaching method according to a meta-analysis of evidence-based school coaching interventions (Kretlow & Bartholomew, 2010), refers to providing consultative feedback to teachers following observations of their newly learned skill usage. Although TCIT coaching includes brief post-session feedback, the emphasis of TCIT coaching is "in-the-moment" as teachers use skills with students. In this respect TCIT coaching is similar to the other type of coaching described in Kretlow and Batholomew's (2010) meta-analysis, referred to as *side-by-side coaching*. Although this form of coaching is less commonly used, *side-by-side* coaching tends to be more effective than *supervisory* methods due to its ability to

immediately address teacher's skill use (Kretlow & Bartholomew, 2010). TCIT's

*in-vivo* coaching differs from the form of *side-by-side* coaching used by other

programs (Kretlow, Cooke, & Wood, 2012; Maheady, Harper, Mallette, &

Karnes, 2004), which review the correct use of skills for teachers with their

students immediately before coaching (Kretlow et al., 2012; Maheady et al.,

2004). By contrast, TCIT focuses on responding to teachers' use of skills as they

are implemented to shape more proficient and purposeful use of their attention.

By supporting teachers without directly modeling skill use, TCIT seeks to build

on teachers' natural communication styles and to gradually empower teachers in

their increasingly effective yet genuine interactions with children.

Coaching has been found to be helpful in a variety of studies (Kaminski,

Valle, Filene, & Boyle, 2008; Kretlow & Bartholomew, 2010; Noell et al., 2005;

Reinke, Stormont & Webster- Stratton, 2012; Shanley & Niec, 2010). However,

despite the growing interest in classroom coaching, only a small number of

systematic studies have evaluated this professional development technique

(Becker, Bradshaw, Domitrovich, & Ialongo, 2013; Kretlow & Bartholomew,

2010; Noell et al., 2005; Pianta et al., 2014; Reinke et al., 2012). Currently, My

Teacher Partner is the most extensively studied coaching model (Allen, Pianta,

Gregory, Mikami, & Lun, 2011). This *supervisory* coaching program has teachers

video record classroom situations for later review and consultative feedback with

coaches to promote teacher-child interactions as well as academic achievement.

Other programs have recently added innovative *supervisory* coaching

components to their interventions as well.  The effects of including this form of

coaching in the implementation of Incredible Years, Tools of the Mind, and

PATHS were recently evaluated through a large-scale RCT (Mattera, Lloyd,

Fishman, & Bangser, 2013). The coaching components evaluated by this study

consisted of observing lead and assistant teacher performance and then reviewing

teachers' progress in consultation meetings outside the classroom. Compared to

control classrooms, all coaching interventions in this study improved some of the

specific outcomes they were intended to impact. The Incredible Years

demonstrated improvements in teachers' classroom management, PATHS

demonstrated improvements in social-emotional instruction, and Tools of the

Mind increased teacher's scaffolding of peer interactions and play (Mattera et al.,

2013). Some coaching challenges experienced in this study included coaching

scheduling issues, variations across coaches, and additional school interventions

that competed for resources and attention (Mattera et al., 2013).

Although research has shown benefits of coaching in My Teaching Partner,

The Incredible Years, Tools of the Mind, and PATHS, the effects of coaching

have not yet been isolated in a TCIT study. Whereas coaching is presumed to be a

key component of TCIT, this training element requires analysis separately from

didactic training (Gupta & Daniels, 2012; Kretlow et al., 2012; Raver et al., 2008),

particularly in view of the resources required. The costs of coaching include

coach recruitment, hiring, training, equipment, and supervisory personnel

(Mattera et al., 2013), as well as dedicated time to conduct coaching sessions.  If

coaching is found to be unnecessary for teachers to acquire effective use of skills,

schools could save training time and expense by focusing exclusively on TCIT's

didactic component. Further, some teachers have reported feeling apprehensive about being coached, at least initially (Budd, Barnett, D'Amico, & Andrews, 2013). If coaching is not found to add significant benefits, schools may be more amenable to implementing TCIT-U's didactic training alone.

**Overview of TCIT Models and Research Designs**

Early research on TCIT models spawned interest in piloting various modifications of PCIT as classroom interventions (Fernandez et al., 2015b). Classroom applications of PCIT were initially delivered to small numbers of clinically referred children in the classroom (Filcheck et al., 2004; Tiano & McNeil, 2006) or in a separate therapy room (McIntosh et al., 2000). Over the past several years, modifications of TCIT have been made in secondary (Campbell et al., 2011) and tertiary (Fernandez et al., 2008) prevention settings to treat students with high levels of disruptive behavior. Some more recent classroom applications of PCIT use the term *training* rather than *therapy* in TCIT, given that teachers are not mental health professionals and are not being trained as therapists (Campbell et al., 2011; Fernandez et al., 2008; Gershenson et al., 2010; Lyon et al., 2009b).

In addition to secondary and tertiary prevention settings, TCIT has been implemented on a universal, classroom-wide basis, with the rationale that all children have the potential to benefit from improved teacher-child interaction skills (Durlak & Wells, 1997; Fernandez et al., 2015a; Garbacz et al., 2014; Lyon et al., 2009b). Two primary variations of classroom-wide TCIT have been studied, and they differ in the types of instructional staff taught, didactic training format,

length of coaching, and use of mastery criteria for completion of training. Similar

to most TCIT models, Fernandez and colleagues' (2015a) universal prevention

approach included only lead teachers in training. Teachers received four total

didactic training hours and 24 weeks of coaching, unless teachers met skill

mastery before then. Coaching sessions occurred one to two times per week for an

average of 11 weeks and typically lasted one hour each. TCIT-U, the classroom-

wide model assessed in the current study, includes all instructional classroom staff

(e.g., lead teachers and assistants), 12 didactic training hours, and 20-minute

weekly coaching sessions for approximately eight weeks with no mastery

requirement for completion (Budd et al., 2016; Gershenson et al., 2010; Lyon et

al., 2009b).

  A variety of research designs have been used to evaluate TCIT in classroom

settings. To date, five case studies examined the effects of TCIT on a single child

or small group of children by measuring teacher and child behavior repeatedly

across baseline and intervention conditions (Budd et al., 2016; Fernandez et al.,

2008; Filcheck et al., 2004; Garbacz et al., 2014; McIntosh et al., 2000). One

experimental control group design study compared the effects of TCIT to a

treatment as usual condition in four classrooms from a therapeutic school for

maltreated youth by measuring teacher and child behavior repeatedly across

baseline and intervention conditions (Kanine, 2016). Three multiple baseline

designs examined the effects of TCIT on two to five classrooms by measuring

teacher and child behavior during baseline and intervention conditions (Campbell,

2011; Devers, Rainear, Stokes, & Budd, 2012; Lyon et al., 2009a). Two group

design studies with randomized assignment assessed the effects of TCIT relative

to no treatment control classrooms across 7-11 classrooms by measuring teacher

and child behavior at baseline and post-intervention (Fernandez et al., 2015a;

Tiano & McNeil, 2006). The findings of these TCIT studies on outcome variables

of interest are summarized below.

**Key Studies of the Effects of TCIT on Teacher Skills**

TCIT studies have focused on teacher skills as a first-order outcome

variable, in that improvements in teacher relationship skills are presumed to lead

to child behavior changes (Garbacz et al., 2014; Tiano & McNeil, 2006). Further,

coaching is primarily focused on ensuring that teachers implement techniques

they are initially taught didactically, and skill measurement provides evidence of

these effects (Lyon et al., 2009b). Target teacher skills in TCIT studies include

several categories of positive attention, or "Do Skills," i.e., Behavioral

Description (BD; e.g., "You're coloring a picture"); Reflection (RF; e.g., a child

states, "I'm coloring a tree!" and the teacher responds, "You're coloring a tall,

strong tree!"); Labeled Praise (LP; e.g., "Thank you for putting your crayons

away."); and Unlabeled Praise (UP; e.g., "Great job!"), and selective attention to

positive behavior. To date, 11 studies have assessed the effects of TCIT on Do

skills (Budd et al., 2016; Campbell, 2011; Devers et al., 2012; Fernandez et al.,

2008; Fernandez et al., 2015a; Filcheck et al., 2004; Garbacz et al., 2014; Kanine,

2016; Lyon et al., 2009a; McIntosh et al., 2000; Tiano & McNeil, 2006). All

studies that assessed Do Skills demonstrated one or more improvement in these

skills.

While a key focus in PCIT is also a decrease in Don't Skills which refer to criticisms, questions and commands, measurement development in this area is still underway for TCIT-U. "Don't Skills," refer to Negative Talk (NTA; e.g., "Stop coloring on the table."), Questions (QU; e.g., "What are you drawing?"), Direct Commands (DC; Please sit down) and Indirect Commands (IC; e.g., Could you please clean up?"). While it is important to cut down on criticisms in academic settings, there are many times when questions and commands are necessary (Lyon et al., 2009a). To better understand the recommended use of questions and commands in the general education classroom, the coding system for tracking Don't Skills in TCIT-U is still in development (Budd & Stern, 2016). In developing their assessment for Don't Skills, the TCIT creators recently defined and have been exploring the frequency of Question Follow-up's (QF) and Command Follow-up's (CF) (Budd & Stern, 2016). These skills refer to teachers' immediate use of PRIDE skills when children respond to teachers' questions or commands, respectively. With the coding system for these skills currently under development, there is not yet a valid coding method for this subset of skills. The challenges in refining Don't Skills for the classroom setting, explain why fewer studies have assessed the effects of TCIT on Don't Skills (Campbell, 2011; Fernandez et al., 2008; Fernandez et al., 2015a; Filcheck et al., 2004; Kanine, 2016; McIntosh et al., 2000; Devers et al., 2012; Tiano & McNeil, 2006) and why TCIT-U studies have not yet assessed Don't Skills, QF, or CF skills (Garbacz et al., 2014; Lyon et al., 2009a). For all the TCIT studies that have assessed for Don't Skills, they have all indicated expected reductions for at least one skill in

this area (Campbell, 2011; Fernandez et al., 2008; Fernandez et al., 2015a; Filcheck et al., 2004; Kanine, 2016; McIntosh et al., 2000; Devers et al., 2012; Tiano & McNeil, 2006). Although studies have not demonstrated identical improvements across all individual TCIT skills, they all demonstrated some improvements in Do Skills and/or decreases in Don't Skills. For TCIT-U, exploratory research is recommended at this time to build upon the emerging TCIT-U Don't Skill literature.

**Key Studies of the Effects of TCIT on Teacher Attitudes**

As teachers increase their skill competence, it is expected they will become more confident in their ability to manage classroom behavior. Teacher self-efficacy is defined as the belief that one can affect change in one's students (Bandura, 1977; Tschannen-Moran, & Hoy, 2001). Teachers with high self-efficacy believe that managing their students' behavior is within their control. Studies suggest increased self-efficacy is associated with decreased feelings of stress and burnout (Evers, Brouwers, & Tomic, 2002; Rabinowitz, Kushnir, & Ribak, 1996). Likewise, teachers with lower self-efficacy are likely to feel overwhelmed and strained when it comes to handling student misbehaviors on their own.

Teacher satisfaction and confidence, measured by subjective teacher ratings following intervention, are common outcomes in the TCIT literature. Of the seven studies that have assessed teacher satisfaction with TCIT, all indicated high ratings (Campbell, 2011; Fernandez et al., 2015a; Filcheck et al., 2004; Garbacz et al., 2014; Lyon et al., 2009a; Stokes, Rainear, Devers, & Budd, 2011),

except one case study in a day treatment center that found teachers were only

somewhat satisfied (Fernandez et al., 2008). Teacher evaluation forms have

included items regarding perceived skill usefulness, capacity for effective teacher-

child interactions (Budd, Legato, & Watkin, 2012; Garbacz et al., 2014; Lyon et

al., 2009a) and confidence and competence implementing behavior management

strategies (Filcheck et al., 2004; McIntosh et al., 2000). A recent study evaluating

TCIT-U in a therapeutic setting with maltreated children indicated there may also

be associated decreases in teacher stress (Kanine, 2016).

Although findings from all the aforementioned studies generally suggest

teachers rate TCIT positively, they do not assess whether TCIT impacts teachers'

self-efficacy. The only TCIT study that has assessed for teacher self-efficacy used

an adaptation of the Teacher Efficacy Scale by Gibson and Dembo (1984) for

Head Start teachers and found changes varied across teachers. More specifically,

five teachers who worked with one of two coaches reported improvements in self-

efficacy from pre- to post-intervention, while one teacher working with a third

coach reported a decrease in perceived self-efficacy (Campbell, 2011). As the

author of this study indicates, the Teacher Efficacy Scale was indicated to have a

low internal consistency ($\alpha = .39$) indicating other measures may more accurately

capture changes in self-efficacy for Head Start teachers (Campbell, 2011).

Additional strands of evidence suggest teacher self-efficacy may be

improved by TCIT. For one, the behavior management training in PCIT has been

found to improve parental self-efficacy (Thomas & Zimmer-Gembeck, 2007).

More relevant to the classroom, evaluations of other school-based behavior

management practices have found that intervention has been associated with higher levels of teacher self-efficacy (Evers et al., 2002; Rimm-Kaufman & Sawyer, 2004). In qualitative follow-up interviews, teachers trained in TCIT-U reported increased confidence in managing classroom behavior challenges they previously assumed were outside their control (Budd et al., 2013).

In summary, the TCIT literature suggests there may be improvements in teacher self-efficacy. However, it also raises questions regarding how TCIT coaching and teacher skill improvements may impact teacher efficacy and identified the need for valid assessment methods to detect changes in self-efficacy. Formally assessing teacher self-efficacy appears to be an appropriate next step for TCIT-U, particularly as it may be affected by different intervention conditions.

