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Addressing Disruptive Behaviors in the Preschool Classroom: An Adaptation of Parent-Child Interaction Therapy (PCIT) for Head Start Teachers

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ADDRESSING DISRUPTIVE BEHAVIORS IN THE PRESCHOOL CLASSROOM:

AN ADAPTATION OF PARENT-CHILD INTERACTION THERAPY (PCIT)

FOR HEAD START TEACHERS

by

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ABSTRACT

Addressing Disruptive Behaviors in the Preschool Classroom: An Adaptation

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Several researchers have begun to investigate early intervention and prevention

programs, seeking to alter the trajectory of early-onset behavior problems. While it

appears that multi-modal programs are the most promising approach, researchers have

only recently begun to evaluate programs that use a similar treatment approach across

settings and there is currently little information about classroom-based treatments for

disruptive behaviors among preschoolers. The purpose of this study was to develop a

classroom-based intervention based on the Parent-Child Interaction Therapy (PCIT)

model developed by Eyberg. In addition, this study provides an initial investigation of

the efficacy of this program with an emphasis on evaluating changes in teacher behavior

and treatment acceptability. The intervention was provided to a group of 26 teachers

from 13 Head Start classrooms. Results indicated minimal changes in observed teaching

behavior and no significant changes in teachers' self-efficacy. Although the intervention

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was rated as being acceptable by teachers overall, ratings were somewhat lower for sessions dealing with child-directed activities; teacher comments indicated that this component was difficult to implement in the classroom. Observations of child behavior indicated reductions in both prosocial and disruptive behaviors. Teacher-completed rating scales indicated statistically significant reductions in disruptive child behaviors and child behavior problems, although the magnitude of these changes was generally small. The implications of these findings will be discussed and modifications will be proposed for increasing the effectiveness and acceptability of this intervention.

(175 pages)

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CHAPTER I

INTRODUCTION

Problem Statement

Researchers have recently given increased attention to the identification of behavior disorders in preschool children and the development of appropriate intervention and prevention programs targeting this age group (Campbell, 1995). This interest has emanated from several recent longitudinal studies showing that disruptive behavior disorders (e.g., attention-deficit/hyperactivity disorder, oppositional defiant disorder, conduct disorder), substance abuse, and criminal behaviors often originate in early childhood (Campbell, 1995; Hämäläinen & Pulkkinen, 1996; Kratzer & Hodgins, 1997; Loeber & Dishion, 1983). In her review of the literature, Campbell (1995) noted that parent and teacher ratings of behavior problems are quite stable from early childhood well into adolescence. While many children may display transient conduct problems as toddlers or preschoolers, a subset of children demonstrate disruptive behaviors that either continue or escalate over time. These problem behaviors ultimately have an adverse impact on children's social competence, academic performance, and relationships with parents and teachers (Campbell, 1995; Coie & Kupersmidt, 1983; Reid & Patterson, 1991).

Patterson and his colleagues have developed and extensively tested a theoretical model describing the development, maintenance, and sequelae of antisocial behaviors (Patterson, Capaldi, & Bank, 1991; Reid & Patterson, 1991). According to their Social-

Interactional Model, children's antisocial behaviors evolve in the context of negative and coercive parent-child interactions. Parents are said to inadvertently promote undesirable child behaviors (e.g., tantrums, noncompliance with parental commands) via the use of ineffective parenting behaviors. Such parenting is characterized by the use of harsh, inconsistent discipline and inadequate supervision of children. In these relationships, children may be reinforced when they "get their way" or avoid compliance with parental directives by displaying aversive behaviors. At the same time, parents are negatively reinforced for avoiding or ignoring their children, thus prompting even lower rates of supervision and monitoring. As children's disruptive behaviors increase in both intensity and frequency, parents' attempts to cope with these behaviors often grow increasingly ineffective.

In a second phase of the model, Reid and Patterson (1991) suggested that children take this "baggage" from earlier coercive exchanges with their parents into future settings, as they interact with teachers and peers. Children may elicit a response from their teachers that closely resembles the behavior of their parents. At the same time, their high levels of aggressive and disruptive behaviors prompt rejection by peers (Coie & Kupersmidt, 1983). Thus, many of these children continue to display increasing levels of aggression and antisocial behavior, fall behind their peers academically, and seek out deviant peer groups for acceptance (Dishion, Patterson, Stoolmiller, & Skinner, 1991).

The Social-Interactional Model provides several implications for intervention and prevention efforts. First, it suggests that early intervention is critical to thwart the

progression of children's antisocial behavior. As children grow increasingly independent and parental monitoring decreases, disruptive behaviors become "crystallized" and intervention becomes more difficult (Eron, Huesmann, & Zelli, 1991). Second, interventions that involve a child's parents and seek to modify coercive parent-child interactions are central in addressing behavior problems before they escalate. Indeed, numerous intervention packages designed to teach parents effective parenting strategies have been developed and proven successful in this regard (Serketich & Dumas, 1996). A third implication is that treatment and prevention efforts must include multiple settings. Because children are likely to evoke coercive interactions with teachers and peers once they begin school, both home and school settings would likely need to be included for a program to show long-term effectiveness (Reid & Patterson, 1991).

Consistent with the Social Interactional Model, several large-scale early intervention studies have recently been conducted in an attempt to address behavior problems across settings via the use of multiple components (e.g., parent training, classroom-based interventions, social skills training; Barkley et al., 2000; Conduct Problems Prevention Research Group, 1992, 1999; Tremblay et al., 1992; Tremblay, Pagani-Kurtz, Mâsse, Vitaro, & Pihl, 1995). In general, the promising results of these projects suggest that intervention services that are provided before age 5 across both home and school settings can help to ameliorate the long-term impact of children's early behavior problems (Greenberg, Domitrovich, & Bumbarger, 2001). However, until recently there has been relatively little connection between the interventions developed

for use in home versus classroom settings. Rather than providing an integrated approach to treatment, researchers have tended to provide multiple, disparate interventions. In part, this appears to reflect the reliance upon treatments that have been validated in home versus classroom settings. While it is obviously desirable to utilize empirically validated treatment approaches, it seems likely that utilizing an integrated approach would serve to enhance the outcomes achieved. Using similar interventions across settings may improve generalization, increase consistency regarding the behavioral expectations and consequences that children encounter, and provide greater opportunities for collaboration between parents and teachers.

Purpose of the Study

The purpose of this study was to develop an intervention for use in the preschool classroom based on an empirically validated parent training model (i.e., Parent/Child Interaction Therapy; Eyberg, 1988). By integrating this model into the classroom, it was hoped that this school-based component could be used in future research along with traditional parent training in a comprehensive early intervention package. The focus of this study was on the adaptation and implementation of this program in Head Start preschool classrooms. As such, an emphasis was placed upon adapting resource materials for the program, evaluating changes in teacher behaviors in the classroom over the course of the intervention, and evaluating how acceptable the program was to a group of preschool teachers. Clearly, the impact of the intervention on children's behavior in the classroom was also of interest and data regarding changes in child

behaviors were collected. However, it is acknowledged that additional research with long-term follow-up is needed to investigate the impact of this program when integrated with home-based interventions and to determine whether using a similar approach across settings increases the effectiveness of multi-modal early intervention.

CHAPTER II

REVIEW OF PREVIOUS LITERATURE

Behavior Problems in Preschool Children

Prevalence and Nature of Behavior Problems
in Preschoolers

Many researchers have overlooked behavior problems in preschool children,

focusing their efforts instead on school-age and adolescent populations (Campbell,

1995). The assumption was that serious problems were infrequent during the preschool

years and those problems that were evidenced were likely to remit as preschoolers

passed through this difficult stage of development (Hembree-Kigin & McNeil, 1995;

Olson & Hoza, 1993). However, recent studies suggest that many problematic child

behaviors emerge during this period and can impair preschoolers' social and pre-

academic functioning (Speltz, McMellan, DeKlyen, & Jones, 1999; Wakschlag &

Keenan, 2001). Further, these behavior problems often become entrenched with the

passage of time rather than representing a transient developmental stage (Eron et al.,

1991).

