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The Effect of Teacher-Child Interaction Training (TCIT) on Kindergarten Student's Classroom Behavior and Student-Teacher Relationships

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THE EFFECT OF TEACHER-CHILD INTERACTION TRAINING (TCIT) ON KINDERGARTEN STUDENT'S CLASSROOM BEHAVIOR AND STUDENT-TEACHER RELATIONSHIPS

by

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Abstract

Teachers and researchers alike have long debated the most effective strategy for managing children's classroom behavior. While many methods exist, the most common, and yet most debated, approach in the U.S. remains to be exclusionary discipline, such as suspension and expulsion. However, research has consistently shown this method to be ineffective and even harmful for both students and teachers, as well as incredibly inequitable (Emmer et al., 2015; American Psychological Association, 2008; Tobin et al., 1996 as cited in Emmer et al., 2015). These clear detriments highlight the need for different, more effective classroom management strategies. The current proposed study will address one such alternative, Teacher-Child Interaction Training (TCIT). It will delve into the effects of a TCIT intervention on kindergarten-aged children's classroom behavior, as well as the intervention's impact on student-teacher relationships. Over the course of a semester, four classrooms (consisting of a total of 88 kindergarten students and 4 kindergarten teachers) will be randomly assigned to either a TCIT or control condition. Given past research, it is expected that children who receive the TCIT intervention will show increased prosocial behaviors, decreased emotional dysregulation, and decreased aggressive/disruptive behaviors over time in comparison to children in the control group. Additionally, at the end of the intervention (T3), positive student-teacher relationships are projected to be more equitably distributed across student racial groups in the experimental group than in the control group.

Keywords: Kindergarten, Teacher-Child Interaction Training (TCIT), Prosocial Behavior, Emotional Dysregulation, Aggressive Behavior, Student-Teacher Relationships

Introduction

Classroom management is a term used to define strategies implemented by teachers that are intended to promote positive classroom behavior in students, limit any disruptive or distracted student behavior, and overall foster an efficient and safe classroom environment. There is an abundance of behavioral management approaches available to teachers, ranging from quick interactions, like using a class chant to grab students' attention, to thorough teaching and discipline styles, like using restorative justice practices in the classroom (Emmer & Sabornie, 2015). However, the vast number of options has made determining the most effective classroom management strategies challenging to both teachers and researchers alike. An effective approach needs to benefit both teachers and students. In order to utilize class time effectively, teachers require a method that reduces student's difficult behaviors and maintains a calm and concentrated classroom environment. However, it is imperative that classroom management strategies also prioritize children's well-being.

Unfortunately, one of the most common classroom management approaches in the United States, exclusionary discipline, fails to achieve either of these goals. This major shortcoming points to the need for research into a more effective option for both teachers and students. This proposed study looks into one promising possibility, Teacher-Children Interaction Training (TCIT). TCIT is a classroom management intervention that aspires to improve children's social, emotional, and behavioral competence and decrease any challenging classroom behaviors through the improvement of student-teacher relationships (Overview of Teacher-Child Interaction Training, 2019). This proposed study aims to determine if TCIT is indeed effective in achieving these goals by examining the effects of a TCIT intervention on kindergartener's

prosocial behavior, emotional dysregulation, aggressive and disruptive behaviors, as well as their relationship with their teacher.

Exclusionary Discipline

Exclusionary discipline, which consists of both suspension and expulsion, is alarmingly common in the United States. In the 2013-2014 school year alone, more than 2.6 million students (5.3 percent) in public schools received at least one suspension (National Center for Education Statistics, 2019). Despite the regularity of such punitive punishment, there is no evidence that this type of discipline actually reduces problem behaviors (Emmer et al., 2015). In fact, it has been shown that exclusionary discipline actually worsens the school environment in several ways. For example, lower levels of academic quality were reported at schools that use high rates of exclusionary discipline due to more time being spent on discipline-related matter than teaching (American Psychological Association, 2008). Similarly, exclusionary discipline reduces students' opportunity to learn, which is one of the strongest predictors of students' academic and social success (Wang et al., 1997 as cited in Emmer et al., 2015). Furthermore, students report feeling less safe in schools that use harsh punishments (McNeely et al., 2002 as cited in Emmer et al., 2015) and increased rates of exclusionary discipline are related to higher likelihood of school dropout and juvenile justice involvement (Council of State Governments, 2011 & Nicholson-Crotty et al., 2009 as cited in Emmer et al., 2015). Due to these extensive negative outcomes and lack of evidence behind exclusionary discipline's effectiveness, some have even concluded that suspension and expulsion actually serve as reinforcers of negative outcomes, rather than punishment like they are intended to be (Tobin et al., 1996 as cited in Emmer et al., 2015).

In addition to its ineffectiveness, exclusionary discipline has also been shown to be extremely inequitable. Several studies have shown that African American students are increasingly overrepresented in suspension and expulsion rates, school-based arrests, and corporal punishment (Emmer et al., 2015). Similar patterns have been found with Latinx, Native American, low-income, disabled, and LGBTQ+ students (Emmer et al., 2015). These disparities are not due to a difference in frequency or severity of disruptive behaviors in these groups of students as it was found that behavior differences are not significantly sufficient in accounting for these the increased use of exclusionary discipline with these groups of students (Skiba et al., 2011 as cited in Emmer et al., 2015).