**Key Studies of the Effects of TCIT on Child Behavior**

Another goal of TCIT is to assist teachers in promoting adaptive child behaviors (Filcheck et al., 2004; Rudasill & Rimm-Kaufman, 2009). To date, 11 studies have assessed the effects of various TCIT models on child behavior (Budd et al., 2016; Campbell et al., 2011; Devers et al., 2012; Fernandez et al., 2008; Fernandez et al., 2015a; Filcheck et al., 2004; Garbacz et al., 2014; Kanine et al., 2016; Lyon et al., 2009a; McIntosh et al., 2000; Tiano & McNeil, 2006). Of those studies, seven indicated positive improvements in child behavior problems (Budd et al., 2016; Campbell et al., 2011; Devers et al., 2012; Filcheck et al., 2004; Garbacz et al., 2014; Kanine et al., 2016; McIntosh et al., 2000). Unexpectedly, the two studies with randomized assignment found little to no impact of TCIT on child behavior (Fernandez et al., 2015a; Tiano & McNeil, 2006). A third study

found teachers reported no improvements in child behavior while observation data

showed otherwise (Fernandez et al., 2008), and a fourth study failed to show

improvements in teacher ratings of problem behaviors (Lyon et al., 2009a). These

inconsistent findings indicate assessment improvements such as intervention

fidelity measures and child behavioral observations are needed to understand

TCIT's effects on child behavior.

        For TCIT-U in particular, Garbacz and colleagues (2014) proposed that

strength-based rather than problem-focused behavioral assessments may be most

appropriate for measuring the effects of preventive models. Garbacz and

colleagues (2014) found children's strength-based behaviors improved over time

even when measurement of behavioral concerns did not show significant change.

However, for children with high levels of behavioral concerns at baseline,

behavior problems changed as well as protective factors (Garbacz et al., 2014).

Strength-based behaviors may be particularly sensitive to behavioral changes in a

preventive context, where child behavior problem measures may be more likely to

have a floor effect (Lyon et al., 2009a). This may be because general education

classrooms tend to have low percentages of baseline problematic behavior relative

to secondary and tertiary settings (Fernandez et al., 2015a). In addition, a recent

study in a day treatment setting with maltreated youth found improved behavioral

outcomes, as expected, for children in a TCIT condition compared to those in a

Control Condition. However, children in both the TCIT and Control Conditions

demonstrated improvements in strength-based behaviors (Kanine et al., 2016). To

better understand the way TCIT leads to child behavioral changes, more research

is needed that includes systematically controlled conditions and direct observations of child behavior.

Although teacher perceptions are a valuable and widely used means of assessing child behavior change (Domitrovich, Cortes, & Greenberg, 2007), live, objective observations are considered the gold standard (Pelham, Fabiano, & Massetti, 2005). Live observation is expensive and requires trained observers, yet it provides valuable information to corroborate teachers' subjective reports. To date, two multiple baseline design studies and one case study used child behavior observations as a TCIT outcome (Campbell et al., 2011; Devers et al., 2012; Fernandez et al., 2008). In the case study, when teacher reports of disruptive behavior did not improve, observational data showed behavioral progress (Fernandez et al., 2008). In an additional study, Fernandez and colleagues (2015a) attempted to use behavioral observations (i.e., Revised Edition of the School Observation Coding System [REDSOCS; Jacobs et al., 2000]), but found this method was unreliable and invalid in their general education setting. To build upon and address gaps in the TCIT literature, the current study used strength-based teacher reports and a direct child observation measure which has not yet been used in a TCIT study to date (i.e., Behavior Assessment System for Children, Second Edition Student Observation System [BASC-2 SOS], Reynolds & Kamphaus, 2004).

**Key TCIT Literature Limitations**

Overall, findings point to TCIT-U's potential value as a professional development program to strengthen teachers' positive interaction and behavior

management skills. It remains important, however, to highlight the current

literature's limitations, which provide the basis for the current study. For one,

only two studies have assessed TCIT with random assignment (Fernandez et al.,

2015a; Tiano & McNeil, 2006), and neither assessed TCIT-U. In addition, a study

has yet to examine the effects of TCIT's full didactic plus coaching model

separately from the effects of its didactic component alone. Professional

development research demonstrates teachers are less likely to correctly adopt

skills they have only been exposed to once (Fixsen. Naoom, Blase, Friedman, &

Wallace, 2005; Reinke et al., 2012). Although more literature is needed, studies

suggest better outcome fidelity of teacher skill use following coaching

interventions relative to more traditional didactic training models (Reinke et al.,

2012).

Furthermore, it is important to formally assess the effects of TCIT on

teacher self-efficacy, as well as to directly observe child behavior changes

independent of teachers' perceptions of child behavior. Lastly, to ensure trainer

adherence to the TCIT manual, it is important to monitor intervention fidelity,

which has not occurred in most TCIT studies to date (Lyon et al., 2009a).

**Study Rationale and Purpose**

The current study is the first to assess the effects of TCIT-U's didactic

training separately from the didactic plus coaching package. In addition, this

study is innovative in examining TCIT-U's effects on teacher self-efficacy, and in

assessing child outcomes using direct child behavior observations conducted by

condition blind observers. Six classrooms were assigned to one of three

conditions at two different Head Start schools: Combined (TCIT coaching plus

didactic training), Didactics (TCIT didactic training alone) or Control Condition

(volunteer classroom support only). Using a quasi-experimental approach with

random assignment and a series of linear regressions, the current study evaluated

the effects of TCIT-U on (a) teacher skills, (b) teacher self-efficacy, and (b) child

behavior. Similar to other investigations of TCIT using group designs (Fernandez

et al., 2015a; Kanine et al. 2016; Tiano & McNeil, 2006) to date, teachers in the

current study were nested within classrooms due to the small number of teachers

involved. Despite the inherent limitations of nested data in a small $n$ study, this

pilot investigation provides a valuable contribution as a starting point for a larger

scale randomized control trial of TCIT-U.

**Hypotheses**

(a) Teachers will demonstrate significant improvements in TCIT skills in

the Combined Condition relative to the Control Condition, with no significant

differences between the Didactic Condition and the Control Condition.

(b) Teachers will rate significant improvements in self-efficacy in the

Combined Condition relative to the Control Condition, with no significant

differences between the Didactic Condition and the Control Condition.

(c) There will be significant improvements in teacher ratings and observed

levels of child behavior in the Combined Condition relative to the Control

Condition, with no significant differences between the Didactic Condition and the

Control Condition.

**Method**

**Participants**

Sixteen teaching staff participated, including six head teachers and 10 assistants across six classrooms and two Head Start sites. Site directors invited the teachers to participate, the principal investigator provided them with consent forms, and all eligible teachers agreed to participate. Each classroom was staffed by a lead teacher with a B.A. degree in early childhood and one or two teacher assistants. All teaching staff spoke and understood English, although some teachers occasionally spoke to children in Spanish. Demographic characteristics of the teachers are shown in Table 1.

A total of 107 children (ages 3-5) across six classrooms participated in the study. Demographic characteristics of the children are provided in Table 2. Although ethnicity was not collected for individual children, School 1 was predominantly comprised of African American children and School 2 was predominantly comprised of Latino children. Both schools were part of the same Head Start Agency. According to the agency, almost all of its students are categorized as low income, with 77% living below poverty level.

Teachers were provided with letters in both Spanish and English to send home notifying parents that teachers would be observed as part of the TCIT program, that teachers would be rating all children's classroom behavior, that some children would be observed, and that all information would be kept confidential. Parents were asked to contact the teacher or school if they wished to decline their child's participation in the study. No parents declined to participate

in the current study. This method of passive consent has been used in similar

studies (Garbacz et al., 2014). The flow of child participants across the study is

shown in Appendix A.

Table 1

*Demographic Characteristics of Teacher Sample at Baseline n = 16*

|  | *N* | *%* |
|---|---|---|
| Gender | | |
| Female | 16 | 100.00 |
| Site | | |
| School 1 | 7 | 43.75 |
| School 2 | 9 | 56.25 |
| Age (years) | | |
| 23-30 | 10 | 62.50 |
| 31-40 | 1 | 6.25 |
| 41-50 | 3 | 18.75 |
| 51-60 | 2 | 12.50 |
| Teacher Type | | |
| Lead | 6 | 37.50 |
| Assistant | 10 | 62.50 |
| Race | | |
| Hispanic/Latino | 9 | 56.25 |
| African American | 5 | 31.25 |
| Caucasian | 1 | 6.25 |
| Asian American | 1 | 6.25 |
| Highest Education | | |
| Some college | 3 | 18.80 |
| Associate's degree | 4 | 25.00 |
| Bachelor's degree (BA or BS) | 4 | 25.00 |
| Some Graduate Courses | 4 | 25.00 |
| Master's Degree (MA, MS, MEd, etc) | 1 | 6.25 |
| Teaching Experience (years) | | |
| 1-5 | 7 | 43.75 |
| 6-10 | 3 | 18.75 |
| 11-15 | 2 | 12.50 |
| 20+ | 4 | 25.00 |
| Teaching Experience with Agency (years) | | |
| 1-5 | 8 | 50.00 |
| 6-10 | 4 | 25.00 |
| 11-15 | 1 | 6.25 |
| 20+ | 3 | 18.75 |

Table 2

*Demographic Characteristics of Child Sample at Baseline n = 107*

|                | *N* | *%* |
|----------------|-----|-----|
| Gender         |     |     |
| Female         | 57  | 53.30 |
| Male           | 50  | 46.70 |
| Site           |     |     |
| School 1       | 49  | 45.80 |
| School 2       | 58  | 54.20 |
| Age (months)   |     |     |
| 36-46          | 23  | 21.50 |
| 47-57          | 58  | 54.21 |
| 58-64          | 26  | 24.30 |

**Procedure**

All TCIT sessions followed the universal prevention TCIT protocol implemented in previous studies (Budd et al., 2016; Garbacz et al., 2014; Gershenson et al., 2010; Lyon et al., 2009a).

**Research Team.** The primary author, a doctoral student with three years of supervised PCIT therapy experience and 24 hours of TCIT-U coach training experience, served as the trainer and coach. Training and coaching was conducted in English. The trainer received individual supervision from Dr. Karen Budd, Ph.D., the creator of TCIT-U and a clinical psychologist with extensive PCIT supervisory experience, and Dr. Kathryn Grant, Ph.D., a clinical psychologist with extensive low-income urban school-based preventive intervention experience. Undergraduate students served as classroom support volunteers and were kept blind to intervention conditions. Undergraduate and graduate research assistants served as observers for coding teacher and child behavior and were blind to intervention conditions.

**Settings.** All TCIT sessions took place at Head Start sites described in the Participants section. Didactic training took place in school conference rooms, and in-class coaching took place in the preschool classrooms. The training timeframe and location for didactic training was determined based on joint planning with on-site education coordinators. Didactic training was intended to be as uniform as possible across classrooms receiving this component, and efforts were made to relieve teachers from other responsibilities during that time. Despite several last minute modifications to training logistics due to classroom coverage coordination, all teachers were trained either individually or in groups of two to six teachers. Didactic training spanned for three sessions of 120 minutes each over two weeks for CDI training and again for TDI training.

Weekly, in-class coaching sessions for individual teachers were 20 minutes long and took place during a variety of classroom activities including center time (e.g., teacher-led activities, pretend play, pre-academic activities), circle time, and transition time. Classroom support took place in preschool classrooms during mutually convenient times for teachers and classroom support volunteers.

**Randomization.** Following baseline data collection, one classroom in each site was randomly assigned to the Control Condition (general classroom support only) and the other two classrooms were assigned to receive didactic training. After conducting CDI didactic training, the two intervention classrooms were then randomized into either the Combined (TCIT didactic training plus coaching) or Didactic (TCIT didactic training alone) Condition. This was done to keep the CDI didactic trainer blind to which classrooms would receive coaching. All random

assignment was done using a random number generator. Contamination across conditions was controlled for where possible by explaining the research nature of the study and requesting teachers and Head Start staff not share TCIT information and materials across classrooms until study completion. Upon completing follow-up data collection, the primary author offered coaching/training/consultation to classrooms that did not receive the full intervention package to allay concerns that not all teachers initially received the full intervention.

**Intervention procedures.** The didactic intervention component, provided to all teachers in the Combined and Didactic Conditions, consisted of an introduction to the principles, rationale, and application of the TCIT skills using description and examples, lecture slides, role-plays, handouts, and practice exercises. Didactic training included a total of 12 training hours, the first six hours focused on Child Directed Interaction (CDI) skills and the second six on Teacher Directed Interaction (TDI) skills. The core skills covered in CDI were taught using the acronym *PRIDE*. Specifically, teachers learned to *Praise* specific appropriate behavior; *Reflect* appropriate 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 were also taught to reduce unnecessary questions and commands, selectively ignore inappropriate behavior, and refrain from negative talk. The TDI phase focused on behavior management strategies, including the effective use of direct commands, consistent follow-through, and use of a 1-minute "sit and watch" (consisting of having a child take a

break from engaging in classroom activities with other students) after serious disruptive behavior (Lyon et al., 2009b; Porterfield, Herbert-Jackson, & Risley, 1976). The specific behaviors leading to disciplinary consequences were collaboratively determined by teachers in each classroom during their TDI didactic training.