Richman, Stevenson, and Graham (1982) found that behavior problems were

reported by roughly 10% of parents of 3-year-old children. Similarly, according to a

literature review completed by Campbell (1995), prevalence studies conducted across

diverse cultural and geographic settings indicate that 10% to 15% of preschool-age

children display behavior problems in the "mild" to "moderate" range of severity. Her

review suggested that more severe behavior problems are displayed by roughly 7% to 14% of the preschool population. Thus, it is apparent that many young children struggle with significant behavior problems and, in turn, an equally sizable number of parents, care providers, and early education teachers struggle along with them.

Descriptive studies of behavior problems in young children suggest that parent and child caregiver concerns include behaviors that are potentially symptomatic as well as those which would be expected to occur during normal development (Campbell, 1995; Martin, 1991). In particular, parents and child care providers frequently report concern about disruptive and difficult to manage child behaviors (e.g., inattention, restlessness/ hyperactivity, fighting with peers, temper tantrums, noncompliance; Campbell, 1995; Martin, 1991). Campbell cited several studies suggesting that these concerns tend to escalate when children are between 2 and 3 years of age and, among nonclinical children, show a decline during the preschool years (i.e., ages 3 to 5 years). However, as will be noted in the following section, a substantial number of problem behaviors continue to progress and pose a serious concern as children pass from early to middle childhood.

Stability of Behavior Problems over Time

Several longitudinal studies have been conducted to examine the stability of behavior problems that emerge during the preschool years (see Campbell, 1990; Campbell & Ewing, 1995 for reviews of this literature). These studies have included normative samples of children (e.g., Richman et al., 1982), children who were referred

by their parents and described as "hard-to-manage" (e.g., Campbell & Ewing, 1990),

and children identified as high risk for behavior problems on the basis of teacher report

or behavioral observation (e.g., Egeland, Kalkoske, Gottesman, & Erickson, 1990).

Despite the considerable variability in the samples investigated and methodology used,

the results of these studies indicate that behavior problems either continue or escalate

into middle childhood and adolescence for approximately half of these children

(Campbell, 1995). The continuity and trajectory of early-onset behavior problems are

influenced by both child-specific (e.g., severity of behavior problems, cognitive and

language abilities) and family context variables (e.g., socioeconomic status [SES],

maternal depression/ psychopathology, parental discipline practices; Campbell &

Ewing, 1990; Campbell, March, Pierce, Ewing, & Szumowski, 1991; Heller, Baker,

Henker, & Hinshaw, 1996; Loeber & Dishion, 1983; Loeber & Stouthamer-Loeber,

1986; Schonfeld, Shaffer, O'Conner, & Portnoy, 1988; Wakschlag & Keenan, 2001).

Unfortunately, the continuation of behavior problems into later stages of

development often represents a "snowball effect," with children acquiring an increasing

repertoire of deviant behavior and displaying behavior problems in a wider array of

settings (Reid, 1993). In addition, the overt behavior problems demonstrated by young

children tend to become more severe and are later accompanied by covert forms of

antisocial behavior (e.g., lying, cheating, stealing; McMahon & Wells, 1998). The

adverse long-term effects of early-onset behavior problems have been well documented

in the research literature. As they progress through early childhood and enter

elementary school, these children are more likely to be rejected by peers and struggle to

acquire academic skills (Coie & Kupersmidt, 1983; Ladd, Price, & Hart, 1988; Yoshikawa, 1994). In adolescence, children who display this pattern are at high risk to experiment with substance use and drop out of school (Patterson, Forgatch, Yoerger, & Stoolmiller, 1998). Behavior problems continue to increase in severity during this period and emerge into the broader community, leading to adolescent involvement with the juvenile justice system (Patterson et al.). Finally, in adulthood the frequency of antisocial personality disorder is quite high in this population as are adverse effects such as underemployment, lower levels of education, poor physical health, and substance abuse (Hämäläinen & Pulkkinen, 1996; Kratzer & Hodgins, 1997; Yoshikawa, 1994). Clearly, the sequelae of early behavior problems have a significant and deleterious impact on the lives of children as well as the communities in which they reside. It is therefore not surprising that vast research efforts have been devoted to the creation of theoretical models to explain this progression and to develop appropriate treatment programs to remediate these problems.

Social Interactional Model of
Antisocial Behavior

Gerald Patterson and his colleagues at the Oregon Social Learning Center have been extensively involved in developing and testing models to account for the progression of early-onset behavior problems in children (Patterson, 1982; Patterson et al., 1991; Patterson et al., 1998; Reid & Patterson, 1991). The model is interactive in nature, with particular attention given to the reciprocity between child behavior problems and maladaptive family functioning. While it is acknowledged that contextual

factors contribute to the development of antisocial behavior (e.g., maternal depression, parents' criminal behavior, low socioeconomic status, high levels of marital discord; Webster-Stratton, 1990; Yoshikawa, 1994), Patterson et al. (1991) have focused on a set of coercive family processes believed to have their origins in the parent-child relationship. Reid (1993) provided a vivid description of these relationships when he stated that "at a very early age, high-risk, oppositional children are engaged in day-to-day warfare with their parents, and their parents are heavily involved in the process" (p. 247).

In his research, Patterson (1982) noted that the parents of antisocial children tended to display ineffective parenting strategies in response to children's aggressive or noncompliant behaviors. Specifically, the responses shown by these parents were often irritable and noncontingent on child behaviors. Aversive interactions in these families tended to be more frequent and longer than those in control families. Rather than relying on positive reinforcement to increase desirable behaviors, a pattern of negative reinforcement and coercion was observed. The parents of antisocial children were found to inadvertently reward their children by succumbing to aversive child behaviors (e.g., tantrums, aggression, whining), thereby increasing the likelihood that the children would utilize similar behaviors to "get their way" in the future. In addition, children tended to replicate the coercive and often aggressive behaviors of their parents both at home and in other settings.

As children's aversive behaviors increase over time, Patterson (1982) suggested that parents are negatively reinforced for either ignoring or giving in to their children's

inappropriate behavior. Specifically, when parents' efforts to address disruptive child behaviors repeatedly prove ineffective, they increasingly fail to notice behavior problems. This proves to be negatively reinforcing for parents in that it allows them to either avoid or escape their child's aversive behavior. Thus, parents are reinforced for providing less frequent supervision and lower levels of involvement with their child. Resultantly, children's disruptive behaviors continue to escalate and the nature of the parent-child relationship becomes increasingly negative.

When children enter school and their social milieu expands to include teachers and peers, a similar coercive process unfolds and children begin to engage in "warfare" in these new environments (Reid & Patterson, 1991). This transition represents a time of considerable risk, as many of these children do not enter school with the social skills required to interact appropriately with peers, comply with adult directives, or adapt to a more structured setting. Aggressive and deviant behaviors may increase during this time and these children can encounter negative interactions with teachers, adults in the community, and their peers. During middle childhood and adolescence, parent supervision decreases further and many of these children seek out deviant peer groups where antisocial behaviors are accepted, valued, and reinforced (Dishion et al., 1991; Patterson et al., 1998).

The Social-Interactional Model has several implications for the treatment and prevention of conduct problems (Reid & Patterson, 1991). The need to intervene early in this progression, thereby avoiding the negative long-term consequences of children's behavior problems is evident. As children grow older and increasingly independent of

parental supervision, conduct problems become more and more crystallized and coercive interactions grow increasingly entrenched (Eron et al., 1991). Though attention is often given to the salient antisocial behaviors of adolescents, intervention and prevention efforts have proven to be more effective if provided when children are young and have not advanced toward more severe forms of deviant behavior (Tremblay et al., 1995; Yoshikawa, 1994). Increasingly, there has been an emphasis on addressing behavior problems before children reach school-age, thereby capitalizing on the opportunity to prevent the negative effects of these problems on peer relationships and teacher-child interactions (Reid, 1993).

A second implication of the Social-Interactional Model is that parent-child interactions represent an important focus for intervention, particularly for preschool children (Reid & Patterson, 1991). Given that the development of conduct problems in children represents a bidirectional process between parent and child behavior, interventions ought to target relevant parenting behaviors. Relying heavily on Patterson's work (e.g., Patterson, 1974, 1982), several treatment packages intended to teach parents effective parenting strategies have been developed and empirically validated in recent years (Brestan & Eyberg, 1998). These programs acknowledge the need to increase parental responsiveness and provide parents with an armamentarium of effective techniques for managing difficult child behaviors. In general, parent training approaches have proven to be an effective means of treating conduct problems in clinical settings as well as helping to prevent the onset of conduct problems in high-risk

populations (Brestan & Eyberg, 1998; Serketich & Dumas, 1996; Webster-Stratton, 1998).