The abundant evidence against the effectiveness and equity of exclusionary discipline make the need for a different behavioral management strategy glaringly apparent. In order to better prevent and reduce behavioral problems in school, research has indicated that classroom interventions aimed at improving student-teacher relationships and reinforcing appropriate behavior, such as restorative justice practices or Teacher-Child Interaction Training (TCIT), are more effective options.

Alternative Classroom Management Strategies

There are many alternatives to a punitive, exclusionary school discipline system. For example, the use of restorative justice practices in the classroom has become an increasingly common alternative behavioral management approach. Although restorative justice is defined several ways throughout literature, Fronius et al. (2016) describes its use in a school setting as a non-punitive approach of conflict management. It focuses on addressing the root cause of behavioral issues and repairing harmed relationships through community problem solving, rather than punitive punishment. For example, instead of suspending a student that initiated a physical

fight with another student, a school implementing a restorative justice practice might hold a group mediation conference. This would consist of a meeting between any people involved in or impacted by the harmful action with the goal of communally deciding on a reasonable restorative sanction for the offender (Fronius et al., 2016). These may include actions like an apology, restitution, or behavioral changes (Fronius et al., 2016).

Restorative practices have been shown to be an effective alternative to punitive discipline. In fact, in just one semester, González (2012) found that an implementation of a restorative justice program reduced absences by 44%, school tardiness by 50%, office referrals by 94%, and out-of-school suspensions by 88% in a Colorado high school. Additionally, expulsions were reduced by 82% and referrals to law enforcement were down by 72% since the program began (González, 2012). Gregory et al. (2016) found similar benefits when studying two large, diverse high schools with a total of 4,552 students. After implementing two full-day restorative practice workshops with both schools' teachers and administration, the researchers found that greater restorative practice implementation levels were significantly correlated with better teacher-student relationships (Gregory et al., 2016). Additionally, their findings point to restorative practices being more equitable. They found that restorative practices were significantly related to increased teacher respect ratings from students across varying racial and ethnic groups, as well as fewer differences in number of conduct/defiance referrals issued to Asian/White students and Latino/African American students (Gregory et al., 2016).

Early Prevention of Negative Behavior

Although restorative practices have proven to be very helpful in reversing the damage of punitive systems in upper levels of schooling, early prevention of disruptive behavior and reinforcement of prosocial behavior at a young age might decrease the need to repair harm later

on. It has been shown that behavioral difficulties, such as aggression, disruptiveness, and noncompliance, can start as early as 2 years old and are likely to continue over time (Shaw et al., 2005 as cited in Lyon et al., 2009). They have also been associated with negative outcomes in the future, including criminality and antisocial behavior (Vitelli, 1997 as cited in Lyon et al., 2009). Additionally, early behavioral difficulties have the potential to damage student-teacher relationships (Birch & Ladd, 1998). While there are several individualized therapeutic approaches to treat early childhood behavioral problems, they are not always accessible options, and many children that ultimately develop psychosocial problems do not receive adequate mental health care (Stephenson, 2000 as cited in Lyon et al., 2009). Since the majority of children in the U.S. are enrolled in school by kindergarten, school-based interventions help to address the problem of accessibility and are able to prevent these behaviors on a larger scale. They have also been shown to be effective. In a meta-analysis, behavioral or cognitive-behavioral school-based prevention programs were found to be consistently effective (Wilson et al., 2001 as cited in Lyon et al., 2009). Due to the potential for such an early emergence of these problems, their long-lasting effects, and the effectiveness of early school-based interventions, the need for more early school-based interventions becomes apparent. One such intervention is Teacher-Child Interaction Training (TCIT).

Parent-Child Interaction Therapy (PCIT)

TCIT was developed as an adaptation of Parent Child Interaction Therapy (PCIT), which was established by Sheila Eyeberg. Eyeberg (1988) started PCIT as a family-based psychological treatment for preschool aged children struggling with externalizing behaviors, including those with behavioral and emotional disorders (Lyon et al., 2009; Stankus, 2020). The aim of PCIT is to establish a warm, trustworthy parent-child relationship that allows parents to teach their child

prosocial skills that replace inappropriate and maladaptive behaviors (Eyeberg, 1988). Prosocial

behavior can be broadly defined as actions done with the intent to benefit a person/people other

than one's own self (Batson & Powell, 2003). Two meta-analyses on studies using PCIT have

shown PCIT to be effective in decreasing externalizing behavior problems in preschool aged

children with disruptive behavior disorders (Thomas & Zimmer-Gembeck, 2007; Ward, Theule,

& Cheung, 2016).

PCIT consists of two phases of treatment: Child-Directed Interactions (CDI) and Parent-

Directed Interactions (PDI) (Eyeberg, 1988). In an instructive session with a therapist, both of

these phases are first taught to parents without the child present (Eyeberg, 1988). The child is

included in later sessions once the parent has learned the necessary skills from both phases

(Eyeberg, 1988). These skills include PRIDE skills (Praise, Reflect, Imitate, Describe,

Enthusiasm) and Don't rules, which are behaviors to avoid, such as criticism (Eyeberg, 1988).

When the child is present, sessions occur with the parent(s) and child in a playroom that has a

one-way mirror, which the therapist is behind. The parent is either coached by the therapist

through a "bug-in-ear" device or with the therapist present in the room. At the end of each

session, the child's progress is discussed privately with the parent(s).