The coaching intervention component was only provided to teachers in the Combined Condition. Coaching involved providing brief, in-class feedback and support to individual teaching staff on their use of TCIT skills as they interacted with children directly in their classrooms through a bug-in-the-ear device. Teachers and assistants received individualized, 20-minute coaching sessions in their classrooms twice per week, during which the coach observed and provided on-the-spot suggestions to refine teachers' skills learned during their didactic training. Coaching sessions began with five minutes of observing and coding teacher behavior and skill use, followed by 10 minutes of live coaching using a bug-in-the-ear device. Coaching occurred during increasingly complex situations beginning with a small number of children and more controlled activities (e.g., art activities) and eventually included more children and a wider variety of activities (e.g., free play, circle time, clean-up, transition time). Teachers were encouraged to let coaches know what specific skills they wanted to work on during live coaching and coaches provided feedback on teachers' use of all TCIT skills. The final three to five minutes were spent providing summary feedback, discussing the session and/or problem-solving how to manage individual children's behaviors. Coaching continued for three to four weeks following CDI didactic training and

for another three to four weeks following TDI didactic training. To keep track of

teacher skills and coaching goals over the course of all coaching sessions, the

coach used individual teacher progress records and coaching fidelity checklists.

To ensure all participating classrooms in each school received the same amount of

face-time from research staff during the study, classrooms assigned to the Didactics

and Control Conditions received classroom support for various tasks of their

choosing to balance out the time coaching was provided in the Combined Condition.

Classroom support included one-on-one assistance to students, preparation or clean-

up of activities, or other generic volunteer tasks. The amount of total intervention

time provided to each classroom was greater in School 2 relative to School 1

because all classrooms in School 2 had 3 teachers (1 lead with 2 assistants) while

each classroom in School 1 had only two teachers (1 lead and 1 assistant). The total

amount of coaching time provided to each classroom was greater in School 2 as it

was proportional to the number of teachers in each classroom. The amount of time

provided for general classroom support, didactics, and coaching in classrooms at

Schools 1 and 2 is displayed in Table 3.

Table 3

*Intervention Face-Time by Conditions and Schools*

|  | School 1 Total Teachers Total Time (hrs) | School 2 Total Teachers Total Time (hrs) |
|---|---|---|
| Condition |  |  |
| Combined | *n* = 2 | *n* = 3 |
| Didactic Training | 12 | 12 |
| Coaching | 11 | 16 |
| Total | 23 | 28 |
| Didactics | *n* = 2 | *n* = 3 |
| Didactic Training | 12 | 12 |
| Classroom Support | 11 | 16 |
| Total | 23 | 28 |
| Control | *n* = 3 | *n* = 3 |
| Classroom Support | 23 | 28 |
| Total | 23 | 28 |

**Study timeline.** A project timeline (provided in Table 4) was used to guide the implementation and ongoing operations of the study.

Table 4

*Dissertation Timeline*

| Project Task | Time Unit |
|---|---|
| Submit DePaul University IRB | 1 mon |
| Prepare study materials/order measures | 1 mon |
| Train for reliability in Dyadic Parent-Child Interaction Coding System (DPICS) with Research Assistants | 2 mos |
| Hire and train general support staff | 1 mon |
| Meet with site personnel to plan dates/logistics of study | 2 days |
| Collect consent forms from teachers and parents | 1 mon |
| Baseline Data Collection | 1 mon |
| CDI Phase | 6 wks |
| Mid-Point Data Collection (DPICS only) | 1 wk |
| TDI Phase | 6 wks |
| Post-Intervention Data Collection | 1 mon |

**Fidelity**. To maintain quality control over TCIT implementation, fidelity forms for each phase of TCIT didactic training (i.e., CDI and TDI) (Appendix B) were created to evaluate the extent to which teachers received each component of the intervention. The fidelity form for each TCIT didactic phase outlines the critical components expected to be covered. A trained observer reviewed all didactic trainings via audio tapes to examine treatment integrity. This observer coded each audiotape by checking each fidelity item as present, absent or not applicable. Fidelity was then assessed by dividing the number of session components that were completed by those that were not completed. Overall, integrity of the didactic trainings was 99%. A total of 10% of the coded sessions were randomly selected for reliability checks by an independent coder, and inter-rater reliability was found to be 100%.

**Data collection.** The study consisted of three data collection points: baseline, mid-point, and post-intervention. Baseline spanned approximately one month prior to the start of CDI didactic training, during which trained research assistants videotaped teacher-child interactions in the classroom (as described further below) while teachers were asked to continue using their usual techniques. All teaching staff completed a teacher demographic scale and teacher self-efficacy rating scale. At baseline, lead teachers also completed a behavior rating measure for each child. In each classroom, four children with the most problematic teacher behavior ratings were then selected for direct behavior observations by trained research assistants and observed. The CDI didactic and coaching component then followed. After the completion of CDI, mid-point data were collected, which

consisted of videotaping teacher-child interactions. The TDI didactics and coaching component followed mid-point data collection. Post-intervention took place following TDI and spanned approximately one month, during which the teachers were again videotaped. Also at this time, lead teachers provided post-intervention ratings of child behavior, the same high risk students were directly observed by trained research assistants, and all teaching staff completed measures of self-efficacy and a form to record their other classroom management training experiences. All intervention condition teachers were also provided with treatment satisfaction forms post-intervention.

**Compensation.** Teachers and their assistants each received a certificate and continuing education units in recognition of their successful participation at the end of treatment. Lead teachers also received a $25 gift card for their time filling out child behavior measures.

**Measures**

**Dyadic Parent-Child Interaction Coding System, Fourth Edition** (DPICS-IV; Eyberg, Nelson, Duke, & Boggs, 2005). This measure, which was adapted for use in TCIT by Lyon and colleagues (2009a) and is currently being adapted by Budd and Stern (2016) (provided in Appendix C) was used to record teacher behaviors targeted by the intervention, PRIDE skills i.e. BD, RF, and LP, and UP (as previously defined). Observers tallied teacher behaviors during a variety of videotaped classroom situations during small group time using frequency counts in 5-minute observational periods. Three observations during different days and/or activities were conducted at each time point for each teacher.

Individual skills (i.e., BD, RF, LP, and UP) were summed for each teacher for

each observation session and an average composite of their total PRIDE skills (i.e.,

BD, RF, and LP) was created for all of their observations at each data collection

time point.

Observer training in the coding system occurred in didactic meetings

consisting of review of the DPICS-IV manual, completion of homework

assignments, administration of quizzes from the DPICS-IV workbook and

completion of practice observations from videotaped interactions. Observers

coded videotapes of classroom teachers implementing skills to establish 80%

reliability before coding in the current study. Weekly meetings were held

throughout the intervention to further review coding issues and minimize drift.

Teacher coders were blind to study condition. For a subset of observations (32%

at baseline, 22% at mid-point, and 25% at post-intervention), two observers

independently coded teachers to assess reliability. Reliability was calculated by

comparing frequency counts for each target behavior coded during a 5-minute

observation and computing interclass correlations. DPICS inter-observer

agreement based on 28 reliability observations across study conditions ranged

from good to excellent for TCIT Do Skills (BD = .93, RF = .77, LP = .96, UP

= .95) (Gliem & Gliem, 2003). While Don't Skills are not the focus of the current

study, for exploratory purposes, DPICS inter-observer agreement based on the

same 28 reliability observations across study conditions was also assessed for all

TCIT Don't Skills including those still underdevelopment. Inter-observer

agreement for Don't Skills ranged from poor (NTA = .57, DC F = .56) to good

(QU F = .76) to excellent (DC = .93, QU = .91) (Gliem & Gliem, 2003). Due to

Negative Talk unreliability in the current study and the TCIT-U Don't Skill

coding system that remains underway, the current study focused only on

TCIT-U Do Skills.

**Teacher Sense of Efficacy Scale** (TSES; Tschannen-Moran & Hoy,

2001). The TSES is a 24-item scale assessing teachers' beliefs about their abilities

to bring about desired outcomes related to student engagement and learning,

including for those students who are difficult to manage. The measure includes

three subscales: Instruction, Management, and Engagement. All teaching staff

rated their confidence level for a variety of tasks on a Likert-type scale from 1 to

9 with anchors of 1 (*nothing*), 3 (*very little*), 5 (*some influence*), 7 (*quite a bit*),

and 9 (*a great deal).* The TSES has demonstrated excellent reliability, with

internal consistencies of .90 for the total scale, and .81-.86 for the subscales. In

the current study, internal consistency of the TSES was excellent across both time

points ($\alpha$ = .95). Although the scale was normed for use with K-6 teachers, it has

shown strong psychometrics with preschool teachers (Tschannen-Moran, & Hoy,

2007).

**Devereux Early Childhood Assessment for Preschoolers, Second**

**Edition** (DECA-P2; LeBuffe & Naglieri, 2012a). The DECA-P2 is a 38-item

behavior rating scale developed for the assessment of social-emotional strengths

in 3- to 5-year-olds. Each questionnaire typically takes five minutes to complete.

Lead teachers rated children's behavior on a 5-point Likert-type scale ranging

from 0 ("never") to 4 ("very frequently") to indicate how often within the past

four weeks a child exhibited various behaviors. The subscale that assesses for

social-emotional strengths is the Total Protective Factors (TPF) scale, which

includes 27 items that load onto three subscales: Initiative, Self-Control and

Attachment. Scores on the three subscales are summed to yield a TPF score, with

higher scores indicating stronger levels of protective factors. Questions begin with

the stem: "During the past four weeks, how often did the child…" The TPF scale

includes items such as, "control his/her anger," "try different ways to solve a

problem," and "listen or respect others." The subscale assesses behavioral

concerns is the 11-item Behavioral Concerns (BC) scale, with higher scores

indicating more disruptive or problematic behaviors. The BC scale includes items

such as "fight with other children" and "have temper tantrums." According to the

DECA-P2, protective factor *t*-scores of 60 and above are categorized as *Strengths*,

*t*-scores ranging from 41-59 are *Typical*, and t-scores of 40 and below are *Areas*

*of Need*. For behavioral concerns, *t*-scores below 60 are categorized as *Typical*

while *t*-scores of 60 and above are categorized as *Areas of Need*.

Internal consistency reliability within the current study's sample was

excellent across both time points on the TPF ($\alpha = .94$), and BC ($\alpha = .80 - .83$). The

DECA-P2 has demonstrated good reliability and validity in several independent

psychometric studies, with diverse national standardization samples as well as

ethnically diverse and Head Start children (Bulotsky-Shearer, Fernandez, &

Rainelli, 2013; Chain, Dopp, Smith, Woodland, & LeBuffe, 2010; LeBuffe &

Naglieri, 2012b).

**Behavior Assessment System for Children, Second Edition Student**

**Observation System** (BASC-2 SOS; Reynolds & Kamphaus, 2004). This

measure was created for use in the classroom as part of the multidimensional

BASC-2, which is recommended for children and young adults ages 2 through 25

(Reynolds & Kamphaus, 2004). Live observations of child behavior were

conducted on four children in each of the six participating classrooms (n = 24).

These children were selected based on lead teachers' DECA-P2 ratings at baseline

as having the four highest behavioral concerns in the class. Of these 24 children

selected at baseline, 63% were rated by teachers as having behavioral concerns in

the *Area of Need* category. Child names were removed from the BASC-2 SOS

forms immediately after post-intervention and were identified only with random

research numbers rather than names to allow for storage in a de-identifiable

manner. The BASC-2 SOS took approximately 20 minutes to administer for each

child and was conducted on each of the 24 indicated children during teacher-led

large group time, as the BASC-2 SOS assumes students have the opportunity to

respond to their teachers. Observations were collected by trained research

assistants who were blind to experimental conditons and hypotheses.

The BASC-2 SOS was collected on the same children at post-intervention.

This direct observation method was used to control for potential biases in teacher

reports and better understand why possible discrepencies may exist between

teacher reports and observations of child behavior. The BASC-2 SOS uses

momentary time sampling at each 30 second interval over the course of 15

minutes to record both adaptive and problem behaviors. This measure was

selected to monitor both adaptive and maladaptive behaviors, as recommended

when evaluating preventative interventions such as TCIT-U and when conducting

research in Head Start programs (Garbacz et al., 2014; Hunter & O'Brien, 2009).

For a subset of observations (5% at baseline and 13% at post-intervention),

two observers independently coded children on the BASC-SOS to assess

reliability. Reliability was calculated by comparing each 30-second frequency

count for each target behavior coded during the 15-minute BASC-2 SOS

observations and computing kappa. Nonoccurrence of behavior for the entire 15-

minute period was not counted as agreement and therefore did not count toward

the reliability index. Nonoccurrence of behavior was recorded for eight of the 13

total BASC-2 SOS behaviors. Inter-observer agreement across all reliability

observations by both observers indicated four of the remaining five BASC-2 SOS

categories based on reliability observations across study conditions ranged from

moderate agreement to almost perfect agreement (Response to Teacher = .47-.88,

Work on School Subjects = .80-1.00, Transition Movement = .65-1.00,

Inappropriate Movement = .72-.84) (Viera & Garrett, 2005). Inter-observer

agreement on the BASC-2 SOS category Reliability for Peer Interaction was

excluded from the current study's total adaptive score as this category

demonstrated low reliability agreement at baseline (Viera & Garrett, 2005).

### Results

**Data Analysis**

All analyses were conducted using SPSS statistical software, Version 23.

Alpha levels of .05 were used for all statistical tests unless otherwise indicated.

To evaluate treatment condition as a predictor of post-intervention outcomes

including teacher skills, teacher self-efficacy, and child behavior (i.e., for DECA-P2, and BASC-2 SOS), a series of regressions were run. For all regressions, the Control Condition was selected as the reference group as the Combined and Didactic Conditions are both intervention conditions. To consider the effect of school and gender on child behavior outcomes, mean differences at baseline and post-intervention were evaluated across school and gender prior to running the regressions described below. In cases where school or gender differences were significant, they were included as covariates in the regression models described below. To consider the effect of baseline scores on teacher and child behavior outcomes, mean baseline differences were also evaluated across conditions prior to running the regressions described below. Regardless of significance, to hold baseline differences across conditions as constant as possible in assessing changes across the intervention, baseline score of each respective measure was included as regression predictors.