The Social-Interactional Model also suggests the need for prevention and intervention efforts to cover multiple settings (Reid & Patterson, 1991). As noted earlier, the coercive pattern established in the child's home is likely to manifest in other settings as well. Once that process begins, children experience the ill effects of negative interactions with teachers and rejection by their peer group (Coie & Kupersmidt, 1983). While behavior problems likely emerge in the context of coercive family processes, Reid and Patterson (1991) stated: "This does not mean . . . that correcting the situation at home will significantly alter ongoing aggressive behavior in the classroom or playground" (p. 735). Research conducted to date supports this assertion, with results showing that multimodal programs tend to be more effective than those addressing only a single context (Dumas, 1989; Tremblay et al., 1995; Yoshikawa, 1994).

Treatment and Prevention of Childhood Behavior Problems

Parent Training Approaches

Behavioral parent training has been used in the treatment of child conduct problems since the late 1960s (Serketich & Dumas, 1996). These approaches seek to alter children's behavior indirectly via modifications in parenting behaviors and environmental contingencies. Specifically, Dumas (1989) suggested that the various behavioral parent training approaches share the following four assumptions: (a) behavior is the result of the environmental contingencies of reward and punishment to

which an individual is exposed, (b) behavior problems are learned and sustained by these contingencies, (c) behavior therapy seeks to alter contingencies such that children obtain positive parental reinforcement for desirable behaviors and undesirable behaviors are either ignored or punished, and (d) positive changes in parent-child interactions are maintained because they serve to reinforce both parents and children.

Based largely on the work of Hanf (1969, as cited in Brestan & Eyberg, 1998), modern parent training programs typically progress through two phases. In the first phase, parents are trained to increase their attention to desirable child behaviors and provide appropriate social reinforcement (i.e., verbal praise). The objective of this phase is to address the coercive pattern of parent-child interactions discussed earlier and to strengthen the parent-child relationship. In a second phase, parents are taught to use appropriate directives followed by either reinforcement for child compliance or time-out procedures for noncompliance. Subsequently, parents work with the therapist to develop a set of appropriate house rules along with consequences for rule violations (e.g., time-out). In addition, many parent programs (e.g., Barkley, 1997) include training in the use of privileges to manage behavior, managing behavior problems outside the home, and token economy systems.

Parent-Child Interaction Therapy (PCIT; Eyberg, 1988) is one of these parent training packages, intended specifically for use with preschool children in clinical settings. In developing the program, Eyberg sought to integrate the positive, relationship-building elements of traditional play therapy with behavioral techniques shown to be effective in addressing children's behavior problems (Hembree-Kigin &

McNeil, 1995). PCIT takes parents through a child-directed phase called the "child's game" followed by a parent-directed phase called the "parents' game." During the child's game, parents are trained to use skills similar to those used by traditional play therapists. Specifically, parents are encouraged to participate in their children's play activities in a nondirective manner and to provide a high rate of description, reflection, and praise during these brief "sessions." Consistent with the Hanf model, the purpose of this portion of the program is for parents learn to attend to children's desirable behaviors and provide contingent social reinforcement. In the second phase of the program, which occurs after parents have demonstrated mastery of the skills involved in the child's game, parents are taught to use effective commands and provide consequences for noncompliance and rule violations (e.g., time-out).

Several research studies conducted by Eyberg and her colleagues have indicated that the PCIT program is quite successful in reducing disruptive behaviors and improving the quality of parent-child relationships (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991; Schumann, Foote, Eyberg, Boggs, & Algina, 1998). In a randomized study evaluating the use of PCIT with preschoolers diagnosed with oppositional defiant disorder (ODD), Schumann et al. found increases in child compliance, an increase in positive parent-child interactions, decreased parenting stress, and improvements in child behavior that were both statistically and clinically significant. These improvements were maintained at a 4-month follow-up evaluation. In addition, Brestan, Eyberg, Boggs, and Algina (1997) demonstrated that parents report improvements in untreated

siblings as well as target children. This finding suggests that parents are able to generalize the skills that they acquire during PCIT to other children in the family. Finally, PCIT is one of the few programs that has been found to result in improvements in child behavior both at home and in school settings (McNeil et al.).

Many other popular parent training packages consistent with the Hanf model have been developed for clinical use in recent years (e.g., Barkley, 1987, 1997; Forehand & McMahon, 1981; Webster-Stratton, 1981). Though there is considerable variability in the rigor of outcome research in this area, a recent meta-analysis of well-controlled studies (Serketich & Dumas, 1996) supports the short-term efficacy of these approaches in reducing antisocial child behaviors and improving parental functioning. Researchers investigating the generalizability of treatment gains have found mixed results (Coie, Underwood, & Lochman, 1991; Kazdin, 1993; McMahon & Wells, 1998). While Serketich and Dumas (1996) found support for the notion that children's treatment gains generalize to classroom settings, other researchers have failed to demonstrate this effect (Barkley, 1997; Dumas, 1989; Little & Hudson, 1998). As noted above, some researchers have demonstrated that treatment effects generalize to untreated siblings, suggesting that parents utilize the skills obtained with referred children and nonreferred siblings (Brestan et al., 1997; Kazdin, 1993). Though many studies have failed to examine long-term maintenance of treatment gains, studies conducted by Webster-Stratton (1984) and Webster-Stratton and Hammond (1997) indicate that improvements are maintained at one-year post treatment. Similarly, a study conducted by Forehand and Long (1988) revealed continued benefits 10 years after treatment cessation. In

addition to improvements in child behavior, some research has shown that parent

training has a positive impact on parental functioning (e.g., improved parenting efficacy,

reductions in stress and depression; Anastopoulos, Shelton, DuPaul, & Guevremont,

1993; Kazdin, 1993).

Classroom-Based Interventions

Given the disruptive impact children's behavior problems can have in the

classroom, it is not surprising that classroom-based interventions have a long history in

education (Coie et al., 1991; Walker, Colvin, & Ramsey, 1995). Seeley (1903) stated:

"There are certain evils connected with every school that tax the ingenuity and try the

patience of the teacher" (p. 101). He went on to describe classroom-based approaches

to deal with several of these "evils," which today would likely be discussed in the

context of disruptive behavior problems.

Latham (1997) discussed the challenges that teachers currently face in the

classroom. He noted that teachers often report dissatisfaction with the preparation and

training they receive for managing student behavior. Latham suggested that teachers

often lack prerequisite skills necessary to establish classroom expectations, keep

students on-task, maintain positive interactions with students, provide consequences for

inappropriate behavior in a noncoercive manner, and employ empirically validated

approaches to behavior management. Indeed, several of the classroom-based

intervention/prevention programs currently available seek to improve child behavior by

helping teachers to alter contingencies within the classroom. Much like parent training,

improvements in child behavior are hypothesized to manifest as a result of changes in teacher behaviors and the implementation of behavioral strategies.

Perhaps the simplest classroom-based intervention is the use of selective teacher attention to increase desired behaviors and ignore or extinguish inappropriate behaviors. Research suggests that teachers often struggle to provide attention contingent upon desired student behaviors, and may inadvertently provide a great deal of attention for undesired behaviors (Atwater & Morris, 1988; Martens, 1990). Further, praise often accounts for a surprisingly low proportion of teachers' behavior relative to instructional statements. For example, Martens found that praise accounted for less than 2% of all attention received by students in both a self-contained special education classroom and a regular education setting. In a study of 45 preschool through first-grade teachers, Atwater and Morris found that teachers gave instructions (e.g., directive comments) more than twice as often as statements of approval (i.e., praise statements), with group praise statements found to be especially rare. Teachers in this study provided praise for 22% of children's compliant behaviors, and findings indicated that praise was not necessarily contingent upon child compliance. Given these data, increasing teachers' use of praise or selective attention in the classroom seems like an obvious potential intervention. Indeed, a number of intervention programs have been designed to facilitate teachers' use of social consequences (i.e., praise for desired behaviors, ignoring for undesired behaviors; McMahon & Wells, 1998). Walker et al. (1995) reported that while such programs demonstrate some efficacy in addressing mild or moderate behavior problems, the manipulation of teacher attention alone is unlikely

to address the more severe problems of children who demonstrate a high rate of disruptive behavior and aggression.