Attachment Theory

The fundamental principles of PCIT, such as improving parent-child relationships and

shaping children's behavior, are rooted in several psychological theories. These include

attachment theory, social-learning theory, and operant conditioning theory. Attachment theory

describes the bond between humans, usually in the context of caregivers and children, in which

proximity is sought out to receive care, protection, and comfort (Bretherton, 1992). It was

primarily developed by John Bowlby and Mary Ainsworth. Attachment theory emphasizes that

secure parent-child attachments develop from warm, responsive parenting, while insecure attachment styles tend to stem from unresponsive, inconsistent, neglectful, or abusive parenting (Bowlby, 1944 as cited in Stankus, 2020). In these latter cases, children learn that caregivers are not dependable or reliable. Secure attachment with caregivers has been associated with several positive outcomes, including better social and emotional regulation skills, less physiological stress, better developmental outcomes, and healthier self-esteem and self-confidence (Hoffman et al., 2017). The initial phase of PCIT, child-directed interaction (CDI), aims to develop secure attachments between parent(s) and child through the use of PRIDE skills. This sets up a strong foundation so that children's behavior can be shaped in the second phase of treatment.

Operant Conditioning Theory

Once a more secure attachment has developed between the parent and child, specific behaviors can be targeted by the therapist. Many of the techniques used to shape behavior in PCIT stem from operant conditioning theory. B.F. Skinner, who spearheaded this theory, defined operant behavior as behavior that is affected by its consequences (Staddon & Cerutti, 2003). Therefore, operant conditioning uses consequences to shape behavior by reinforcing desired behaviors and reducing unwanted behaviors (Staddon & Cerutti, 2003). In his work on this theory, Skinner makes a point to emphasize the difference between reward and reinforcement. He states that the term 'reward' implies that compensation is received for behaving in a desired way, whereas reinforcement is just a consequence that strengthens or increases the likelihood of a desired response (Skinner, 1963). In the context of PCIT, children's pro-social behavior is reinforced through the use of PRIDE skills by the parent, while their disruptive behavior is ignored and therefore not reinforced.

Social-Learning Theory

While operant conditioning theory accounts for much of the behavior shaping used in PCIT, some psychologists, such as Albert Bandura, do not believe that reinforcement can explain all types of learning. Instead, Bandura hypothesized in his social-learning theory that people also learn behaviors through direct experience or by watching others (Bandura, 1977 as cited in Stankus, 2020). In fact, Bandura even goes as far to say that "a good example is therefore a much better teacher than the consequences of unguided actions" (Bandura, 1971 as cited in Stankus, 2020). Social-learning theory highlights the role of modeling within the learning process, in which behaviors are learned, whether intentionally or not, through the influence of another person (Bandura, 1971 as cited in Stankus, 2020). When applying this theory to PCIT, the therapist serves as a model for the parent(s) when demonstrating how to use PRIDE skills and talking with them through the bug-in-ear device. In turn, the parent(s) model appropriate behavior for their child during sessions. According to Rosenthal and Bandura (1978), children in PCIT might experience several different effects from observing this modeled behavior. These include learning new patterns of behavior and coping strategies from the model, strengthening or weakening different responses based on the consequence the model experiences for their own behaviors, facilitating a response that mirrors the model's behavior, and increased self-regulation (Rosenthal & Bandura, 1978).

Adaptation of PCIT to a Classroom Setting

Due to PCIT's efficacy in decreasing disruptive behaviors in young children, it makes sense that it was modified to be used in a classroom setting where it could reach more children. Although PCIT focuses on improving parent-child relationships, there is also extensive research on the importance of positive early teacher-student relationships. For example, Pianta and

Nimetz (1991) found that warm, trusting, and open teacher-student relationships in kindergarten and first-grade were associated with children showing better frustration tolerance, good work habits, and good social skills both at home and in the classroom. In comparison, they found that negative teacher-student relationships were associated with deficits in prosocial behavior and increased disruptive behaviors in young children (Pianta & Nimetz, 1991).

Not only do early teacher-student relationships affect children's behavior in their current grade level, but research has also shown that these relationships serve as significant predictors of externalizing behaviors in future grade levels. Specifically, higher levels of conflict between young children and their teachers are related to increased externalizing behaviors later in school (O'Connor, 2012; Pianta & Stuhlman, 2004). In particular, negative or high-conflict relationships between kindergarteners and their teachers have been shown to predict increased rates of behavior problems, decreased prosocial behavior, and increased aggression in future grade levels (Pianta et al., 1995 as cited in Pianta & Stuhlman, 2004; Birch & Ladd, 1998). On the other hand, improvement in kindergarten teacher-student relationships has been demonstrated as predictive of positive adjustments in children's behavior in the first grade (Pianta & Nimetz, 1991). The existing research is resounding in its findings that positive early teacher-student relationships are highly important in predicting children's positive behavior and outcomes, which speaks to the need for a behavioral management intervention that improves the quality of these relationships.

In addition to the importance of early teacher-student relationships, a need for a classroom adaptation of PCIT was also necessary to increase accessibility to this type of intervention. Individual families may not seek out PCIT when needed due to a variety of barriers, including financial reasons or due to the stigma surrounding therapy. Atkins et al. (2006) found

that school-based, teacher-implemented prevention and intervention programs are helpful in treating early behavioral problems, especially for groups that are less likely to pursue traditional mental health services. Additionally, some children might not have a stable home life where PCIT is possible. The implementation of a classroom-adapted version of PCIT might be especially important for these students. Garmezy (1984) explained that a major protective factor for high-risk children is having a relationship with any adult in their life that allows them to experience security and self-esteem (Pianta & Nimetz, 1991). For many children, the adult most readily available to them is their teacher.