        Hierarchical linear modeling (HLM) would have been the most appropriate method to account for the nested structure of the data (i.e., time within child, child within classroom, and classroom within school). Due to project resource limitations consistent with the other TCIT studies that have used randomized assignment (Fernandez et al., 2015a; Tiano & McNeil, 2006), the current study did not provide enough power to conduct a full randomized controlled trial using hierarchical linear modeling. Also consistent with previous TCIT studies, the current study randomized by classroom rather than individual student or teacher due to the creation of classroom assignments prior to study

implementation (Fernandez et al., 2015a). Within the aforementioned limitations

in project resources, the current study is a preliminary examination that randomly

assigned three classrooms at two different schools to the three conditions stated

above. In addition the current study used hierarchical linear regressions, which

allows for the control of baseline outcome measures with nested data and the use

of analysis at the individual level. This was done to account for baseline

performance including school differences while assessing condition differences at

the classroom level within this quasi experimental pilot study.  Controlling for

covariates in this way is considered a powerful approach when using nested data

randomized by intact units such as classrooms (Hedges & Hedberg, 2015).

**Attrition, missing data analysis, and descriptive statistics.** The

percentage of missing DPICS data across all video observation points was 23.59%.

Missing teacher data occurred primarily because of technological issues that

caused videotapes to have more than 30 seconds of inaudible material during a 5-

minute observation, and because of translational problems that caused videotapes

to have more than 30 seconds of Spanish language, which was unable to be coded.

In several instances, missing teacher data occurred because of repeated teacher

absences despite multiple attempts to videotape teachers. The range of total

number of observations per teacher was 3 to 9. Due to the large percentage of

missing DPICS data, average individual skill composite scores were created for

each teacher at each time point. Using this method of compiling average

composites of individual teacher skills at each of the three time points, the amount

of missing DPICS data was reduced to 3.75%. PRIDE skill composites were then

calculated for each teacher by adding together the average individual skill

composites of BD, RF, and LP for each teacher at each time point. On the TSES,

there was a total of 1.17% missing data, which occurred because of several

teachers failing to fill out every survey item. There was a total of 3.97% of

missing data for the whole child sample (i.e., DECA) and 5.59% for the high- risk

child sample (i.e., BASC-2 SOS). Missing child data occurred primarily because

of children leaving their school or switching classrooms midway through the

study.

The data for dependent variables were tested for potential bias in attrition

by running a MANOVA to determine any significant differences in the

demographic characteristics or the initial scores on the primary variables included

in the analyses (i.e., teacher skills, teacher self-efficacy, and child behavior

ratings) for teachers with complete ($n = 11$) versus incomplete data ($n = 5$), whole

sample children with complete ($n = 90$) versus incomplete data ($n = 17$), and high

risk-sample children with complete ($n = 20$) versus incomplete data ($n = 5$).

Little's Missing Completely at Random (MCAR) Test determined all missing

values to be missing at random for teachers ($c^2 (244) = .00$, $p = 1.00$), for the

whole sample ($c^2 (3) = 3.51$, $p = .32$) and high risk sample of students ($c^2 (4) =$

$3.32$, $p = .50$). Missing values were imputed using the Expectation Maximization

method in SPSS 23, and all 107 children and 16 teachers who participated in the

study were able to be included in the subsequent analyses. When there is a small

percentage of missing data as in the case of the current study, Expectation

Maximization is a superior technique for imputing missing data relative to

traditional approaches (Kang, 2013). With imputed data sets, analyses were run including descriptive statistics. The appropriate statistical checks were then conducted to ensure the assumptions of Analysis of Variance were met. Means and standard errors for teacher skills were grouped into three time points (i.e., baseline, mid-point and post-intervention). Means and standard errors for self-efficacy and child behavior were grouped into two time points (i.e., baseline and post-intervention).

**Hypothesis I: Teacher Skill Acquisition.** The first hypothesis stated that teachers in the Combined Condition would demonstrate a significantly higher proficiency in TCIT skills as a result of the Combined Condition relative to the Control Condition. However, there would be no significant difference between the Didactic Condition and the Control Condition regarding TCIT skills. This hypothesis was partially supported by the current study's findings.

To assess the effect of condition on DPICS skills, a series of hierarchical linear regressions were run. Prior to running the regressions, an independent samples $t$-test indicated no significant differences by school on PRIDE skill (i.e., BD, RF and LP) composite scores during any time point. Therefore, school was not controlled for in the regression models assessing for teacher skills described below. Similarly, a one-way ANOVA did not indicate significant differences in PRIDE skills at baseline scores by condition ($F (2) = .65, p = .54$). However, baseline total PRIDE skills were still controlled for as explained in the Data Analysis section above. See Table 5 for means and standard deviations of all individual TCIT skills (i.e., LP, BD, RF, and UP) across the study by condition

and time point. See Table 6 for means and standard deviations of the PRIDE skill

composite (i.e., BD, RF, and LP) that was used in statistical analyses across the

study by condition and time point.

The first regression model controlling for baseline TCIT skills indicated

significant differences between the Combined Condition and the Control

Condition ($\beta$ = .55, $SE$ = 2.95, $p$ =.04) and non-significant differences between

the Didactic Condition and Control Condition at mid-point ($\beta$ = .17, $SE$ = 3.06, $p$

= .50). See Figure 1 for an illustration of this finding. At post-intervention, the

regression model controlling for baseline TCIT skills indicated no significant

differences between the Combined Condition and the Control Condition ($\beta$ = .33,

$SE$ = 2.99, $p$ =.15) or between the Didactic Condition and Control Condition ($\beta$

= .27, $SE$ = 3.10, $p$ = .25). Despite the lack of significant findings and variability

in TCIT skill outcomes at post-intervention, examination of the means for each

condition suggests a trend toward more improved skill usage in both the

Combined and Didactic Conditions at post-intervention relative to baseline.

Furthermore, when each skill is examined individually, the Combined group

demonstrated equivalent or high mean levels across all skills from baseline to

post-intervention whereas the Didactics Condition demonstrated mean levels

equivalent to or higher from baseline to post-intervention for behavioral

descriptions and labeled praises. The means at mid-point and post-intervention for

the Control Condition were generally low across the study.

Table 5

*Means and Standard Deviations of Individual TCIT Skills by Condition and Phase*

| Condition | Study Phase | BD | RF | LP | UP |
|---|---|---|---|---|---|
| Combined | Baseline | .60 (.55) | 4.20 (3.42) | .67 (.59) | 3.03 (1.19) |
| *n* = 5 | Mid-point | 3.93 (3.55) | 5.53 (2.78) | 2.87 (2.00) | 5.03 (3.62) |
| | Post-Intervention | 1.83 (1.44) | 4.57 (3.06) | 2.47 (2.45) | 5.60 (4.53) |
| Didactics | Baseline | .42 (.50) | 7.67 (7.36) | .08 (.17) | 2.42 (3.30) |
| *n* = 5 | Mid-point | 2.50 (2.35) | 5.70 (3.73) | 1.03 (1.53) | 3.30 (4.32) |
| | Post-Intervention | 3.53 (4.87) | 5.80 (7.01) | 1.17 (1.17) | 1.40 (.98) |
| Control | Baseline | 1.19 (1.20) | 3.72 (1.47) | .25 (.29) | 1.28 (.98) |
| *n* = 6 | Mid-point | .80 (.45) | 3.67 (2.35) | .13 (.30) | 2.00 (1.68) |
| | Post-Intervention | .33 (.42) | 3.61 (1.82) | .06 (.14) | 2.83 (1.19) |

Table 6

*Means and Standard Deviations of TCIT Skills (BD, RF, LP) n = 16*

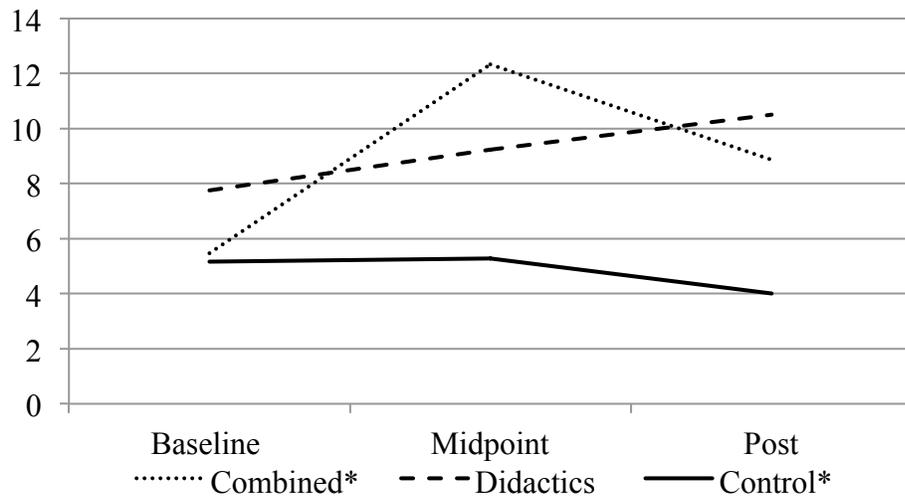| | Baseline | Mid-point | Post |
|---|---|---|---|
| Combined *n* = 5 | 5.47 (3.31) | 12.33 (7.75) | 8.87 (5.62) |
| Didactics *n* = 5 | 7.75 (6.44) | 9.23 (5.64) | 10.50 (9.95) |
| Control *n* = 6 | 5.17 (1.92) | 5.27 (2.52) | 4.00 (2.21) |



*Figure 1*. TCIT Skills (BD, RF, LP) by Condition and Time Point.

·    = Means at mid-point, controlling for baseline scores, are significantly

different at *p* = .04.

**Hypothesis II: Teacher Self-Efficacy.** The second hypothesis stated teachers would rate themselves as perceiving significantly higher self-efficacy as a result of the Combined Condition relative to the Control Condition. However, there would be no significant differences between the Didactic Condition and the Control Condition. This hypothesis was supported by the current study's findings.

To assess the effect of study condition on teacher total self-efficacy skills as measured by the TSES, a series of hierarchical linear regressions were run. An independent samples $t$-test indicated total self-efficacy scores did not significantly differ by school during any time point. Therefore, school was not controlled for in the regression models assessing for total self-efficacy described below. Similarly, a one-way ANOVA did not indicate significant differences in total self-efficacy baseline scores by condition ($F (2) = 91, p = .43$). However, total self-efficacy scores at baseline were still controlled for in the regression models, as described above. See Table 7 for means and standard deviations of average self-efficacy scores across the current study by condition and time point, with comparisons to Tschannen-Moran and Hoy's (2007) novice and career teacher ratings. According to these descriptive data, teachers in the Combined Condition ($M = 6.88$) rated their average self-efficacy levels at baseline similar to the mean ratings for novice teachers ($M = 6.87$) and their average self-efficacy levels at post ($M = 7.77$) above average relative to career teachers ($M = 7.29$). In contrast, teachers in the Control Condition rated their average self-efficacy levels at baseline ($M = 6.26$) and post-intervention ($M = 6.70$) below those of novice teachers. Teachers in the Didactic Condition ($M = 6.42$) rated their average self-efficacy levels at baseline as below

the mean for novice teachers and, although they increased at post ($M = 7.03$), they

remained below the mean for career teachers.

The regression model assessing for self-efficacy changes across time

points by condition, controlling for baseline mean self-efficacy scores, indicated

significant differences between the Combined and Control Conditions ($\beta = .84$,

$SE = .25$, $p = .00$) and non-significant differences between the Didactics and

Control Conditions ($\beta = .26$, $SE = .23$, $p = .20$). See Figure 2 for an illustration of

this finding. Consistent with the hypothesized relationship, the Combined

Condition had significantly higher mean self-efficacy outcomes *(M = 7.77)*

relative to the Control Condition *(M = 6.70)*, controlling for baseline scores.

Table 7

*Comparison of TSES (n = 16) in Current Study with Previous Research (n = 255)*

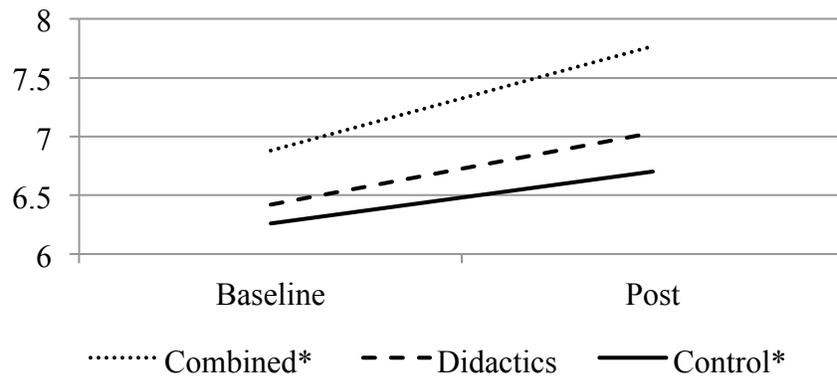| Previous Research (Tschannen-Moran & Hoy, 2007) | Current Study | Baseline | Post |
|---|---|---|---|
| Novice Teachers 6.87 (.89) | Combined $n = 5$ | 6.88 (.88) | 7.77 (.27) |
| Career Teachers 7.29 (.78) | Didactic $n = 5$ | 6.42 (.71) | 7.03 (.40) |
| | Control $n = 6$ | 6.26 (.77) | 6.70 (.41) |



*Figure 2*. Teacher Self-efficacy by Condition and Time Point.
* = Means at post, controlling for baseline scores, are significantly different at *p* = .00

**Hypothesis III: Child Behavior**. The third hypothesis stated there would be significantly better child behavior outcomes (DECA-P2 TPF, DECA-P2 BC, and BASC-2 SOS) as a result of the Combined Condition relative to the Control Condition. However, there would be non-significant differences in child behavior outcomes between the Didactic Condition and the Control Condition. This hypothesis was partially supported.