The focus of numerous recent studies has been the development of intensive behavioral interventions with salient consequences for appropriate and inappropriate behaviors. These programs typically include contingency management or token economy procedures in which students receive tokens for displaying desirable behaviors. Tokens are then redeemable for either tangible incentives (e.g., stickers, candy) or privileges (e.g., extra recess time, computer time). Alternatively, students may lose tokens for displaying undesirable behaviors. These reinforcement contingencies may be delivered on either an individual or group basis. In their review of the literature, McMahon and Wells (1998) suggested that group approaches are best suited for academic behavioral goals, but that there is no difference between group and individual approaches with regard to social behavior. However, they noted that some researchers have discovered undesirable behavioral side effects of group contingency programs (e.g., verbal threats between students).

In one of the few published studies investigating the use of response cost procedures in a preschool setting, Reynolds and Kelley (1997) implemented a program in which teachers were instructed to initially provide tokens noncontingently to a group of four highly disruptive and aggressive children. Tokens included five smiley faces that were posted in a highly visible area of the classroom. Each time children engaged in an inappropriate target behavior (e.g., kicking a peer, throwing a toy), they lost a token. At the end of a 40-minute interval, children were able to use any remaining

tokens to obtain special privileges or tangible rewards. The authors found notable

decreases in all four of the children's aggressive behaviors and the intervention was

rated as highly acceptable by the four teachers involved. Generalization of treatment

gains to settings outside of the classroom (e.g., on the playground) was not addressed by

the researchers.

More recently, McGoey and DuPaul (2000) examined the use of token

reinforcement and response cost to address classroom behavior problems among a

group of four preschoolers who met diagnostic criteria for attention-deficit/

hyperactivity disorder (ADHD). Like the intervention described by Reynolds and

Kelley (1997), children in the response-cost-only condition were initially provided with

tokens that were removed if they demonstrated target, inappropriate behaviors during

the day (e.g., interrupting the teacher, hitting another child). In the token-

reinforcement-only condition, children received tokens for exhibiting desired behaviors

(e.g., keep hands and feet to self, listening quietly to the teacher). Results indicated

short-term reductions in inappropriate child behaviors using both interventions.

However, for two of the students the effectiveness of the token reward system appeared

to weaken over the course of the week-long intervention. The authors suggested that

this may indicate that more frequent reinforcers were needed or that, conversely, these

two children became satiated on the reinforcers used. Teachers rated both interventions

as acceptable, but preferred the response-cost procedure. McGoey and DuPaul

suggested that this may reflect the relative ease of implementing a response cost

program in classrooms with a high student to teacher ratio (i.e., 20 students to one

teacher). Specifically, teachers suggested that it was difficult to identify positive child behaviors at the rate necessary in the token reward condition.

One of the more popular group contingency programs designed to reduce behavior problems in the classroom is the "Good Behavior Game" (GBG; Barrish, Saunders, & Wolfe, 1969). GBG is a classroomwide intervention involving the use of group contingencies to reduce aggressive and disruptive child behaviors. Students are divided into two or more teams that compete to determine which team receives the fewest marks for aggressive or otherwise undesirable behaviors. All teams may receive an incentive if a threshold of marks is not surpassed; otherwise, the team with the fewest marks wins the contest. Variations on this intervention have been developed to encourage the accurate completion of academic assignments (i.e., Good Behavior Game Plus Merit; Darveaux, 1984). This approach has been shown to be effective in the reduction of disruptive child behaviors in the classroom and has been used as an adjunctive component in successful prevention programs (Dolan et al., 1993; Ialongo et al., 1999; Kellam, Rebok, Ialongo, & Mayer, 1994).

Swiezy, Matson, and Box (1992) applied a modified version of the GBG to address disruptive behaviors in a small-group, preschool setting. The authors divided a group of children in a church-affiliated preschool into two teams, with two children in each team. Children were informed that they could receive points for cooperating while completing therapist-assigned tasks (e.g., bringing a book, demonstrating social skills). Points were awarded by placing a brightly colored smiley face or dinosaur on a felt board. The team that earned the most points at the end of a session received small tangible rewards (e.g.,

cookies). If only one member of the dyad complied with the therapist's request, that child received praise but did not receive any points. Noncompliance was ignored by the therapist. The authors found improvements in compliance for both child dyads, and these improvements were maintained when a new therapist was introduced. However, improvements were not found to generalize to settings outside of the classroom (e.g., playground).

The Reprogramming Environmental Contingencies for Effective Social Skills (RECESS) and Contingencies for Learning Academic and Social Skills (CLASS) programs are two comprehensive interventions developed to address childhood aggression in kindergarten through third grade (Walker, Hops, & Greenwood, 1979, 1993, as cited in Walker et al., 1995). These programs both included universal elements to address class-wide contingencies and selected components implemented for students identified as having more severe problems. Both the RECESS and CLASS programs are intended to address behavior problems in multiple school settings (e.g., classroom, hallways, playground) via behavioral techniques such as teacher praise, token economy with response cost, and home/school rewards for desirable behaviors. In addition, these programs are designed initially to include a behavioral consultant with the intervention later administered by classroom teachers. Both programs have been shown to be effective in increasing students' appropriate behaviors and reducing inappropriate behaviors (Greenberg et al., 2001). Additionally, data suggest that gains achieved in the CLASS program are maintained over a one-year interval (similar data for the RECESS program are not yet available; McMahon & Wells, 1998).

Recently, Walker and his colleagues began to investigate the combination of the CLASS program with a parent-based component in the "First Step to Success Intervention Program" (Walker, Stiller, Severson, Feil, & Golly, 1998). In this project, the CLASS program is carried out as previously described and a consultant works with target parents on a weekly basis. Parent sessions focus on developing child competencies in communication and sharing information about school, cooperation, setting limits, problem-solving, making friends, and developing confidence. Initial results suggest that the program has a positive impact on children's behavior in home and school settings with gains maintained over a one-year follow-up. The positive effects of this program have been replicated by Golly, Stiller, and Walker (1998) with a second sample of kindergarten students. In addition, Greenberg et al. (2001) report that several independent researchers are currently conducting trials using the First Steps program.

A recent trend in the literature has been the application of functional assessment and functional analysis techniques to address disruptive behaviors (Arndorfer & Miltenberger, 1993; Watson, Ray, Turner, & Logan, 1999). Although these procedures have a rather long history in the treatment of more severe behavior problems (e.g., self-injurious behavior), the use of functional techniques in regular education settings has just begun to gain in popularity (Harding et al., 1999). "Functional assessment" (sometimes referred to as "descriptive analysis") typically refers to procedures used to generate hypotheses regarding possible antecedent or consequential events that prompt or maintain a behavior (Arndorfer & Miltenberger, 1993). In "functional analyses"

(sometimes referred to as "experimental analysis"), these hypotheses are tested by manipulating environmental events and observing changes in behavior.

Recently, several studies have described the application of functional assessment and analysis procedures to address disruptive behaviors in the classroom. Harding et al. (1999) described the use of functional assessment and analysis procedures with three preschool males who demonstrated significant aggression and noncompliance in the classroom. During an initial phase, child behaviors were observed in the classroom across different activities (e.g., snack time, free play, group activity). In a second phase, teacher behaviors (e.g., directive comments, providing choices, social attention) were coded and defined. Child behaviors were then observed in relation to these teacher activities to identify possible antecedents and consequences contributing to behavior problems. Finally, a brief functional analysis was completed in which variables hypothesized to contribute to children's behavior problems were manipulated. Using this two-stage approach, the authors developed interventions for all three children which increased appropriate behaviors. Similarly, Kamps et al. (1995) investigated the use of functional assessment and analysis for 10 children in Head Start preschool classrooms. They found that this approach served to reduce inappropriate behaviors, increase child compliance, and increase peer interactions for all 10 of the participants.

Functional assessment and analysis have also been used to reduce classroom behavior problems of adolescents diagnosed with ADHD and oppositional defiant disorder (ODD; Ervin, DuPaul, Kern, & Friman, 1998). In this study, the authors used teacher interviews, adolescent interviews, and direct behavioral observations to generate

hypotheses regarding the function of off-task behaviors of two adolescents. Based on these data, it was hypothesized that one student's off-task behavior was maintained via escape from aversive academic tasks (e.g., paper and pencil writing assignments) and the other student's behavior was maintained by peer attention and inconsistency in teacher response. Interventions that targeted these hypothesized functions resulted in decreases in problem behaviors for both students.