Teacher-Child Interaction Training (TCIT)

The first adaptation of PCIT to a classroom setting occurred in a case-study done by McIntosh, Rizza, and Bliss (2000). They termed this adaptation 'Teacher-Child Interaction Therapy.' However, Lyon et al. (2009) later renamed this intervention Teacher-Child Interaction Training (TCIT), which remains its current title. This was because Lyon et al. (2009) found it important to emphasize that children who receive TCIT do not necessarily have clinical diagnoses like they might in PCIT, and the teachers using TCIT are not mental health practitioners. TCIT includes the same principal aspects of PCIT, while adapting some features to be more appropriate and effective for a classroom. Some of the main modifications include that TCIT impacts multiple children at a time, trains teachers as a group, occurs in a natural classroom setting rather than a standardized clinical setting, and uses skill subsets that are specifically applicable to a classroom setting (Lyon et al., 2009).

TCIT aims to improve the social, emotional, and behavioral competence of young children. This is done primarily by improving teacher-student relationships. Another objective is to prevent and decrease challenging classroom behaviors, such as aggression, and increase

prosocial behavior (Overview of Teacher-Child Interaction Training, 2019). Additionally, it intends to increase teacher self-efficacy and job satisfaction (Overview of Teacher-Child Interaction Training, 2019). These goals are achieved by training teachers in two phases. In the first phase, they are taught to use positive attention skills, particularly PRIDE skills, to reinforce desired behavior and improve teacher-student relationships. In the second phase, teachers learn how to implement effective commands and behavioral strategies.

The first phase of TCIT is the child-directed interaction (CDI) phase. In CDI, the children lead a classroom or play activity, while the teachers simply observe and respond to desired behaviors (Overview of TCIT, 2019). Teachers are trained to use PRIDE skills when addressing desired behavior. The PRIDE acronym stands for praise, reflect, imitate, describe, and enthusiasm (Lyon et al., 2009). Each of these skills are used intentionally to increase certain outcomes. For example, praising children's appropriate behavior increases the likelihood of that behavior in the future, while also providing warmth in interactions (Lyon et al., 2009). Reflecting appropriate speech not only reinforces that type of language but also demonstrates active listening and understanding (Lyon et al., 2009). Additionally, imitating proper behavior or play offers positive attention to desired behaviors and encourages cooperation (Lyon et al., 2009). Teachers can also describe desired behavior, which reinforces it and helps express interest (Lyon et al., 2009). Finally, it is important that teachers are enthusiastic while engaging with their students to foster warm, secure relationships. In addition to the PRIDE skills, teachers are also taught to avoid the use of criticism, ignore unwanted behavior, and reduce the number of unnecessary questions asked by children. This phase strengthens teacher-student relationships and reinforces desired behaviors, which provides a solid foundation for effective discipline and behavior shaping to occur in the second phase.

In the second phase, renamed the Teacher-Directed Interaction (TDI) phase for use in TCIT instead of the original PDI, teachers are taught how to effectively implement clear, straightforward commands and behavioral management strategies in their classroom (Overview of TCIT, 2019). Some of the specific skills learned and utilized in this phase include determining what makes a command effective, how to follow through after using a command, strategically praising the opposite of disruptive behavior, and using the "Sit and Watch" discipline method (Lyon et al., 2009). The purpose of this phase is to create more effective teacher-child interaction patterns and reduce common behavioral problems (Overview of TCIT, 2019).

The current literature on TCIT has shown it to be an effective method of improving teacher and student behavior and relationships. Studies have consistently found that teacher's use of PRIDE (Praise, Reflect, Imitate, Describe, Enthusiasm) and positive attention skills with children significantly increased after the implementation of TCIT (Fernandez et al., 2015; McIntosh, 2000; Lyon et al., 2009; Devers, 2014; Rossi, 2015; Budd, Garbacz, & Carter, 2016; Stankus, 2020). These effects seem to be long-lasting, as Devers (2014) also found that teachers' use of these skills were maintained at the same level as at the end of the study when followed-up on eight months after the study ended.

Not only are teachers' positive attention skills increased, but negative attention has also been shown to decrease. For example, Fernandez et al. (2015) found that kindergarten and first grade teachers who received TCIT showed significantly decreased rates of negative attention in comparison to their baseline scores. Contrarily, teachers who were in the control group maintained their initial ratio of negative to positive attention throughout the entire study (Fernandez et al., 2015). In addition, teachers who received TCIT reported significantly less distress relative to disruptive student behavior post-study in comparison to teachers in the control

group (Fernandez et al., 2015). These effects held true when comparing TCIT to other classroom management strategies. For example, when compared to a class token economy approach called the Level System, in which children increased "levels" throughout the day for appropriate behavior and received activity-based rewards when reaching the top three levels, Filcheck et al.'s (2004) case-study found that a preschool teacher's use of criticism only decreased significantly after TCIT was implemented. Lyon et al.'s (2009) study results also confirmed this finding of significantly decreased use of criticism. Stankus (2020) also found that overall negative interactions significantly decreased, and positive student-teacher relationships were increased after TCIT was implemented.