*Teacher ratings of child behavior (DECA-P2).* To assess the effect of intervention condition on the whole sample of children's TPF and BC scores on the DECA-P2, a series of hierarchical linear regressions were run. Prior to running regressions, descriptive data were compiled. See Table 8 for means and standard deviation of TPF and BC across the current study by condition and time point. A series of independent samples t-tests indicated no significant differences in TPF by school or gender at baseline. However, teachers reported significantly more improved TPF scores at post-intervention at school 2 ($M = 55.08$) relative to school 1 ($M = 50.15$) ($t (105) = -3.16$, $p = .00$), significantly more improved BC at baseline for school 1 ($M = 51.92$) relative to school 2 ($M = 46.95$) ($t (105) = 2.69$, $p = .01$), and significantly more improved BC at post-intervention for school 1 ($M = 49.91$) relative to school 2 ($M = 46.25$) ($t (105) = 2.16$, $p = .03$). In addition, teachers reported significantly more improved BC at post-intervention for males ($M = 49.76$) relative to females ($M = 46.31$). A one-way ANOVA indicated significant differences in TPF ($F (2) = 4.55$, $p = .01$) and BC ($F (2) = 7.21$, $p = .00$) at baseline by condition. More specifically, an LSD post-hoc test indicated that TPF scores for the Combined Condition ($M = 50.38$) were significantly

higher than the Didactic Condition ($M$ = 44.86) at baseline. Further, it suggested

that the Didactic Condition ($M$ = 48.11) and the Combined Condition ($M$ = 45.50)

had significantly lower BC scores at baseline relative to the Control Condition.

Therefore, school, gender, and baseline DECA scores were controlled for where

necessary in the regression models described below.

Table 8

*DECA Ratings (TPF and BC) by Condition and Phase n = 107*

| Condition | Study Phase | TPF | BC |
|---|---|---|---|
| Combined | Baseline | 50.38 (6.34) | 45.50 (8.35) |
| | Post-Intervention | 54.85 (6.37) | 48.31 (6.42) |
| Didactics | Baseline | 44.86 (8.61) | 48.11 (10.75) |
| | Post-Intervention | 53.84 (10.93) | 42.60 (9.11) |
| Control | Baseline | 47.29 (7.70) | 53.58 (8.52) |
| | Post-Intervention | 50.08 (6.56) | 52.48 (8.47) |

The regression model assessing for changes in TPF across time points,

controlling for baseline TPF and school, indicated no significant differences

between the Combined and Control Conditions ($\beta$ = .12, $SE$ = 1.35, $p$ = .12).

However, contrary to the study hypothesis, there were significant differences

between the Didactic and Control Condition ($\beta$ = .30, $SE$ = 1.32, $p$ = .00). More

specifically, the Didactic Condition ($M$ = 53.84) demonstrated significantly more

improved TPF outcomes at post-intervention relative to the Control ($M$ = 50.08).

See Figure 3 for an illustration of this finding.

*Figure 3.* TPF (*T*-Scores) by Condition and Time Point.

\* = Means at post, controlling for baseline scores, are significantly different at *p* = .00.

The regression model assessing for changes in behavioral concerns across time points, controlling for baseline BC, school and gender, indicated no significant differences between the Combined and Control Condition ($\beta$ = .06, *SE* = 1.21, *p* = .32). However, again contrary to the hypothesis, there were significant differences in behavioral concerns between the Didactic and Control Condition ($\beta$ = -.32, *SE* = 1.15, *p* = .00). More specifically, the Didactic Condition indicated significantly fewer BC outcomes (*M* = 42.60) relative to the Control Condition (*M* = 52.48). See Figure 4 for an illustration of this finding.
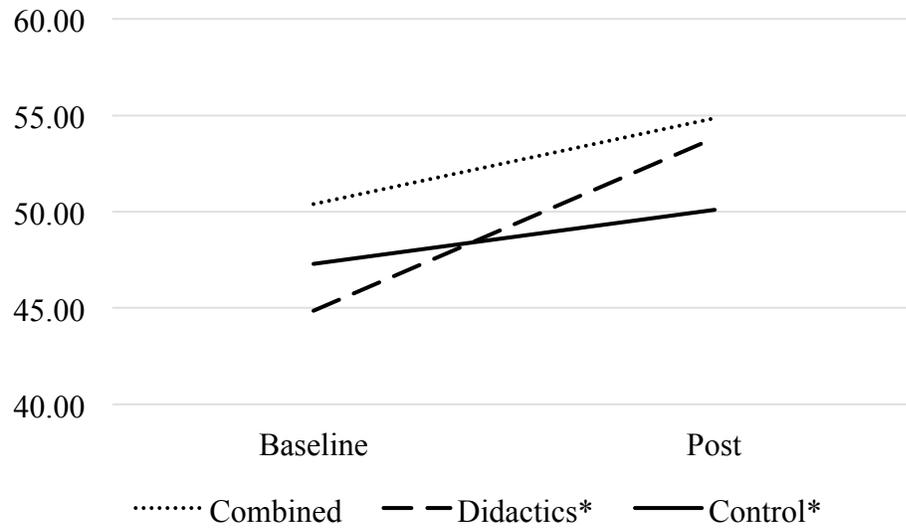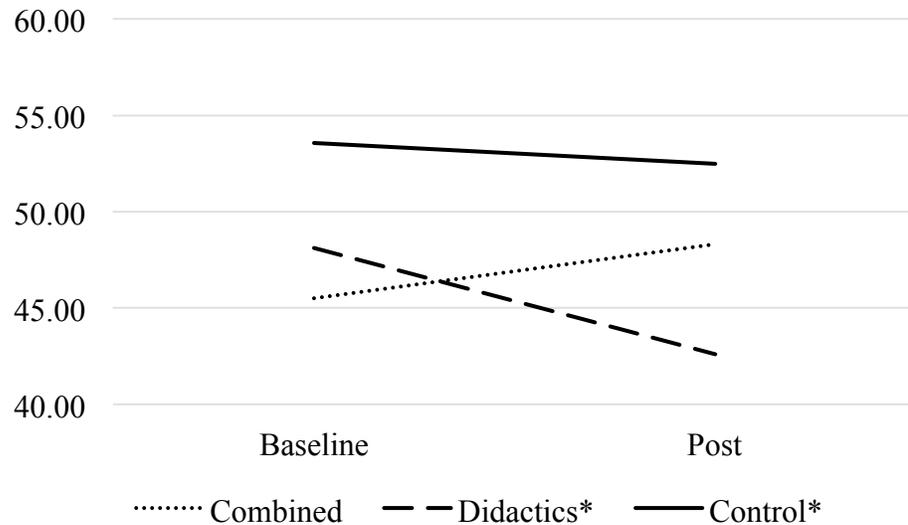
*Figure 4*. BC (*T*-Scores) by Condition and Time Point.

* = Means at post, controlling for baseline scores, are significantly different at *p*

= .00.

**Direct observations of child behavior (BASC-2 SOS).** To assess the effect

of condition on the high-risk sample of children's adaptive and maladaptive

behaviors, as observed directly by blind coders, a series of hierarchical linear

regressions were run.

Before regressions were run, descriptive data were compiled. See Table 9

for means and standard deviation of BASC-2 SOS scores for adaptive and

maladaptive behaviors across the current study by condition and time point. An

independent samples *t*-test indicated no significant differences in adaptive or

maladaptive skills by gender or school at baseline or post-intervention. Therefore,

school and gender were not controlled for in the regression models described

below. A one-way ANOVA indicated there were no significant differences in

adaptive or maladaptive behaviors at baseline (*F* (2) = .57, *p* = .57; *F*(2) = .58, *p*

= .57). However, baseline BASC-2 SOS scores were controlled for, as explained

above.

Table 9

*BASC-2 SOS Ratings by Condition and Time Point*

| Condition | Study Phase | Adaptive | Maladaptive |
|---|---|---|---|
| Combined | Baseline | 20.43 (8.64) | 14.43 (9.29) |
| | Post-Intervention | 20.21 (4.36) | 9.23 (4.87) |
| Didactics | Baseline | 19.50 (7.50) | 15.75 (10.39) |
| | Post-Intervention | 20.25 (6.86) | 11.16 (9.56) |
| Control | Baseline | 16.78 (5.46) | 19.09 (7.30) |
| | Post-Intervention | 14.78 (4.52) | 19.22 (8.94) |

Contrary to the study hypothesis, the regression model assessing for

changes in observed adaptive behaviors controlling for baseline adaptive

behaviors (not including peer interaction due to reliability issues as previously

mentioned) indicated no significant differences between the Combined and the

Control Condition ($\beta = .37$, $SE = 2.71$, $p = .11$). In addition, there were no

significant differences between the Didactic and the Control Condition ($\beta = .40$,

$SE = 2.59$, $p = .08$).

A different pattern was seen when examining findings for maladaptive

behaviors. The regression model assessing for changes in maladaptive behaviors

across treatment phases, controlling for baseline maladaptive behaviors, indicated

significant differences between the Combined and Control Condition ($\beta = -.40$,

$SE = 3.69$, $p = .05$) and no significant differences between the Didactic and

Control Condition ($\beta = -.34$, $SE = 3.52$, $p = .08$). More specifically, as

hypothesized, there were significantly lower maladaptive behavior outcomes for

the Combined Condition ($M = 9.23$) relative to the Control ($M = 19.22$). See

Figure 5 for an illustration of this finding.
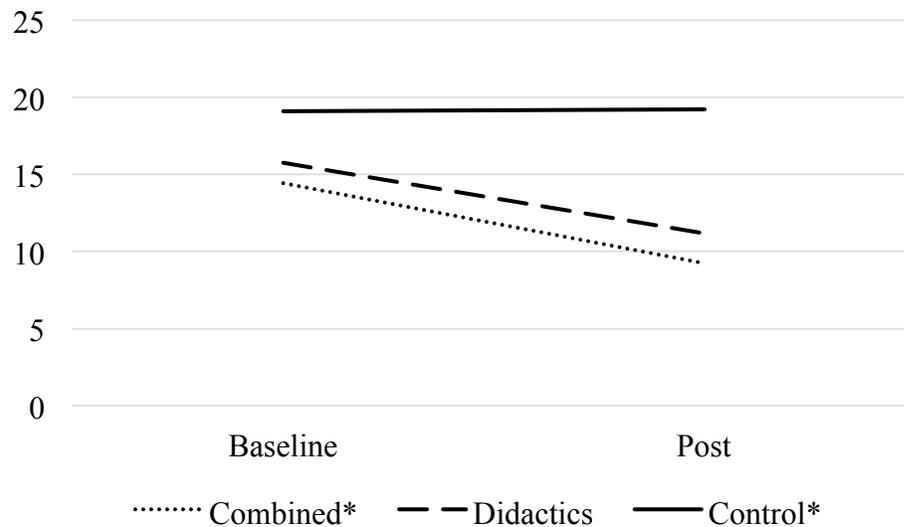


*Figure 5.* Maladaptive Behaviors by Condition and Time Point ($n = 24$).

\* = Means at post are significantly different at $p = .05$.

**Supplemental Analyses**

  **Teacher satisfaction and report of experiences.** Descriptive data were

compiled in Table 10 and graphed in Figure 6 to illustrate teacher satisfaction by

TCIT intervention phase. Additionally, all qualitative responses collected from

teachers regarding their satisfaction with TCIT were compiled in a table in

Appendix D. Teacher reports of other relevant behavior management trainings

over the year across all intervention conditions are also provided in Appendix D.

According to descriptive data, teachers were generally satisfied with the TCIT

training phases. Although formal analyses were not feasible, teachers seemed to

have generally been most satisfied and in agreement with the CDI Training ($M =$

4.91, *SD* = .12), and least satisfied and most variable in their ratings of CDI and

TDI Coaching (*M* = 4.26, *SD* = .98-1.00).

Table 10

*Teacher Satisfaction Ratings by Intervention Phase*

|  | *N* | *M* (*SD*) |
|---|---|---|
| CDI Training | 10 | 4.91 (0.12) |
| CDI Coaching | 5 | 4.26 (0.98) |
| TDI Training | 10 | 4.51 (0.61) |
| TDI Coaching | 5 | 4.26 (1.00) |
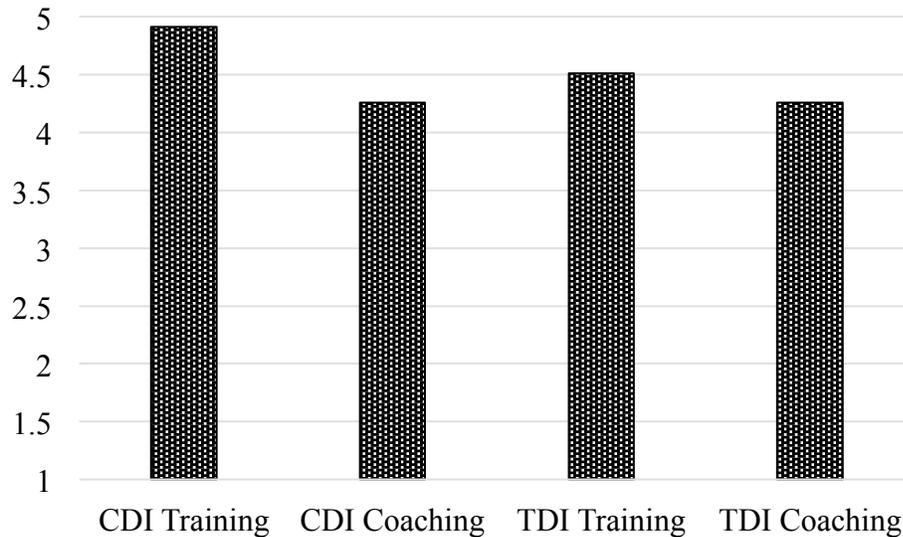


*Figure 6.* Teacher Satisfaction Ratings for Combined and Didactic Conditions (*n*

= 10).