As noted by DuPaul, Eckert, and McGoey (1997), an advantage of functional assessment and analysis procedures is that they produce interventions which are tailored to the needs of an individual student and particular setting. This is particularly useful given the considerable heterogeneity among students with disruptive behavior disorders. A second advantage of functional assessment and analysis procedures is that they are easily adapted for different classroom settings and teacher preferences. Teachers can be quite involved in all stages of the process and are included in decisions regarding appropriate intervention strategies for their classroom.

As seen in the studies reviewed above, there has been some variability in the way in which behavioral strategies have been utilized in the classroom. Stage and Quiroz (1997) recently completed a comprehensive meta-analytic review of the literature on interventions targeting disruptive classroom behaviors in Grades K through 12. The authors reviewed 99 studies yielding a total of 223 effect sizes. Studies included in the review used behavioral interventions, cognitive-behavioral interventions, individual counseling, parent training, and multi-modal interventions. Most of the studies reviewed used a behavioral approach, and these studies accounted for 174 of the 223

effect sizes. Specific behavioral interventions included contingent teacher attention, token economy procedures, response cost, differential reinforcement, group contingencies, home-based contingencies, functional assessment procedures, and self-management techniques. Cognitive behavioral strategies accounted for 16 effect sizes in the review, with interventions including anger control programs, relaxation training, affective imagery, and social problem solving. Three effect sizes were derived from studies investigating individual counseling, though the nature of this intervention modality was not clarified. Studies investigating the impact of parent training on classroom behaviors were included in the review, accounting for three effect sizes. Twenty effect sizes came from multi-modal studies, investigating treatment packages with a variety of treatment components. An overall mean effect size of -.78 (SD = .58) was observed, suggesting that the various treatment conditions were generally efficacious in reducing disruptive classroom behavior. Although the authors did not find statistically significant differences among the various treatment approaches, these analyses were limited in that several treatment modalities included fewer than 10 effect sizes and were not included in comparisons. The most effective strategies reviewed included group contingencies (ES = -1.02), self-management (ES = -1.0), and differential reinforcement (ES = -.95).

It should be noted that the vast majority of the research conducted on classroom-based interventions has focused on children in Grades K through 12. In comparison, relatively little is known about the application of these programs to preschool settings. Bryant, Vizzard, Willoughby, and Kupersmidt (1999) completed a review of

interventions designed specifically for preschool children with aggressive and disruptive

behaviors. Perhaps the most salient finding from this review was the relative paucity of

treatment programs targeting this group. Studies were initially included for review only

if they met the following criteria: interventions addressed disruptive or aggressive

behaviors among typically developing preschool children, findings were published in a

peer reviewed journal within the past 15 years, the focus of the intervention was on the

direct treatment of preschool children, and the study included more than one child.

However, the authors were only able to identify four studies which met all of these

criteria and, as a result, the target age group was extended to eight years of age and

parent training interventions were included. This resulted in a total of 17 articles;

however, the authors noted that if experimental design factors (e.g., random assignment,

use of direct behavioral observations) had been included as criteria, this number would

have been severely limited. Although a few additional studies have been published

since the time of this review (e.g., McGoey & DuPaul, 2000), this remains an area in

need of further research.

Efficacy of Multi-Modal Early Intervention/
Prevention Programs

Several authors have investigated the impact of early intervention programs on the

later development of antisocial behavior (Conduct Problems Prevention Research

Group, 1999; Tremblay et al., 1995; Yoshikawa, 1994; Zigler, Taussig, & Black, 1992).

Interestingly, many of the original early intervention research programs were intended to

enhance cognitive development or academic success rather than explicitly address

disruptive child behaviors (McMahon & Wells, 1998; Weikart & Schweinhart, 1997; Zigler et al., 1992). Nonetheless, some of the positive "side-effects" of these programs were improvements in child behavior. In their review of this literature, Zigler et al. reported that programs such as the Perry Preschool Project, Syracuse University Family Development Research Program, and Yale Child Welfare Research Program resulted in long-term reductions in juvenile delinquency. They suggested that these programs may result in improvements before school entry, which children carry into their later interactions with teachers and peers. A review completed by Yoshikawa (1994) suggested that successful early intervention and prevention programs include components for multiple settings, are implemented for children 5 years of age and younger, and take place between 2 and 5 years.

Recently, the results of large-scale programs developed to directly address the factors that contribute to antisocial behaviors in adolescents have become available. The Montreal Longitudinal-Experimental Study (Tremblay et al., 1992; Tremblay et al., 1995) included a high-risk sample of kindergartners who displayed significant behavior problems. Identified children were randomly assigned to either a control group or a two-year treatment program including a home-based parent training program and an in-school social skills component. Results suggested that after receiving the intervention and at follow-up intervals when the boys were 10 to 15 years old, those who received the intervention demonstrated fewer delinquent behaviors than control children (Tremblay et al., 1995).

The initial results of a similar program (the FAST Track program) developed by the Conduct Problems Prevention Research Group (1992, 1999) also appear promising. Similar to the program developed by Tremblay et al. (1992), the FAST Track program included multiple components to address behavior problems at home and in school as well as an academic assistance program to increase children's school performance. School-based interventions included behavioral consultation and a social skills curriculum delivered by teachers. Children identified as "high risk" also received in-school social skills training groups and academic tutoring. Additionally, the parents of high-risk children took part in a parent training program and received individual support during home visits. The initial results of this project are quite promising, suggesting that at the end of first grade children participating in the treatment condition display greater improvement than control children with regard to social skills, social status, and academic skills. Additionally, these children display fewer behavioral and emotional concerns as rated by both parents and teachers.

Although the results of these studies suggest that optimism is warranted regarding the efficacy of early intervention, other programs have proven less effective. An intervention developed by Barkley et al. (2000) for use with kindergarten children has been less successful in modifying child behavior problems in home and school settings. This program included a total of 158 children who were identified as "at-risk" for the development of disruptive behavior disorders at the end of the preschool year. Children were randomly assigned to one of four treatment conditions: no treatment/wait-list control, parent training only, full-day treatment classroom only, and combined

treatment. Parent training included the curriculum previously developed by Barkley (1987, 1997) and presented in his Defiant Children treatment manual. The classroom-based intervention included placement in project classrooms staffed by teachers recruited from the school district with training and support provided by a "master teacher" who had an extensive background in the use of behavioral strategies. Specific strategies used in these classrooms were (a) an intensive token economy system, (b) response cost, overcorrection, and time-out from reinforcement, (c) group cognitive-behavioral self-control training, (d) group social skills training, (e) group anger control training, and (f) a daily school report card with home-based reinforcement. The initial results of this project indicated minimal effectiveness for the parent training program, which was largely attributed to poor attendance. Although there were statistically significant improvements documented on classroom measures for children in the classroom only and combined treatments immediately following the intervention, these effects were not maintained at a 2-year follow-up (Shelton et al., 2000).

A recent innovation in early intervention for children's behavior problems is the development of multi-modal intervention programs utilizing a similar approach across domains. Webster-Stratton (1998) developed a teacher training component to compliment her group parent training program which was initially designed to enhance parents' skills for managing child behaviors in a high-risk, Head Start population. A teacher component was included to facilitate communication and collaboration between parents and teachers involved in the Head Start program, and to ensure that similar approaches to behavior management were used across settings. As in previous studies

utilizing Webster-Stratton's parent-training model (Webster-Stratton, 1998), parents

attended group parent training over a period of 8 to 9 weeks. These sessions used

videotaped models of parenting skills along with discussion facilitated by group leaders.

Topics included how to play with children, using praise effectively, setting limits, and

dealing with misbehavior. Teachers attended two day-long workshops to familiarize

themselves with the content of the parent training program, discuss the importance of

supporting and reinforcing parent involvement, and improve classroom management

skills.

Webster-Stratton (1998) found that following completion of the program, parents

in the treatment group evidenced more positive parenting behaviors, fewer negative and

critical comments, and less harsh discipline than mothers in the control groups.