In addition to the impact on teachers, research has also shown TCIT to be successful in changing children's behavior, although much less extensively. For example, Budd, Garbacz, and Carter's (2016) case-study found that teachers' ratings of children's total protective factors scores significantly increased, while their ratings of children's behavior concerns significantly decreased after the implementation of TCIT when controlling for teacher effects. Rossi's (2015) findings mirrored these results, and also found that teachers' ratings of kindergarten children's behavior showed significant increases in optimistic thinking, social awareness, decision making, and self-awareness after the TCIT intervention. In a single-subject study of three preschool teachers and three preschool children who had not been responsive to other interventions, Stankus (2020) found TCIT to be successful in significantly decreasing inappropriate, noncompliant, and off-task behaviors in all three children. These changes in behavior seem to be directly tied to the changes in teacher behavior. For example, Devers' (2014) multiple baseline study found that changes in teacher behavior, such as increased use of PRIDE skills, were significantly correlated to decreased disruptive behaviors in preschool children.

Limitations of Current Research

Although the current literature on TCIT is extensive and impressive given the novelty of the intervention, there are also several limitations. Many of the current studies on TCIT focus only on TCIT's impact on teachers, rather than also including children in their analysis. When the effects on children have been investigated, it has not focused on the specific goals of TCIT, which include increasing emotional regulation and prosocial skills or decreasing aggression. Instead, the limited research has concentrated on children simply disrupting class less. In addition, many studies investigating TCIT as an intervention focus on children in preschool. This makes sense considering PCIT was originally developed for preschool aged children. However, many children do not have access to preschool. Since kindergarten is included in the U.S. public school system, it is more accessible and therefore might be a better grade to start prevention methods in. Furthermore, many of the current studies on TCIT are correlational or use case studies to indicate causation, which makes them less generalizable. Finally, although many of the current studies on TCIT use diverse samples, the current literature does not investigate if TCIT is more equitable than other, more common forms of behavioral management, such as exclusionary discipline.

Current Study Overview

The proposed study will supplement the aforementioned studies' exploration into the effects of TCIT by focusing on aspects that were left out of previous research. More specifically, this quasi-experiment will address the gap in the literature through the examination of the effects of a TCIT intervention on kindergarten student's aggression, emotional regulation, and prosocial behavior. Additionally, the study will investigate the impact of the TCIT on the quality of student-teacher relationships, as well as how equitable (meaning how equally distributed positive

student-teacher relationships are across student racial groups at T3) TCIT is in comparison to other types of behavioral management strategies used in the school.

There are a number of hypotheses that will be tested in this study. One hypothesis that students in the experimental group will show increased prosocial behaviors over time in comparison to students in the control group, based on their scores on the TOCA-C Prosocial Behavior subscale (Bradshaw & Kush, 2020). It is also hypothesized that emotional dysregulation scores of the students will decrease over time in the experimental group but will remain the same in the control group. Another hypothesis is that aggression will decrease in the experimental group over time but will not decrease in the control group. Finally, it is hypothesized that positive student-teacher relationships will be more equitable in the experimental group than they will be in the control group at the end of the study.

Proposed Method

Participants

The population of interest is kindergarten age children, as well as their kindergarten teachers. Participants will be recruited from a school in the United States. The school will be recruited via a flyer distributed to all of the schools in one district. If multiple schools volunteer to participate, the school will be picked via a random number generator. According to GPower, this study would require at least 36 participants to achieve power of .8 given the parameters of α = .05 and a large estimated effect size (based on Rossi, 2015). In the 2011-12 school year, the National Center for Education Statistics found the average elementary school class in the U.S. has about 22 students and this study will infer that most public elementary schools have 4

kindergarten classes. Therefore, it is anticipated that this study will sample approximately 88 students and 4 teachers.

Based on the average age of kindergarteners in the United States, the children's expected ages will range from 5 to 7 (National Center for Education Statistics, 2018). It is expected that the classroom will be comprised of approximately 48% White students, 27% Hispanic students, 15% Black students, 5% Asian/Pacific Islander students, 4% students of two or more races, and 1% Native American students based on enrollment information from 2017 (National Center for Education Statistics, 2020). Although there is limited gender demographic information on kindergarteners, there were slightly more males under the age of nine (20,422,000) than females under the age of nine (19,526,000) in the United States in 2019 (US Census Bureau, 2020). Therefore, it can be expected that there will be slightly more males than females in this study. Each participant will be compensated. Students will choose a small sticker and teachers will receive a gift card to buy office or school supplies for their classroom.

Materials

Student Social, Emotional, and Behavioral Functioning

To assess the student's social, emotional, and behavioral functioning, teachers will complete three of the seven subscales from the Teacher Observation of Classroom Adaptation-Checklist (TOCA-C; Bradshaw & Kush, 2020). The three specific subscales that will be used are the Aggressive/Disruptive Behavior subscale (six items), Prosocial Behavior subscale (four items), and Emotional Regulation Problems subscale (five items). Teachers will be asked questions such as if a student "doesn't get along with others," "shows empathy and compassion for others' feelings," and "stops and calms down when angry or upset." Teachers will respond using a 6-point continuous scale (1- "never", 6- "almost always") for each subscale. Some items

will be reverse coded. The individual subscales will be scored separately, and scores will be

derived from rescaling and averaging the items on the subscale. This will result in a score

ranging from one to six for each subscale, where a higher score indicates more of the construct.

According to Bradshaw and Kush (2020), each of the subscales demonstrate high internal

reliability, with Cronbach's alpha measured at .867 for the Aggressive/Disruptive Behavior

subscale, .836 for the Prosocial Behavior subscale, and .87 for the Emotion Regulation Problems

subscale.