**DPICS Skills and TSES Scores by teacher type.** To better understand

the lack of significant improvements in PRIDE skills at post-intervention and the

discrepant findings between teacher ratings and independent observations of child

behavior, descriptive data on PRIDE skills and TSES scores were examined and

compared for lead teachers and teaching assistants. This information is provided

in Tables 11 and 12. Only the lead teacher in each classroom provided ratings of child behavior.

Table 11

*Mean Levels of TCIT PRIDE Skills (BD, RF, LP) by Condition, Teacher Role, and Study Phase*

| Condition (*N*) | Baseline *M (SD)* | Mid-point *M (SD)* | Post *M (SD)* |
|---|---|---|---|
| Combined | | | |
|   Leads (2) | 5.67 (1.89) | 6.33 (1.89) | 4.17 (1.65) |
|   Assistants (3) | 5.33 (4.48) | 16.33 (7.64) | 12.00 (5.00) |
| Didactic | | | |
|   Leads (2) | 8.83 (8.72) | 10.33 (7.54) | 10.42 (11.43) |
|   Assistants (3) | 7.03 (6.55) | 8.50 (5.77) | 10.55 (11.51) |
| Control | | | |
|   Leads (2) | 4.50 (.71) | 4.67 (3.77) | 3.25 (1.06) |
|   Assistants (4) | 5.50 (2.35) | 5.58 (2.33) | 4.38 (2.68) |

As Table 11 shows, in the Combined Condition, the teacher assistants demonstrated notable improvements in PRIDE skills, with mean scores at mid-point and post-intervention three to four times higher than at baseline. However, the lead teachers in the Combined Condition demonstrated very minimal changes in PRIDE skills from baseline to mid-point, and their skill use actually decreased by post-intervention to below the baseline level. Examination of the scores for each of the two lead teachers in the Combined Condition indicates that both teachers showed this pattern. In the Didactic Condition, a modest increase occurred across conditions in the mean level of PRIDE skills for both lead teachers and teaching assistants. Further inspection of the data for the Didactic Condition showed that one lead teacher increased her PRIDE skills at post-intervention, while the other showed a slight decrease in skills at post-intervention relative to baseline scores. For teachers in the Control Condition, lead teachers

and assistant teachers failed to indicate any consistent changes across the intervention.

Table 12

*Mean Levels of TSES Skills by Condition, Teacher Role, and Study Phase*

| Condition (*N*) | Baseline *M (SD)* | Post *M (SD)* |
|---|---|---|
| Combined | | |
|   Leads (2) | 182.00 (19.80) | 184.50 (7.78) |
|   Assistants (3) | 153.97 (14.85) | 189.67 (8.62) |
| Didactic | | |
|   Leads (2) | 156.50 (4.95) | 176.50 (9.19) |
|   Assistants (3) | 152.33 (23.63) | 165.74 (7.92) |
| Control | | |
|   Leads (2) | 144.50 (3.54) | 162.50 (4.95) |
|   Assistants (4) | 153.02 (22.96) | 160.31 (13.11) |

As Table 12 shows, lead teachers in the Combined Condition had the highest TSES at baseline relative to all other teachers and conditions, yet demonstrated the smallest improvements in TSES scores from baseline to post-intervention relative to all other experimental conditions and teacher types. In contrast, the teacher assistants in the Combined Condition demonstrated notable improvements in TSES skills, with mean scores approximately 23 percent greater at post-intervention relative to baseline. In the Didactic Condition, modest increases occurred in the mean level of TSES skills for both lead teachers and teaching assistants. For teachers in the Control Condition, smaller increases occurred in the mean level of TSES scores for both lead teachers and assistant teachers across the intervention.

**Discussion**

In this implementation study of universal TCIT, Head Start teaching staff (i.e., lead teachers and teacher assistants) were trained to improve their

relationship and behavior management skills with the goal of strengthening

teacher self-efficacy and desired child behavior. By randomly assigning some

teachers to only didactic training (Didactic), others to didactic training and

coaching (Combined), and a third group to a volunteer support condition

(Control), the current study aimed to assess the effectiveness of TCIT's core

components through a pilot study. In addition to being the first pilot study to

assess TCIT-U using random assignment by classroom, the current study is also

the first to use independent ratings of blind observers to assess child behaviors.

The current study found significant benefits of the Combined Condition on

teacher skills and self-efficacy, as well as behavioral improvements for children

with the highest baseline problems (as indicated by condition-blind observations).

Findings also reveal significant positive changes in the Didactic Condition on

teacher reports of child behaviors. However, contrary to expectations, teacher

skills in the Combined Condition were no longer significant at post-intervention

and teacher reports of child behaviors did not improve in the Combined Condition.

One limitation that applies to all analyses in the current study is the current

study's small power. Below, this limitation to power will be discussed as well as

additional explanations for each study finding in greater detail.

**Teacher Skill Acquisition**

As expected, teachers receiving both didactic training and coaching

demonstrated significantly more PRIDE skills at mid-point assessment than

teachers in the Control Condition. This link between significant PRIDE skill

improvements following the full TCIT-U model's CDI phase is aligned with

previous research (Lyon et al., 2009a). Providing in vivo coaching to facilitate

correct skill usage, reinforcement and modeling seems to have enhanced teachers'

use of PRIDE skills in the current study, as hypothesized. These findings are

consistent with previous parenting (Kaminski et al., 2008) and classroom behavior

management research (Kretlow & Bartholomew, 2010; Noell et al., 2005; Reinke

et al., 2012) that has found training to be effective when it includes in-the-

moment coaching.

In contrast to hypothesized expectations, the group of teachers in the

Combined Condition did not continue to demonstrate significant improvements in

PRIDE skill composite scores at post-intervention. The goal of TDI is to provide

teachers with behavior management skills while continuing to promote their

PRIDE skills taught in the CDI phase; however, it is possible that broadening the

focus of coaching in TDI to behavior management strategies in addition to PRIDE

skills decreased opportunities to emphasize CDI skills. Similarly, in TDI, teachers

may have concentrated primarily on skills introduced in TDI at the sacrifice of

upholding their CDI skills. This possibility has also been noted in previous TCIT-

U studies using time-limited coaching (Lyon et al., 2009b).

Examination of individual TCIT skills in the current study reveals the

group of teachers in the Combined Condition demonstrated slight mean increases

in each of the four positive relationship skills (i.e., BD, RF, LP, and UP) at post-

intervention relative to baseline scores. In contrast, the Didactic Condition

demonstrated mean increases in only two of the skills (i.e., BD, LP) at post-

intervention relative to baseline. Although any speculations must be viewed

conservatively when based on trends in the current study's descriptive data, it is possible that coaching assisted teachers in practicing all the TCIT skills rather than only the skills they remembered to implement based on the didactic training.

Investigation of descriptive data for individual teachers in the Combined Condition provides additional information about their PRIDE skill performance at post-intervention. In the Combined Condition, lead teachers demonstrated little change across the intervention, compared to a three- to four-fold increase in PRIDE skills for the three assistant teachers. Previous studies have also found variability in teachers' responsiveness to the PRIDE skills (Garbacz et al., 2014; Lyon et al., 2009a), with some teachers and classroom teams showing greater responsiveness to TCIT intervention than others. One possible reason for the discrepancy in the current study is that the assistants may have been more open and available to receiving in-the-moment feedback relative to lead teachers. Teacher assistants typically provide help as requested by the lead teacher and offer support to students with behavioral and learning difficulties (Thompson, 2002). On the other hand, lead teachers serve as instructional classroom leaders and oversee all of their students (Kalsum, 2014). Due to their higher level of responsibilities, lead teachers may have perceived themselves as less available to take advantage of coaching and/or less in need of skill development. In contrast, assistants may have been more receptive to coaching as it is aimed to support child behavior management, one of their primary responsibilities. Anecdotally, assistants that demonstrated the most improvements in PRIDE skills while

receiving coaching expressed coaching was a helpful and valuable professional

development opportunity.

The time-limited, condensed coaching schedule (i.e., twice per week for 6-

8 weeks) in the current study may have also played a role in the lack of significant

changes in PRIDE skills by post-intervention in the Combined Condition. When

deciding between a time-limited or proficiency-based approach, Fernandez and

colleagues (2015b) chose a proficiency-based approach due to their experience of

limited findings with time-limited coaching. Perhaps the twice-weekly schedule

of coaching in the current study was perceived as burdensome, given the many

responsibilities and resource limitations teachers often encounter in Head Start

classrooms. In addition, the coaching time frame of 6-8 weeks may not have been

long enough to assist teachers in generalizing their skills outside of coaching

sessions. Perhaps a once per week, mastery-based training model would have

produced more substantial and long-term improvements for lead teachers. Current

implementation of TCIT-U uses proficiency and mastery guidelines based on

teacher skills rather than a time-limited coaching approach, with coaching

typically scheduled once per week (Budd & Stern, 2016).

Another potential factor related to unexpected findings regarding teacher

skills in the Combined Condition concerns the experimental design of the study.

Two classrooms in each school were randomly assigned to receive TCIT

intervention (either Combined or Didactic), and one classroom was assigned to

the Control Condition. Teachers in both TCIT intervention conditions were

trained together in the CDI didactic phase, and random selection of the classroom

to receive coaching did not occur until after CDI didactic training. This was done to keep the trainer blind to study conditions as long as possible. Additionally, TDI training did not include any discussion about coaching, as it was meant to be as uniform as possible across intervention conditions. Unlike the current study, TCIT didactic training typically includes an introduction to what will happen in coaching, allows teachers to try out the ear piece with their coach, and discusses the tendency for teachers to feel some initial awkwardness or discomfort. In doing so, trainers emphasize that the purpose of coaching is to support the teachers and assist with child behavioral improvements rather than for evaluation, and that teachers consistently have reported acclimating to the ear phone quickly and finding coaching helpful.

Previous studies have found open communication about the coaching model and objectives to be important (Mattera et al., 2013). Considering that teachers in the Combined Condition received no introduction to coaching as part of didactic training, it is possible that their receptivity to and comfort level with coaching may have been reduced, and this may have particularly affected the lead teachers. Anecdotally, one lead teacher expressed interest in fewer weekly coaching sessions and coaching during alternative times of day rather than only center time. Similarly, the other lead teacher required many rescheduled coaching sessions due to numerous absences and double booked meetings and trainings. Providing opportunities to problem-solve around coaching issues during didactic training may have allowed the trainer to more effectively address lead teachers' concerns and barriers to it.

Consistent with the current study's first hypothesis, teachers in the

Didactic Condition did not demonstrate significantly improved PRIDE skills at

mid-point or post-intervention relative to the Control group. However, teachers in

the Didactic Condition did demonstrate a modest increase in mean frequency of

PRIDE skills over the course of the intervention, suggesting some potential

benefits of TCIT didactic training. In the field of education, didactic training via

in-service workshop sessions is by far the most common professional

development format (Scheeler, Bruno, Grubb, & Seavey, 2009). The in-vivo

coaching technique used in the current study is a less commonly used training

technique that teachers may view as evaluative rather than supportive (Kretlow &

Bartholomew, 2010). To more fully examine the benefits of TCIT didactic

training with and without coaching in future studies, it would be helpful to orient

teachers to the goals and procedures of coaching in advance, provide

opportunities for them to experience it as a supportive rather than evaluative

process, and monitor teachers' perceptions of coaching sessions across training.

**Teacher Self-Efficacy**

Consistent with the second hypothesis, teachers in the Combined

Condition indicated significantly higher self-efficacy following the TCIT

intervention relative to teachers in the Control Condition. Following Campbell

(2011)'s recommendation to use a more targeted assessment of self-efficacy, the

current study used the TSES, a validated measure of self-efficacy with early

childhood teachers (Tschannen-Moran, & Hoy, 2007). This is the first study of

TCIT to evaluate teacher self-efficacy with strong psychometrics. The current

study's findings indicate the TSES (Tschannen-Moran & Hoy, 2001) is the most sensitive and valid tool for assessing self-efficacy changes associated with TCIT to date.

By demonstrating positive effects of the full TCIT-U model on teacher self-efficacy with a well validated assessment, this study is the first to indicate the promising impacts of TCIT on teachers' perceptions of their ability to manage classroom behavior. Although teachers in the Didactic Condition demonstrated increases in self-efficacy following the intervention relative to those in the Control Condition, these improvements did not reach significance. The current study's finding that the full TCIT-U model led to significant improvements in teacher self-efficacy is aligned with previous studies that have reported informal increases in teachers' behavior management confidence following TCIT (Budd et al., 2013; Filcheck et al., 2004; McIntosh et al., 2000). This finding is also consistent with a recent study that found decreases in teacher stress following TCIT (Kanine, 2016). The only other TCIT study to date that has formally assessed the construct of self-efficacy with Head Start teachers did so with descriptive analyses and did not find consistent improvements across all teachers (Campbell, 2011). As acknowledged by Campbell (2011), this is likely explained by a limited sample (i.e., 6 lead teachers), variability across coaches, and low internal consistency of their self-efficacy measure.