Teachers reported that these mothers were more involved in their children's school

performance, as evidenced by increased contact following the intervention. Children in

the treatment group were rated by their parents and teachers as more socially competent

and they exhibited fewer behavior problems than children in the control condition

according to parental report, teacher report, and in-home observations. Families were

reassessed 12 to 18 months after the intervention and improvements in parenting

competence were maintained for mothers who participated in the treatment. Although

these mothers continued to be more involved in their children's education than control

mothers, differences were no longer statistically significant. Further, although direct

behavioral observations indicated that children maintained behavioral gains (i.e., lower

rates of negative behavior and noncompliance), maternal ratings did not differ between

the treatment and control conditions. Differences in teacher reported behavior problems had also disappeared, although children from the treatment group continued to be rated as more socially competent by their teachers than control children.

In her current research, Webster-Stratton (2000) refined the teacher training program and added a group social skills curriculum for children to be used along with her group parent training program. Across both parent and teacher training programs, target skills include: increasing parents/teacher responsiveness to children, increasing the use of praise and encouragement, giving effective commands to increase the likelihood of child compliance, setting appropriate limits, and implementing appropriate discipline strategies. Group social skills sessions are used to help children develop empathy, solve problems with peers and adults, cooperate with others, manage anger, and obey classroom rules (e.g., raising hands, attending to teacher instruction). Although the complete results from this project are not yet published, preliminary findings from a series of randomized, control group studies are quite impressive. These studies suggested that the program results in significant posttreatment improvements in parent and teacher child management practices (e.g., use of praise, decreases in harsh/ critical comments) as well as improvements in child behaviors (e.g., decreased aggression, increased cooperation with teachers). Long-term follow-up data from these studies are not yet available.

Summary

Patterson's Social Interactional Model has proven incredibly valuable both in

terms of our understanding of the development and maintenance of disruptive child behaviors and the implementation of theory-based interventions. Largely based on Patterson's early work, parent training interventions have proliferated over the past 30 years. The goals for these programs have been to increase parental responsiveness, increase consistency in parental responses to misbehavior, and promote the use of appropriate discipline strategies. There is now a substantive body of research demonstrating that parent training is an effective strategy for accomplishing these goals, and changes in parenting behavior can alter the trajectory of early-onset behavior problems. Similarly, research on classroom-based interventions suggests that changes in teacher behavior and classroom environments often result in improvements in child behavior. The array of available classroom interventions allows for the selection of a program that is best suited to a given school setting. However, a review of this literature suggests that programs developed for use in preschool classrooms are needed.

The development of multi-modal early intervention/prevention programs is also consistent with the Social Interactional Model. Given that disruptive behaviors are likely to be maintained by contingencies within multiple settings (e.g., home, school, peer group), it is not surprising that treatments targeting only one domain do not tend to generalize. Thus, programs like the Montreal Longitudinal-Experimental Study (Tremblay et al., 1992, 1995), the Fast Track program (Conduct Problems Prevention Research Group, 1992, 1999), and the program developed by Barkley et al. (2000) have sought to provide intensive intervention across settings. In general, these projects have proven successful in reducing early-onset behavior problems and stemming their long-

term sequelae. As noted earlier, though, most of these projects have demonstrated

relatively little integration between treatment components used in home versus school

settings. Webster-Stratton's current research represents an exception to this rule, but

more research is needed in this area with greater emphasis on developing parallel parent

and teacher training programs.

Purpose and Objectives

The purpose of this study was to develop a classroom-based intervention for

disruptive child behaviors based on the Parent-Child Interaction Therapy (PCIT;

Eyberg, 1988) program. Just as PCIT brings about changes in child behavior via

changes in parent behavior, the goal of this intervention was to strengthen basic teacher

competencies for managing problematic child behaviors. Although PCIT has proven

successful as a home-based treatment for clinically referred children, the application of

this program to classroom settings had not been previously evaluated. Nonetheless,

PCIT appears especially well suited for the preschool classroom in several respects.

First, this program was specifically developed for use with preschool children and

has proven to be developmentally appropriate for this population. While currently

available classroom-based interventions have demonstrated some effectiveness for

preschoolers, the vast majority of these programs have been developed and empirically

validated with older children (i.e., children in Grades K through 12). Second, the PCIT

program emphasizes the use of skills (e.g., contingent social reinforcement, noticing

appropriate behaviors) that have been found in previous research to be relatively

infrequent among preschool through first-grade teachers (Atwater & Morris, 1988; Martens, 1990). Although these skills alone are likely not sufficient to address the needs of children with severe behavior problems, they have been found to influence the behaviors of children with mild to moderate problem behaviors and serve to improve the classroom environment. Third, PCIT has been shown to produce improvements in basic parent competencies which translate into improvements in the behavior of both referred children and their nonreferred siblings. Thus, it seems reasonable to predict that teachers' acquisition of these skills would benefit children who currently demonstrate significant behavior problems as well as children who either exhibit subclinical behavior problems or are at-risk for the development of conduct problems in the future. Similarly, by emphasizing these basic teaching skills it was hoped that the intervention would generalize and positively impact teacher-child interactions and child behaviors across a variety of settings (e.g., free play activities, playground, small group).

In a divergence from the PCIT model, this study incorporated activities to encourage teachers to use a "functional approach" to understanding child behavior. This was a rather notable change from traditional PCIT, but it seemed justified for several reasons. In PCIT, time-out from reinforcement is emphasized as a discipline strategy (Hembree-Kigin & McNeil, 1995). While some form of time-out is often used in the classroom and time-out has been demonstrated to be effective for classroom use, this approach has pragmatic limitations (Turner & Watson, 1999). In a classroom setting it is often difficult to find an area that is truly removed from possible reinforcers

(e.g., other children). In addition, an extremely disruptive child will often require a teacher's individual attention to remain in time-out and the methods typically advocated for parents dealing with time-out escape (e.g., spanking, hold techniques) are not appropriate for classroom use.

Discussing the function of children's disruptive behaviors was viewed as a good alternative to time-out or any other single discipline strategy in that it is consistent with the goal of strengthening basic teacher competencies. Rather than advocating a single intervention, discussing the use of a functional approach was viewed as a mechanism for encouraging teachers to actively generate hypotheses about the possible antecedents and consequences in the classroom that might maintain undesirable behaviors. If teachers are able to grasp this concept, they should be able to generate interventions that they are comfortable with and willing to use in their classroom. Further, some have argued that teachers may be reluctant to incorporate behavioral strategies in the classroom and struggle to use these strategies effectively because they do not have an adequate understanding of basic behavioral principles (Reitman, 1999). Thus, educators may complain that behavioral approaches "don't work" or that they are merely "bribing children with stickers" to behave. Emphasizing the functional role of seemingly arbitrary or even spiteful disruptive behaviors was viewed as a mechanism for addressing these issues and providing teachers with a rationale for using other behavioral components (e.g., contingent social reinforcement).

Ultimately, this classroom component will be integrated along with traditional PCIT in a multi-modal early intervention program that utilizes similar interventions

across settings. A preponderance of the early intervention literature suggests that multi-modal programs are necessary to adequately address early-onset behavior problems and it seems likely that future research will turn toward mechanisms for effectively linking interventions across diverse settings. Indeed, this is evidenced in the ongoing work of researchers like Webster-Stratton (2000), and it will likely only be a matter of time before other researchers adopt a similar approach.

Like the teacher training used in Webster-Stratton's research, the intervention used in this study targets basic skills for managing child behavior problems and promoting prosocial behavior. The teacher training used here differs from that used by Webster-Stratton in several respects. First, Webster-Stratton's teacher training sessions were six full-day sessions, held over the course of 6 months. Thus, this program was shorter overall and provided at a lower intensity. Second, this program included scheduled child-directed activities to promote positive teacher-child interactions. Although this is an objective of Webster-Stratton's program, activities to facilitate these interactions are not included. Finally, this program included a discussion of functional analysis of child behavior that has not been utilized in Webster-Stratton's prior research.

This study was intended to provide an initial evaluation of a classroom-based version of PCIT (i.e., Teacher Child Interaction Training, or TCIT). As an initial test of this model, an emphasis was placed on the adaptation of resource materials for the intervention, the investigation of changes produced in teacher behaviors (e.g., praise, use of appropriate versus inappropriate commands), evaluation of changes in teachers' sense of efficacy for dealing with behavior problems in the classroom, and the

examination of the acceptability of the program to a group of preschool teachers.

Although data regarding the effectiveness and acceptability of the program were

collected throughout the study, a standard treatment protocol was maintained to

facilitate further study and replication. Changes in child behavior were also of interest

and data on such changes were collected; however, it was anticipated that further

research using more rigorous methodology and long-term follow-up evaluations would

be needed to empirically validate the program and evaluate its effectiveness when

combined with traditional parent training.