Student-Teacher Relationships

The Teacher-Student Relationship Scale (Brinkworth et al., 2018) will be used to

measure how positive and negative both students and teachers perceive their relationship with

each other to be. Students and teachers will be asked how they feel about 14 questions on a 5-

point continuous scale. The measure is divided into a positivity subscale of nine questions and a

negativity subscale of five questions. The measure for teachers will use words for each point on

the scale, while the measure for students will use cartoon faces as each point on the scale and

they will respond by pointing at the drawing of the face they most relate to. For teachers, the

questions range from "How excited would you be to have <student's name> again next year?" to

"How much do you enjoy helping <student's name> learn?" For students, some of the questions

include "How much do you enjoy learning from <teacher's name>?" and "How friendly is

<teacher's name> towards you?" Students will be asked each question by a researcher without

their teacher present. A dyadic variable will be created for student-teacher relationships by

averaging each student's rating of their teacher and teacher's rating of each student. Reliability

for both positive and negative subscales for teachers and students was found to be acceptable by

Brinkworth et al. (2018). For teachers, Cronbach's alpha was calculated to be .90 for the

positivity subscale and .78 for the negativity subscale (Brinkworth et al., 2018). For students, Cronbach's alpha for the positivity subscale was measured at .92 and .78 for the negativity subscale (Brinkworth et al., 2018).

Procedure

At the end of the fall semester, teachers will be given an informed consent sheet, which will include preliminary information about the study and what their participation might look like. After providing informed consent, teachers will be compensated with gift-cards. Since children cannot legally provide informed consent, parent(s) consent for their children's participation in the study will first be acquired. After parent consent has been received, informed assent will be obtained from the children. They will be given the option to either participate or not, be told that they will not be rewarded or punished for their decision and told that they can stop participating at any time without penalty.

Upon receiving informed consent, all four teachers will complete the three subscales (Aggressive/Disruptive Behavior, Prosocial Behavior, and Emotional Regulation Problems) of the TOCA-C measure about each of their students. They will also complete the teacher portion of the Teacher-Student Relationship Scale at this time. Finally, they will provide demographic information about each student.

If they choose to participate, children from all four classrooms will complete the student portion of the Teacher-Student Relationship Scale at the end of the fall semester (T1). They will not complete this measure in their classroom with the teacher observing, but instead at a separate place on campus with only researchers present to read the questions to the children. This set-up will be implemented to avoid children's answers being influenced by the presence of their teachers. Children will be partially de-briefed at this time and receive a sticker as compensation.

Before winter break, half of the teachers will be randomly assigned to the TCIT condition. These two teachers will attend two three-hour training workshops conducted by two licensed psychologists during the winter break. Each workshop will focus on a different phase of TCIT, with the first focusing on Child-Directed Interaction (CDI) and the other about Teacher-Directed Interaction (TDI). Although TCIT workshops are usually held more frequently over a longer period of time, Devers (2014) found that this adaptation was a more accessible option for teachers and was still found to be effective in combination with in-person coaching sessions throughout the semester. The two teachers in the control condition will not receive TCIT. Instead, these teachers will receive a control training during the winter break on an unrelated topic, such as a training on how to teach phonics.

In the spring semester, the teachers who received TCIT will implement the TCIT skills they learned in their classrooms. Throughout this semester, they will also receive weekly 20-minute in-person coaching sessions from a licensed psychologist trained in PCIT/TCIT. These sessions will occur during class time via "bug in the ear" technology. The psychologist will be present in the classroom but will stay in the back of the room to limit distractions for the children. Coaching sessions will consist of approximately 5-minutes of observation, 10-minutes of coaching, and 5-minutes of immediate feedback during a break. The purpose of the coaching sessions is to reinforce skills and provide supportive feedback, as well as to ensure that teachers are properly and continuously implementing the skills learned. The teachers in the control group will continue using the schools' typical behavioral management strategies that they used prior to winter break.

In the middle of the spring semester (T2) and at the end of the school year (T3), all four teachers will complete the three TOCA-C subscales again for each student in their class.

Additionally, both teachers and students, upon providing informed assent, will retake the appropriate section of the Teacher-Student Relationship Scale. After each session, children will be compensated again with a sticker of their choice. Teachers, parents, and children will be fully debriefed after T3.

Ethics

Considering the United States' excessive use of exclusionary discipline and the inefficacy of these practices, this proposed study provides an important opportunity to look into the effectiveness of an alternative behavioral management method, Teacher-Child Interaction Training (TCIT). Participation in this study will be fully voluntary. Teachers will provide informed consent. Additionally, before participating in the self-report measures, children will be asked for informed assent. This means that they will learn about the tasks they will be asked to do if they choose to participate. They will also be informed that they can choose not to participate at all or can stop participating at any point without losing their compensation. The compensation (a sticker or piece of candy) will not be incentivizing enough to coerce participation.

This study is minimal risk for participants and involves no deception. Participants will not be exposed to or asked about any information that is more uncomfortable than experienced in everyday life. For example, answering questions about different student's aggression might elicit slightly uncomfortable feelings in teachers. However, they might be asked about the same topic by a supervisor or parent on a regular day. In order to minimize any negative feelings experienced during participation, both teachers and students will be debriefed after participation in both T1 and T2. Additionally, besides providing basic demographic information, participants will not be asked to provide any sensitive information about themselves.