Investigation of teacher self-efficacy data in each condition by teacher type provides additional information about teacher outcomes across the intervention. In the Combined Condition, lead teachers demonstrated little change

in self-efficacy across the intervention, compared to a 23 percent increase in self-efficacy for assistant teachers. Furthermore, lead teachers in the Combined Condition had heightened self-efficacy ratings at baseline relative to their assistants. These lead teachers' self-efficacy ratings were also higher at baseline relative to all teachers in the other conditions. Therefore, lead teachers in the Combined Condition may have felt less motivated to practice or maintain TCIT skills over the intervention. This may help to explain the minimal improvements they demonstrated in TCIT skills over the course of the current study. Previous studies of self-efficacy have suggested individuals with high levels of self-efficacy have less room to demonstrate improvements and may be more motivated to increase job satisfaction rather than build job competence (McNatt & Judge, 2008). Additionally, with a greater increase in PRIDE skills over the course of the intervention, assistants in the Combined Condition may have indeed experienced an improved capacity to affect change in their students whereas lead teachers did not (Bandura, 1977; Tschannen-Moran, & Hoy, 2001).

Whereas assistant teachers in the Combined Condition showed large gains in both self-efficacy ratings and in PRIDE skills, in the Didactic Condition, modest improvements in both self-efficacy and PRIDE skills occurred for lead teachers and teaching assistants. Teachers in the Control Condition showed some increases in the mean level of teacher self-efficacy outcomes despite making no PRIDE skill improvements. In summary, teacher self-efficacy outcomes for the two intervention groups suggest improvements in teacher PRIDE skills may be associated with improvements in teacher self-efficacy. In addition, baseline levels

of teacher self-efficacy may be associated with teacher receptivity levels to TCIT-U.

**Child Behavior**

The third aim of the current study was to examine child behavior outcomes (DECA-P2 TPF, DECA-P2 BC, and BASC-2 SOS) following intervention in the Combined and Didactic Conditions relative to the Control. As in previous TCIT studies, the findings differed depending on which measure was used to examine child behavior change (Fernandez et al., 2008). Based on teachers' ratings, students in the Didactic yet not the Combined Condition had significantly decreased behavioral concerns and improved total protective factors relative to the Control. However, based on condition-blind observations, the most problematic students in the Combined yet not the Didactic Condition demonstrated significantly decreased maladaptive behaviors.

One possible explanation for the unexpected findings regarding teacher reports of child behavior is that, contrary to the study hypothesis, didactic training alone is more effective than didactics plus coaching in impacting teachers' perceptions of child behavior. Teachers in the Didactic Condition were introduced to the core skills of TCIT without the requirement of participating in any additional training. Didactic training sessions occurred in a familiar group format, and teachers in the Didactic Condition were also provided with generic volunteer support. Teachers in the Combined Condition, on the other hand, were provided with eight coaching sessions per phase (CDI and TDI) in addition to didactic training. For some of these teachers, coaching sessions may have been viewed as

inconvenient, burdensome, or unnecessary. Due to the time-limited nature of coaching in the current study, teachers may have felt coaching was simply undoing their usual habits of assisting children without taking the necessary time to guide them toward skill mastery. As a result, teachers in the Combined Condition may have been less likely to perceive improvements in their students' behavior, or their students may have shown less actual change than those in the Didactic Condition.

These unexpected DECA findings could also be due to the differences in teacher ratings of child behavior at baseline. At the start of the study, the Didactic Condition had significantly lower protective factor scores relative to the Combined Condition, and the Control had significantly higher behavioral concerns relative to the Didactic and Combined Conditions. Although baseline scores were controlled for in the analyses, the unequal baseline pattern indicates the Didactic and Control Conditions started out with a higher potential for regression toward the mean (Barnett, van der Pols, & Dobson, 2004). The tendency for data to regress to the mean refers to the likelihood of relatively high or low values falling closer to the mean at an initial or repeated observation point (Barnett et al., 2004). In other words, the significantly different teacher ratings of child behavior at baseline may have made these conditions more likely to demonstrate significant improvements relative to the Combined Condition. Although the Didactic and Control Conditions were each more likely to demonstrate significant improvements in overall classroom behavior, the Didactic Condition demonstrated significant improvements while the Control did not.

Therefore, for classrooms with problematic child behaviors, there may indeed be some benefits to the didactic training component of TCIT relative to no formal TCIT intervention.

Differences across individual teachers' TCIT skill performance and self-efficacy ratings provide additional explanations for the current study's unexpected child behavior findings. Only lead teachers completed DECAs in the current study. In the Combined Condition, lead teachers did not demonstrate significant improvements in PRIDE skills at post-intervention, and they reported only slight improvements in self-efficacy. Therefore, it is understandable that lead teachers in the Combined Condition would not perceive behavioral changes in their classrooms. Alternatively, assistants in the Combined Condition demonstrated notable improvements in skill use and self-efficacy. Therefore, their reports of child behavior, may have been more likely to indicate behavioral improvements aligned with the behavioral observation outcomes in the current study. Along these lines, lead teachers in the Didactic Conditions demonstrated marked improvements in their PRIDE skills and self efficacy ratings across the entire intervention. Although these improvements were not significant, they were more robust relative to lead teachers in the Combined Condition. Therefore, lead teachers in the Didactic Condition may have indeed perceived more improvements in child behavior due to their own relative improvements in PRIDE skills and self-efficacy.

The findings regarding child behavior based on independent observations by observers blind to experimental condition provide another important

perspective regarding child behavioral improvements following the intervention.

The Combined Condition demonstrated significant reductions in maladaptive

behavior from pre to post-intervention compared to the Control Condition,

whereas for the Didactic Condition did not. This finding, consistent with the

study's hypothesis, fits with previous literature that has found preventative

interventions to be particularly beneficial for students with higher disruptive

behaviors (Durlak & Wells, 1997; Fernandez et al., 2015a; Garbacz et al., 2014;

Jeffrey, McCurdy, Ewing, & Polis, 2009; Noell et al., 2005). More importantly,

this study is the first to demonstrate this finding with condition blind behavior

observations. Using this gold standard assessment of child behavior, this finding

is a particularly valuable contribution to the TCIT literature which has relied more

heavily on teacher reports to date.

The unexpected finding regarding non-significant improvements in direct

observations of adaptive behaviors in the Combined Condition also contributes

important implications to the field. Firstly, these findings may be related to

limitations of the current study. As described above, peer interaction, one of the

adaptive behavior items, was excluded from the subscale due to reliability

problems. This indicates the adaptive behavior observation composite was an

invalid measurement tool in the current study. As discussed above, the low

number of reliability observations conducted (5% at baseline and 13% at post-

intervention), may be responsible for the current study's BASC-2 SOS reliability

problems. Therefore, future studies may have more success using the BASC-2

SOS with a greater number of reliability observations.

Despite the current study's BASC-2 SOS adaptive behavior composite limitations, the unexpected non-significant adaptive behavior findings are consistent with previous TCIT studies that have found differences in sensitivity to differing scales of child behavior measures (Garbacz et al., 2014; Kanine et al., 2016). More specifically, TCIT studies that have assessed both child observations and teacher reports have found inconsistent outcomes (Fernandez et al., 2008). As mentioned previously, differences in teacher report and direct observations may be attributed to teacher biases and/or issues with direct observation reliability. In addition, these unexpected adaptive behavior observation findings may be due to the high level of behavioral problems in the sample of observed children. As previously noted, only the highest risk students in each class participated in direct observations. While high functioning children may tend to improve their adaptive behaviors following universal prevention programs such as TCIT-U (Garbacz et al., 2014), more intensive programs may be required for higher risk children to do the same.

**Satisfaction and Reports of Experience**

The current study's satisfaction ratings following TCIT-U for teachers also confirm and expand upon previous literature reporting positive consumer evaluations of TCIT intervention (Budd et al., 2013; Campbell, 2011; Filcheck et al., 2004). Although the mean satisfaction ratings for teachers in both intervention conditions were generally high (above 4.2 on a 5-point scale), descriptive data indicate teachers were more satisfied with didactic training relative to coaching. Due to the anonymous nature of the consumer evaluations, it was not possible to

formally assess for differences in teacher ratings between the Combined and Didactic Conditions.

The current study also solicited teachers' views of different aspects of TCIT-U on the consumer evaluation form. Aspects on which most teachers commented favorably included participating with all classroom teachers in didactic training, role-playing, and watching videos to reinforce skills. Teachers offered differing reactions to coaching. Some teachers reported appreciating coaching during times such as transitions and having a coach reinforce training knowledge to improve behavior/overall culture of the classroom. Others recommended having fewer coaching sessions or providing coaching only to less experienced teachers as well as those with particularly problematic classrooms. It may be that more skilled teachers and/or those whose classrooms have minimal behavior issues perceive that didactic training is enough and possibly preferred to promote classroom wide improvements. New teachers and/or those dealing with problematic classroom behaviors may find coaching more beneficial, as previous studies suggest (Mattera et al., 2013). More research is needed to better understand what influences teacher receptivity to TCIT coaching.

**Study Limitations**

One limitation that applies to all analyses in the current study is the low power and randomizing by classroom rather than individual student or teacher due to the creation of classroom assignments prior to study implementation. Randomizing intact groups to treatment conditions is common in social research (Des Jarlais, Lyles, & Crepaz, 2004; Hedges & Hedberg, 2015). The current study

used the recommended approach of controlling for covariates including baseline

outcomes measures with nested data through hierarchical linear regressions

(Hedges & Hedberg, 2015). However, future studies with greater power are

needed to examine the extent to which PRIDE skills plateau and/or decrease

following the CDI phase and the extent to which a didactic-only training group

demonstrates benefits. Further, due to the three conditions in the current study,

power was decreased relative to TCIT studies comparing the full model to a no-

treatment control (e.g., Fernandez et al., 2015a). Although TCIT effect size

estimates are not yet established, it is recommended that conservative tests for

power analyses are used in future studies to provide representative sample size

recommendations as TCIT studies tend to have less power and smaller sample

sizes than PCIT studies (Fernandez et al., 2015a).

Additional limitations regarding study design include that hierarchical

linear modeling (HLM) would have been the most appropriate method to account

for the nested structure of the data (i.e., time within child, child within classroom,

and classroom within school). However, the current sample size did not provide

adequate power to use HLM. Additionally, the current study was affected by

staffing limitations at the Head Start centers that made it difficult to arrange for

reliable teacher coverage. More consistent classroom coverage would have

allowed all teachers to participate in all trainings with their classroom teaching

teams. Teachers who were able to receive trainings with their teaching teams

reported appreciating the unique opportunity. This provided them with the

opportunity to problem-solve ways to address specific classroom behavior

challenges. However, some teachers had to take turns receiving their TDI training

sessions and providing coverage to their classrooms. The logistical difficulty

associated with scheduling didactic training in the current study is a barrier shared

with other school and research partnerships (Fernandez et al., 2015b; Mattera et

al., 2013). These issues underscore the importance of site policies that promote

program implementation, site finding, building school staff rapport, and using

creativity and flexibility when providing interventions such as TCIT-U (Budd et

al., 2016; Durlak & DuPre, 2008; Mattera et al., 2013).

**Study Strengths**

Despite its limitations, the current study is a valuable addition to the TCIT

literature. The current study was the first to assess the coaching component

separately from the didactic portion. The findings support the beneficial role of

coaching in increasing teachers' skill use at mid-training assessment as well as

teachers' self-efficacy perceptions. Findings also support the beneficial role of

coaching in reducing children's maladaptive behaviors, as indicated by direct

observations. The current study is also one of the first to formally assess the

fidelity of TCIT training with audio session recordings, which many researchers

have recommended (Campbell, 2011; Fernandez et al., 2015a; Kanine, 2016;

Lyon et al., 2009a). Furthermore, this study used videotaped observations of

teacher interactions, which allowed for the calculation of inter-rater reliability of

teacher skills. Additionally, this study is the first to implement child behavioral

observations with research assistants blind to study condition. Future work is

recommended to further examine how direct observations may confirm or

disconfirm teacher reports of child behaviors in TCIT programs.

This study builds upon the community implementation research of TCIT-

U in several respects. For one, this was the first study to use classroom support to

control for intervention time. Classroom support provided Control Condition

teachers with personnel resources equivalent in time to the intervention conditions

but without specific training in relationship skills. Further, it provided the

opportunity for the research team to build rapport with all classroom teachers and

stay informed about the daily challenges experienced by participating classroom

teachers. In efforts to further build community partnerships, two Head Start

mental health professionals attended the TCIT didactic trainings. Although the

impact of their participation in didactic trainings was not formally assessed by the

current study, the decision to provide these professionals with TCIT training

follows the spirit of a recent study that trained local school staff as trainers and

coaches (Budd et al., 2016). As noted in this TCIT-U dissemination study, it

remains important to consider sustainability and feasibility factors in laying the

ground work for community based interventions (Budd et al., 2016).

**Future Research**

To help determine if TCIT implementation will be effective, it may be

beneficial to assess baseline teacher receptivity levels. Aligned with previous

implementation research, teachers may be most likely to benefit from TCIT when

they are receptive to the intervention, partnered with school administrators who

are open and enthusiastic about TCIT, and exposed to role models from which

they can learn from and feel accountable to (Budd et al., 2016; Durlak & DuPre, 2008). Additional qualities that may make schools particularly receptive to interventions include ensuring strong partnerships with implementation personnel, understanding organizations' specific needs, and assessing organizations' capacities to implement interventions of interest (Wandersman et al., 2008).