Research Questions Addressed

The specific research questions addressed in this study were as follows:

1. To what extent does TCIT result in positive changes in teaching behavior?

Specifically, during the intervention do teachers display increased use of contingent

social reinforcement (e.g., praise/labeled praise statements) and appropriate commands

and decreased use of negative comments?

2. To what extent does teachers' sense of efficacy for dealing with child behavior

problems improve after participating in TCIT?

3. Do children display observable reductions in inappropriate behaviors (e.g.,

verbal and physical aggression) and increases in desirable social behaviors (e.g.,

prosocial behaviors, positive verbal statements) during the intervention? Similarly,

does the program result in statistically significant and clinically meaningful decreases in

teacher-reported disruptive child behaviors (e.g., noncompliance, aggression,

inattention, hyperactive-impulsive behaviors) including decreases in the severity of children's behavior problems in a variety of school situations?

4. How acceptable is TCIT among preschool teachers? What components of this program are viewed as effective and which are viewed as ineffective? What changes do teachers suggest to improve the program?

CHAPTER III

METHODS

Participants

There were 25 teacher participants from 13 classrooms involved in this study (all

classrooms are staffed by a teacher and teachers' assistant). This represents nearly all of

the teachers and teachers' assistants from the Bear River Head Start program. This

program covers a broad region of northern Utah (Brigham City, Millville, Hyrum,

Logan, Smithfield, and Richmond) and southeastern Idaho (Malad, Preston). All of the

teachers involved in the study were female and the mean age of teachers was 40.6 years

($SD = 10.0$). Most of the teachers were Caucasian ($\underline{n} = 24$; Latino $\underline{n} = 1$). There was

considerable variability in the educational background of teachers; 16% ($\underline{n} = 4$)

completed high school, 40% ($\underline{n} = 10$) completed some college, 4% ($\underline{n} = 1$) completed an

associate's degree, 36% ($\underline{n} = 9$) completed college, and 4% ($\underline{n} = 1$) completed some

postgraduate education. Similarly, there was a great deal of variability in preschool

teaching experience, with a range of 1 to 20 years experience ($\underline{M} = 5.0$ years, $\underline{SD} = 4.3$).

Several teachers ($\underline{n} = 8$) reported additional experience teaching at different grade

levels. A convenience sample of seven teachers from the Logan, Utah, center were

observed over the course of the study (as noted above, data for one of the eight teachers

from this center were not included). The seven teachers observed were comparable to

their peers with regard to age ($\underline{M} = 41.9$, $\underline{SD} = 12.5$) and preschool teaching experience

($\underline{M} = 6.4$ years, $\underline{SD} = 6.6$). It appears that the educational level for these teachers may

have been slightly higher than teachers from other centers (completed high school $n = 1$,

completed college $n = 5$, completed postgraduate education $n = 1$).

Prior to the intervention, data were collected for a total of 221 children (109 male,

112 female; $M = 4.6$ years, $SD = .5$). Postintervention data were collected for 196 of

these children (99 male, 97 female; $M = 4.6$ years, $SD = .5$). Teacher comments on

postintervention measures suggest that eight children moved out of the area over the

course of the intervention and were, therefore, not rated. Additionally, two teachers

failed to return postintervention measures, resulting in 17 children with missing data.

Child observational data were collected from a convenience sample in the four Logan,

Utah classrooms. There were 67 children in these classrooms, and they were

comparable to their peers with regard to age ($M = 4.5$ years, $SD = .50$) and gender

(males $n = 39$, females $n = 28$).

Instrumentation

Teacher Measures

To assess changes in children's disruptive behaviors, teachers were asked to

complete the Disruptive Behavior Disorders Rating Scale (DBDRS; Barkley, 1997).

The DBDRS included 26 items describing inattentive, hyperactive-impulsive, and

oppositional defiant behaviors based on the diagnostic criteria provided in the

Diagnostic and Statistical Manual of Mental Disorders--Fourth Edition (DSM-IV;

American Psychiatric Association, 1994). On this measure, teachers were asked to

indicate how often the student demonstrated each behavior during the past 6 months on

a scale of 0 ("never or rarely") to 3 ("very often"). For postintervention measures, teachers were asked to provide ratings based on the students' current level of disruptive behavior. While norms are not currently available for the full DBDRS, normative and psychometric information has been collected for a measure including only the items related to attention-deficit/hyperactivity disorder (ADHD Rating Scale-IV; DuPaul, Power, Anastopoulos, & Reid, 1998). These researchers suggested that the ADHD Rating Scale-IV demonstrates good psychometric characteristics with respect to internal and test-retest reliability (r = .94 and .90 for the Total Scale internal consistency and test-retest reliability, respectively). In addition, this measure correlates well with other behavior ratings of ADHD as well as direct behavioral observations. Finally, the ADHD Rating Scale-IV demonstrated good discriminant and predictive validity. Psychometric analyses completed using the preintervention DBDRS data from this sample support the factor structure and suggest good internal consistency for all scales (r = .96, .93, .91, and .94 for total, inattentive, hyperactive-impulsive, and oppositional defiant scales, respectively; Collett et al., 2001)

Teachers were also asked to complete the School Situations Questionnaire (SSQ; Barkley, 1981) for each child in their class prior to and following the intervention. The SSQ includes a brief description of 12 common school situations and asks the teacher to indicate whether the child displays problem behaviors in that situation. For each identified problem situation, teachers are asked to indicate how severe the child's behavior problems are on a scale ranging from 1 ("mild") to 9 ("severe"). Scores are obtained for both the number of problem situations identified as well as the mean

severity of those problems. In their investigation of the psychometric properties of the

SSQ, Altepeter and Breen (1989) found that it demonstrated adequate internal

consistency (alphas = .84 to .91) and test-retest reliability over a 4-week interval (r = .64

to .77 for number of problem situations, r = .77 to .82 for mean severity ratings).

Additional research has demonstrated that the SSQ is sensitive to treatment gains and

displays good discriminant validity (Merrell, 1999). Three of the problem situations on

this measure were not applicable to a preschool setting (e.g., "during individual desk

work," "during lectures to the class," and "during special assemblies"). Although these

items were not removed from the measure, they were not included in analyses because

they were skipped by several teachers. Internal consistency reliabilities calculated with

the preintervention sample from this study suggest strong internal consistency (r = .91).

Before and after the intervention teachers were asked to complete a modified

version of the Teacher Efficacy Scale (TES) developed by Gibson and Dembo (1984).

The TES included 16 items describing teachers' beliefs about their ability to influence

student learning and behavior. Teachers were asked to indicate the degree to which they

agreed with each statement by rating each item on a scale of 1 ("strongly disagree") to 6

("strongly agree"). Factor analyses indicated a two-factor structure, with subscales for

"personal teaching efficacy" and "teaching efficacy." While the personal teaching

efficacy subscale reflected a teacher's confidence in his or her own skills, the teaching

efficacy subscale reflected the individual's more generalized beliefs about the ability of

teachers to influence student learning and behavior. The measure displayed adequate

internal consistency reliability (total scale r = .79), though test-retest reliability data

have not been published. The TES was moderately correlated with other measures of efficacy (r = .42) and was related to teacher behaviors. Specifically, Gibson and Dembo found that high-efficacy teachers devoted a greater amount of time to academic activities, provided needed guidance to students who are struggling, and praised student achievements. Low-efficacy teachers devoted more class time to nonacademic activities, gave up on students who were struggling more quickly, and often criticized students for failures. Because the TES was developed for use with primary and secondary teachers, items related to purely academic tasks were eliminated or modified in the current study to reflect teaching activities relevant to preschool classrooms and only the total score was used in analyses.

Following the intervention, teachers were asked to complete a modified version of the Therapy Attitude Inventory (TAI; Eyberg, 1993). This measure was developed for use with parents completing the PCIT program and the items are specific to this intervention. The measure includes 10 items regarding general parental satisfaction with treatment, what was learned during treatment, improvements observed in children's behavior, and improvements in parent-child relationships. Statements are rated on a scale of 1 to 5, with higher ratings indicating greater satisfaction. The results of a recent study investigating the psychometric properties of the TAI indicated good internal consistency reliability and test-retest reliability over a 4-month interval (internal consistency r = .91, test-retest r = .85; Brestan, Jacobs, Rayfield, & Eyberg, 1999). Additionally, the TAI moderately correlated with children's treatment gains as rated by parents (r = .46) and behavioral observations of child compliance (r = .36). In the

modified version used for this study, items were reworded appropriately for classroom settings and teacher-child relationships.