Although the risk is minimal, the study's sample does consist of young children, so it will involve working with a vulnerable population. This is necessary because this study specifically aims to investigate the effects of TCIT on the target population of kindergarten students. However, protection of the participants will be prioritized. For example, the participants' teachers are facilitating the TCIT intervention, rather than researchers that are strangers to the children. This is intended to make children feel safer during the intervention since it is an adult they already know. Additionally, the measures will be administered and completed at the school, which is a location that the children are already familiar with. The children's privacy will also be prioritized since the data collected for this study will be anonymous. This will be ensured as the participant's responses will be classified by number, not by name.

The immediate benefits of this proposed study include positive outcomes for the participants (both students and teachers) in the experimental condition, such as the expected effect of more positive student-teacher relationships. Additionally, TCIT has been shown to improve teacher self-efficacy and job satisfaction (Devers, 2014; Fernandez, 2015; Filcheck et al., 2004; Lyon, 2004). Students and teachers will also be compensated for their participation, which will add to participant satisfaction. Finally, this proposed study will contribute important knowledge to existing psychological literature and society at large. Overall, the numerous benefits of this study outweigh any potential minimal risk to participants.

Predicted Results

Multilevel modeling will be used to test the relationships between the TCIT intervention, time, and children's prosocial behavior. This analysis will account for the nested nature of these data (e.g., students within the classroom) by simultaneously accounting for several covariate

fixed effects and student random effects. Random effects are modeled for the purpose of statistical accuracy but are not directly connected to the hypotheses. Children who experience the intervention are expected to show significantly increased prosocial behaviors over time based on the responses of their teachers on the TOCA-C Prosocial Behavior subscale in comparison to their first ratings. Additionally, they are expected to show increased prosocial behavior over time when compared to children who do not receive the intervention. This predicted result is supported by several theories, as well as empirical research. For example, the concept of operant conditioning, in which learning occurs through reinforcement and consequences, suggests that the use of PRIDE skills in TCIT will reinforce student's prosocial behavior. In addition, attachment theory also points to this predicted result, as Pianta and Stuhlman (2004) found that secure and improved teacher-child relationships are related to children's prosocial behavior. These predicted results also follow research by Schaffner, McGoey, and Venesky (2016) in which a TCIT intervention was found to significantly increase prosocial behavior in preschoolers diagnosed with disruptive behavior disorder.

Further, these analyses will demonstrate that emotional dysregulation scores will decrease over time in the experimental group but will remain the same in the control group. A separate multilevel model test will be run to assess this hypothesis. This predicted result is grounded in attachment theory, which states that secure attachments lead to greater social-emotional regulation skills in children (Bowlby, 1944 as cited in Stankus, 2020). Additionally, Pianta and Stuhlman's research (2004) found that children's relationships with their early education teachers is a significant factor in children's social-emotional growth. Since a primary goal of TCIT interventions is to improve student-teacher relationships, it is logical to infer that these improved relationships will lead to similar emotional regulation outcomes in children.

In regard to the third hypothesis, researchers predict to see aggression/disruptive behavior decrease over time in children in TCIT classrooms but remain stable in the control group. This will be tested with another multilevel model. Since TCIT focuses on directly modifying aggressive and disruptive behavior through consequences and reinforcing pro-social behavior instead, the data are expected to show significant decreases in children's TOCA-C aggression/disruptive subscale scores when in the TCIT group (McIntosh et al., 2000). This is supported by operant conditioning theory.

Lastly, the relationships between the TCIT intervention, student-teacher relationships, and student race will be assessed using a mixed model ANOVA. It is expected that positive student-teacher relationships will be more equitably distributed across student racial groups in the experimental group at T3 than they will be in the control group. The data are expected to reflect a main effect of race on student-teacher relationship scores, as well as a main effect of the intervention on student-teacher relationship scores. Additionally, an interaction effect of student race and intervention on the dyadic student-teacher relationship scores is expected to be found, such that those in the intervention condition will report significantly more positive relationships across student racial groups than those in the control group. These outcomes are expected due to Devers' (2014) findings, in which TCIT was found to be an especially beneficial intervention for children in ethnically diverse classrooms.

Discussion

The proposed study looks into the impact of Teacher-Child Interaction Training (TCIT) on children's social, emotional, and behavioral functioning in a classroom setting, as well as its effect on their student-teacher relationships. Through the examination of how kindergarten

students' classroom behaviors and relationships with their teacher change over the course of a semester in response to TCIT, this study will aim to determine if a TCIT intervention is a beneficial classroom management strategy.

It is imperative to conduct this study in order to advance the state of existing literature on TCIT. Although the existing research is plentiful when considering how novel the intervention is, past research mainly focuses on the influence of TCIT on teacher's skills and efficacy, rather than also examining its impact on children. Investigating the effects of a TCIT intervention specifically on children's behavior is important, especially since some of TCIT's main goals include reinforcing positive classroom behaviors and reducing negative and disruptive ones (Overview of Teacher-Child Interaction Training, 2019). The predicted findings of this study suggest that these goals will indeed be achieved. For example, it is predicted that children in the TCIT condition will show increased prosocial behavior, which is supported by prior research (Pianta & Stuhlman, 2004; Schaffner, McGoey, and Venesky, 2016) and operant conditioning theory. Similarly, the anticipated findings of decreased emotional dysregulation over time for children in the TCIT condition are also backed by both empirical research (Pianta & Stuhlman, 2004), as well as attachment theory. Finally, the expected decrease in the TCIT condition aggression scores is based on both operant conditioning theory and McIntosh et al.'s (2000) research.