Although the full TCIT-U program was found effective in increasing teacher skills at mid-point of intervention, improving teacher self-efficacy, and reducing maladaptive behaviors in the most problematic children, the didactic training component alone also demonstrated some positive effects. Didactic training may be attractive in settings where school staff are interested in improving their general classroom behaviors and culture, or when resources are not available for coaching. The didactic version of TCIT-U is similar in its conceptual base and some of its recommended skills to the Child-Adult Relationship Enhancement (CARE) program created by PCIT therapists. This program promotes positive relationships between adults and children in a variety of settings and may be particularly helpful for children in need of effective adult mentor relationships (Messer et al., 2015). The CARE program involves a shorter training time (4 hours) and has not yet been evaluated with teachers in an early childhood setting. Future research should also assess the benefits of proficiency or mastery-based versions of TCIT versus the time-limited approach used in the current study. Further evaluation of TCIT's critical components is required to further inform cost-effective dissemination efforts.

**Conclusion**

Despite its limitations, the current study provides several important additions to the growing body of TCIT literature. To date, this is the first pilot study of TCIT-U with random assignment. Furthermore, this study is the first to examine the effects of TCIT-U didactics separately from the full TCIT-U coaching model. In assessing the impact of TCIT-U on teacher skills, teacher self-efficacy, and child behaviors, the current study addressed some important gaps in the burgeoning TCIT literature. Future research would benefit from evaluating TCIT-U across a greater number of schools to more effectively inform efforts that promote teachers' competence in relationship and behavior management skills for children in need.

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## Appendix A

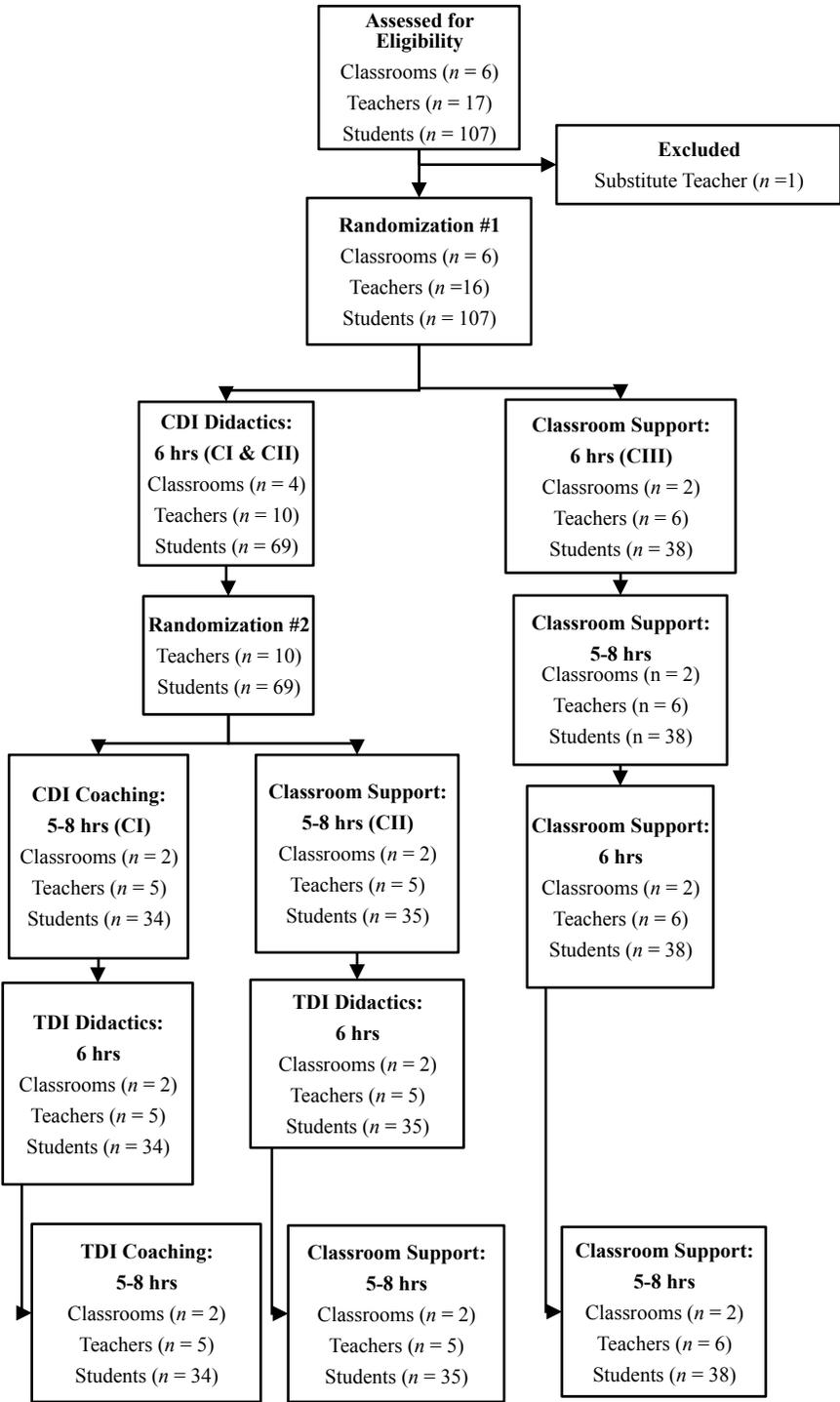## Sampling and Flow of Participants through the Study



Figure 1A. Sampling and Flow of participants through study. CI = Condition I, CII = Condition II. CIII = Condition III.

**Appendix B**

**Example CDI Didactic Session Fidelity Checklist**

School/Classroom ID:_____          Date:  _____

| ITEM | Yes | No | N/A |
|---|---|---|---|
| Rapport building activity / Take attendance | | | |
| Educate teachers about the TCIT Program | | | |
| Promote discussion regarding classroom challenges | | | |
| Overview of CDI Skills | | | |
| Introduce specifics of Labeled Praise and planned ignoring | | | |
| Model, role-play and code use of the CDI skills | | | |
| Discuss homework activity – 5 min PRIDE practice session each day | | | |
| Provide closing handouts to teachers | | | |

Trainer comments about session:

_____
_____
_____
_____
_____
_____

Integrity = Total Yes / (Total Yes + Total No) = _____ = _____%


Length of session:  _____

**Example TDI Didactic Session Fidelity Checklist**

School/Classroom ID:_____          Date: _____

| ITEM | Yes | No | N/A |
|------|-----|----|----|
| Brief rapport building activity/ Take attendance | | | |
| Review/Questions | | | |
| Present TDI Skills | | | |
| Model, role-play and code use of the TDI skills | | | |

Trainer comments about session:

_____
_____
_____
_____
_____
_____

Integrity = Total Yes / (Total Yes + Total No) = _____ = _____%

Length of session:  _____

**Appendix C**

**TCIT Coding Sheet**

Teacher ID: _____     Coder: _____

Coding Session #: _____   Date: _____     Time: _____

School/Classroom ID: _____   Circle one:  Large Group      Small Group

Circle one:       Morning meeting   Story Time     Transition     Meal Time    Free Play
              Center Activity   Circle Time        Other: _____

| CDI SKILLS | TALLY | NOTES |
| --- | --- | --- |
| **Behavior Description** (Action verbs: moving, looking, writing, holding, pushing, sitting, etc.) | | |
| **Reflection** (Shortened, exact, extended, or elaborated – same meaning) | | |
| **Labeled Praise** (Thank you FOR, I like it WHEN, Great idea TO, etc.) | | |
| **Unlabeled Praise** (Lacks a FOR WHAT—good, awesome, perfect, etc.) | | |
| **TDI SKILLS** | **TALLY** | **TALLY OF CDI F/U SKILL** |
| **Direct Command** (Directs Child — "Please walk") **&** **Follow Up** (circle if one) (CDI skills, repeat DC (after 5 sec), physical prompt—point, guide; WHEN you look here THEN I will start the story, Sit & Watch) | | |
| **Question** (Any type - true, tag, tip up, fill in the blank – "Do you know?") **&** **Follow Up** (circle if one) (CDI skills, restate as DC, physical prompt, WHEN-THEN) | | |
| **TO AVOID** | | |
| **Negative Talk** (No, don't, stop, quit, not – unless answering question) | | |

How many times this week did you use Sit-and-Watch?

**Appendix D**

**Satisfaction Ratings, Feedback, and Other Experiences**

**Table D1**

Best Features of the Session Reported by Intervention Conditions

| Phase | |
|---|---|
| CDI Training | - Learning how to praise children for good behavior, using nice words, being patient<br>- It help me and my co-teacher use the steps with some of the children and it work<br>- Making a statement, example (pick up the crayon off the floor), thank you for picking up the crayon.<br>- The CDI Do and Don't<br>- Being able to come back and visit our efforts (same week) was beneficial, better sense of effectiveness.<br>- The opportunity to role-play helped to reinforce the likeliness of us (teaching team) using the strategies and language necessary to implement the program.<br>- Is when I gotten a chance to look at other teachers and how they are using the information from the Teacher-Child Interaction<br>- The video and handouts<br>- The videos and the practice with each other<br>- Practicing the PRAISE methods helped me to realize what I do well and I need to do better.<br>- Being able to come as a team<br>- Role playing scenarios to better understand |
| CDI Coaching | - I really appreciated the emphasis placed on the room for individualization within this method of behavior management.<br>- Praising a child who wasn't listening when they began to listen |
| TDI Training | - Receiving the information that I can use in my classroom, watching the videos on how the teachers was giving out command and the direction, repeating what the children's was saying<br>- Now with these training sessions I'm going to be more effective in my way of reducing behaviors and have more positive teacher-child interactions<br>- Learning what words to use, when asking children directed interaction for behavior Praise, statement (sit in chair)<br>- Reminder about not using permissive-seeking language to cut down on confusion/unclear expectations.<br>- Being more attentive to student interests and patterns of behavior (and reflecting) has helped to eliminate/decrease certain undesired behaviors in the classroom<br>- The videos<br>- Being able to participate all three teachers in all sessions.<br>- Praise the opposite<br>- See the videos but also practice among ourselves and observe how my children interact when I used them in the classroom.<br>- Discuss using labeled praise, try not to use unlabeled praise |
| TDI Coaching | - Being able to internalize and rehearse the new strategies with the trainer before practicing them with students.<br>- Having a coach reinforce training knowledge to improve behavior/overall culture of the classroom.<br>- TDI rules, following through after commands, giving effective commands, praise the opposite, talking to children about sharing and listening<br>- The one-on-one coaching during transition time |

Table D2

Suggestions for Improvement

| Phase | |
|---|---|
| CDI Training | - Being able to accommodate teachers who feel like addressing severe behavioral problems is more urgent than we being <u>trained</u> to address.<br>- Provide this program to parents<br>- Examples on how to reach children with IEP's |
| CDI Coaching | - Only come one day a week, it felt overbearing at times. Please come at drop off and transition times, not <u>only </u>at choice time.<br>- The coach should go to help teachers who are having a hard time with their children, or who are new, or who are not nice to children |
| TDI Training | - Add parents to this training |
| TDI Coaching | - Training not back to back days |

Table D3

Other Comments and Reactions Reported by Intervention Conditions

| Phase | |
|---|---|
| CDI Training | - Is there any particular reason why the two components (CDI and TDI) are separated for instruction/training purposes? (Why can't they be taught simultaneously?)<br>- Thank you for all the information<br>- The workshops were really good<br>- All info was very helpful |
| CDI Coaching | - Thank you for the useful information |
| TDI Training | - To teach this program to the other teachers here at [school name]. I feel that this information will be very helpful so this way they will learn how to work and interact with their children.<br>- This is a marvelous training, I hope all the classrooms will get this training too.<br>- These concepts have already been taught by CLASS, and other various trainings we have been sent to<br>- In the few sessions that we had, me and my co-worker are seeing how positive children are reacting.<br>- During our training of TCIT our classroom has improved a lot especially with children who had behavior challenges.<br>- By giving them praise, by watching videos and seeing how other teachers deal with disciplining students, student sitting in my one minute chair, actually works.<br>- TCIT training has helped me to help shy children open up and feel more confident. |
| TDI Coaching | - The things learned from the formal training empowered us as teachers to take more initiative to analyze the individual behaviors of students more thoroughly.<br>- This training (both sections) is very impactful if reinforced consistently. I appreciate the consistency in coaching and advising to improve and enhance my practices, greatly.<br>- I still feel the same way as I did when this training started. <u>Inexperienced </u>and <u>unskilled </u>teachers could benefit from this training. |

Table D4

Other Relevant Experiences Teachers reported by Intervention Condition

| Phase | |
|---|---|
| CDI Training | - Teach for America/AmeriCorps trainings (6+ hours per month)<br>- Licensure courses – Dominican University<br>- Head Start program training, Head Teacher training<br>- I got a lot of conversation from other teachers<br>- CLASS trainings<br>- Ongoing informal observation or conversations with other teachers<br>- CLASS<br>- CLASS training<br>- Small group workshop<br>- Class activities |
| CDI Coaching | - Professional Development Sessions (Teach for America) on engagement and classroom culture<br>- No, I have always felt confident<br>- We have numerous trainings we go to including the CLASS training that teaches the same things.<br>- Yes, I have benefited from informal observation or conversation with other teachers<br>- Experience engaging in activities that children learn in |
| TDI Training | - Class model language<br>- CLASS training through CPS partnership office<br>- CLASS and in-service meetings<br>- Team meetings that include our coordinator<br>- Team meetings<br>- The class from social emotions class but not as helpful as this technique (TCIT)<br>- CPS workshops like challenging behavior<br>- Discussing suggestions with other teachers |
| TDI Coaching | - No I have always felt confident |

Table D5

Other Comments reported by Teachers in Control Condition

| |
|---|
| - Next time, we could have support inside of the classroom |

Table D6

Other Relevant Experiences Teachers reported in Control Condition

- CPS teacher trainings
- Teach for America Coaching
- CPS trainings
- CPS trainings
- Classroom meetings with co-teachers
- Observations
- CPS workshop on behavior management
- CPS workshops (behavior management)
- TSG (Transitions)
- Professional Development with School Agency