While this proposed study is intended to fortify the existing research, there are still anticipated limitations. For example, this study will be limited to a convenience sample of participants from a single school. This potentially limits the generalizability of the study because the sample might not be large or diverse enough to truly represent the population as a whole. In the future, similar research might find it helpful to include several schools in their sample to

circumvent this limitation. Another limitation is the use of teacher ratings on the TOCA-C

subscales, rather than one of the experimenters conducting the ratings of students' classroom

behaviors. Although teachers do have good insight into their students' behaviors due to

observing them in the classroom environment for a year, having them complete these ratings

may introduce bias into the results on these subscales. Additionally, the random effects of both

students and teachers serve as limitations to this study. While multilevel modeling will account

for the random effects of individual students, it cannot do so for potential random effects of the

teachers due to the study only having four teachers total. Furthermore, although students'

random effects are accounted for in multilevel modeling, the specific approach for this study

comes with additional limitations. For example, there will be multiple comparisons within this

shared data set due to running three multilevel models, which could potentially lead to a multiple

comparisons bias in the results. In order to account for this limitation, future research should use

a larger sample and consider using multivariate multilevel modeling.

     In future research, this topic can be expanded in many ways. One such way might be to

compare a TCIT condition to other, more specific classroom management strategies in addition

to just a control. Comparing a TCIT intervention with similar methods, such as restorative justice

models, might be especially helpful in assessing if TCIT is truly the most effective approach to

classroom management. It might also be helpful in determining which classroom management

strategies are better at reducing or increasing different classroom behaviors. Additionally,

researchers might want to assess how a TCIT intervention impacts other facets of children's

social, emotional, and behavioral competencies, such as their self-esteem or empathy. The

variables could also be expanded to also measure academic outcomes in the future, such as

classroom participation or academic performance.

Classroom management is a highly contemplated issue among both researchers and teachers. Teachers need strategies that maintain a calm and concentrated classroom environment, and children deserve a positive relationship with both school and their teacher. Therefore, it is imperative that different behavioral management strategies are both effective in modifying student's difficult behavior so that teachers can utilize class time effectively, while also remaining beneficial to children's well-being. Many common approaches to this dilemma, such as exclusionary discipline, have not been able to achieve these goals simultaneously (American Psychological Association, 2008; Emmer et al., 2015). Nevertheless, Teacher-Child Interaction Training has shown promise that both are indeed achievable. The continuation of research on this topic and the implementation of this intervention in schools is crucial in fostering positive classroom experiences for both teachers and students.

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Appendix A

Teacher Observation of Classroom Adaptation- Checklist

<u>Aggressive/Disruptive Behavior Subscale</u>
1. Breaks rules
2. Doesn't get along with others
3. Harms others
4. Gets angry when provoked by other children
5. Fights
6. Teases classmates

<u>Prosocial Behavior</u>
1. Is friendly
2. Shows empathy and compassion for others' feelings
3. Is rejected by classmates*
4. Has many friends

<u>Emotion Regulation Problems</u>
1. Stops and clams down when angry or upset*
2. Changes mood quickly
3. Impulsive
4. Easily frustrated
5. Easily upset

*Reverse Coded

Note: Response anchors were arrayed along six points (Never - 1; Almost always – 6).

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Appendix B

Teacher-Student Relationship Scale

<u>Student Items</u>

Positivity sub-scale
1. How much do you enjoy learning from <teacher's name>?
2. How friendly is <teacher's name> towards you?
3. How often does <teacher's name> say something encouraging to you?
4. How respectful is <teacher's name> towards you?
5. How excited would you be to have <teacher's name> again next year?
6. How motivating are the activities that <teacher's name> plans for class?
7. How caring is <teacher's name> towards you?
8. How much do you like <teacher's name>'s personality?
9. Overall, how much do you learn from <teacher's name>?

Negativity sub-scale
1. How often do you ignore something <teacher's name> says?
2. During class, how often do you talk when <teacher's name> is talking (for instance, when you are supposed to be listening)?
3. How often does <teacher's name> say something that offends you?
4. How unfair is <teacher's name> to you in class?
5. How angry does <teacher's name> make you feel during class?

<u>Teacher Items</u>

Positivity sub-scale
1. How much do you enjoy helping <student's name> learn?
2. How friendly is <student's name> towards you?
3. How often do you say something encouraging to <student's name>?
4. How respectful is <student's name> towards you?
5. How excited would you be to have <student's name> again next year?
6. How motivating does <student's name> find the activities that you plan for class?
7. How caring is <student's name> towards you?
8. How much do you like <student's name> personality?
9. Overall, how much does <student's name> learn from you?

Negativity sub-scale
1. How often does <student's name> ignore something you say?
2. During class, how often does <student's name> talk when you are talking (for instance, when <student's name> is supposed to be listening)?
3. How often do you say something that offends <student's name>?
4. How unfair are you to <student's name> in class?
5. How angry do you make <student's name> feel during class?

Note: Response anchors were arrayed along five points.

For example: Not at all / Slightly / Somewhat / Quite a bit / A tremendous amount; Not at all friendly /Slightly friendly / Somewhat friendly / Quite friendly /Extremely friendly; Almost never / Once in a while / Sometimes / Frequently / Almost all the time; or Almost nothing / A little bit /Some / Quite a bit / A great deal.

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