After each session, teachers were asked to complete a brief, eight-item rating scale indicating their satisfaction with the session. Four items addressed process variables for each group session (e.g., group participation, attention to information, quality of information provided) and four items addressed teachers' ratings of assignments practiced in class (e.g., how useful assignment was, student response to the assignment). Teachers rated each item on a scale of 1 to 5, with higher ratings suggesting greater satisfaction. In addition, a series of four open-ended questions were included on this measure, asking teachers to indicate what was helpful about the session, what could have been done to improve the session, whether they could implement the interventions discussed, and what else might have been helpful.

Following the completion of the intervention, groups of eight to nine teachers met with research assistants for approximately 45 minutes to discuss the intervention. During these sessions, assistants followed a protocol asking teachers for feedback regarding the format used and the effectiveness of the group leader, which elements were most helpful, whether they have been able to implement the intervention, and what could be done to improve the program. Copies of all measures and the demographic information form completed by teachers are included in Appendix A.

Observational Measures

Four undergraduate psychology students who were unaware of the intervention

assisted with observational data collection. Two of these assistants observed only teacher behaviors and two observed only child behaviors. Although they were aware that other observers were involved in the project, assistants were not informed that both child and teacher behaviors were being coded. Two graduate students in psychology conducted reliability checks for approximately 20% of the total observation intervals. Graduate students were aware of the intervention and the observational data being collected for both children and teachers.

All assistants were trained approximately 3 to 4 weeks before the start of the intervention. Training was completed separately for child and teacher observers. Observers were involved in operationally defining coded variables and determining recording procedures. During training, video clips from a previous study involving preschool teachers and children were used to practice coding behaviors. Observers independently coded child or teacher behaviors from these clips along with the researcher. Subsequently, observations were compared and any disagreements were discussed to reach consensus on the appropriate coding. Although observations began 2 weeks prior to the intervention, during the first week interrater agreement was quite low (i.e., 26.8% for child observations and 50.7% for teacher observations). As a result, these data were not used and further training was completed to review coding procedures and discuss problems. Assistants continued to meet with the researcher throughout the intervention to discuss problems as they arose and to ensure consistency in recording over the course of the project.

Child observations were conducted to obtain an overall assessment of child behavior in the classroom. Rather than targeting the behavior of individual children, the objective for these observations was to collect data regarding the more general classroom climate. Frequency counts were completed for both aggression/inappropriate behavior (e.g., physical aggression, destructive behavior, verbal insults, and noncompliance) and prosocial/appropriate behaviors (e.g., physical helping, positive verbal behavior, compliance). Operational definitions of these behaviors are provided in Appendix B.

Child observations were completed for 1 hour, 2 days per week in each of the four classrooms. Observations took place at approximately the same time each day in the various classrooms and several contexts were observed (e.g., free play, playground, group activities). During observations, assistants were instructed to initially select a child at random from the classroom and observe for a 5-minute interval. After the 5-minute interval, they were to switch to another child, preferably a child from another area of the classroom. This procedure continued until they had observed 12 children (out of a total of approximately 15 to 18 per classroom). During reliability checks, the undergraduate and graduate assistants conferred to select a child at random and then completed the observations separately. Following each interval, the assistants conferred briefly. Any disagreements were noted and a child was then selected for the next 5-minute interval.

Interrater agreement was determined by dividing the total number of behaviors observed in a given category (i.e., the sum of agreements and disagreements) by the

number of agreements. Overall, the interrater agreement for child observations was 81.6%. The interrater agreements for the various target behaviors are presented in Table 1. As can be seen, there were three categories in which the agreement rate was rather low (e.g., destructive behavior, noncompliance, physical prosocial behavior). It should be noted that each of these behaviors occurred relatively infrequently, and this likely served to reduce the agreement rates. Although frequency counts are desirable for behaviors that rarely occur, a limitation of this method is that it is difficult to achieve adequate interrater agreement for infrequent behaviors (Merrell, 1999). For example, if an observer records one destructive behavior that is not coded by the observer collecting reliability data, this would result in 0% agreement for that day and would substantially reduce the overall agreement rate in that category. Though these target behaviors were included for analysis, the low rate of agreement clearly limits the conclusions that can be drawn.

Table 1

Interrater Agreement Rates by Child Behavior Category

Target behavior	Interrater agreement ratio (%)
Physical aggression	22/25 (88.0%)
Destructive behavior	1/2 (50.0%)
Verbal aggression	7/7 (100.0%)
Noncompliance	7/10 (70.0%)
Physical prosocial	13/18 (72.2%)
Verbal prosocial	3/3 (100.0%)
Compliance	27/33 (81.8%)
Total	80/98 (81.6%)

Teacher observations were completed to evaluate teachers' use of effective strategies for managing child behaviors targeted during the intervention. Operational definitions for teacher behaviors were adapted from those used by Robinson and Eyberg (1981) in the Dyadic Parent-Child Interaction Coding System (DPICS; see Appendix B for operational definitions). Frequency counts were conducted for appropriate/ inappropriate commands, labeled/unlabeled praise, and negative or critical comments. In each category, these teaching behaviors were coded separately if they were directed toward a group of children or the entire class versus an individual child.

Teachers were observed for 20 minutes, 2 days per week at approximately the same time each day. Observation sessions were divided into 5-minute intervals to facilitate the calculation of interrater agreement. As with child observations, following each interval observers briefly conferred and any disagreements were noted. Interrater agreement was again calculated by dividing the total number of behaviors in a given category by the number of agreements. The overall interrater agreement for teacher observations was 85.9%. As with the child observational data, there were some categories in which the rate of agreement was low (e.g., unlabeled group praise, negative comments to a group/individual; see Table 2). Again, these were behaviors that occurred infrequently and this likely had an impact on the agreement rates achieved. These target behaviors were included for analyses, but the findings in these categories are interpreted with caution.

Table 2

Interrater Agreement Rates by Teacher Behavior Category

Target behavior	Interrater agreement ratio (%)
Appropriate commands, group	111/133 (83.5%)
Inappropriate commands, group	50/57 (87.7%)
Appropriate commands, individual	277/312 (88.8%)
Inappropriate commands, individual	137/148 (92.6%)
Labeled praise, group	14/17 (82.4%)
Unlabeled praise, group	5/7 (71.4%)
Labeled praise, individual	56/67 (83.6%)
Unlabeled praise, individual	36/54 (66.7%)
Negative comments, group	2/3 (66.7%)
Negative comments, individual	1/4 (25.0%)
Total	689/802 (85.9%)

Procedures

Data Collection

Prior to beginning this project, the study was approved by the institutional review

board (IRB) at Utah State University, the director of the Bear River Head Start program,

and the Bear River Head Start parent council. Approximately 3 weeks before the

intervention began, the project was described for teachers during a weekly inservice

meeting. Teachers were given a letter describing the project and asked to sign an

informed consent form indicating their willingness to participate. In addition, teachers

were given a packet of preintervention measures of child behavior problems including

the Disruptive Behavior Disorders Rating Scale (DBDRS; Barkley, 1997) and the School Situations Questionnaire (SSQ; Barkley, 1981). Teachers and teacher assistants were asked to divide these measures, each completing a rating for approximately half the children in their class. To maintain the confidentiality of the students rated and to keep track of pre- and postintervention ratings, code numbers were assigned and teachers kept a record of the names corresponding with the code numbers. Teachers were also asked to complete the Teacher Efficacy Scale (TES; Gibson & Dembo, 1984) and a brief demographic information form. Teachers were asked to complete these same measures following the completion of the intervention.

To obtain baseline data, in-class observations of child and teacher behaviors began approximately 2 weeks before the first session. However, as noted earlier, during the first week total interrater agreement levels for both child and teacher observations were unacceptably low and these data were not used. As a result, only one week of baseline data was available. Observations continued throughout the intervention.

To assess treatment acceptability, teachers completed brief session ratings after each session. Following the intervention, teachers also completed the modified version of the TAI (Eyberg, 1993). Focus groups including eight to nine teachers were conducted to obtain qualitative data regarding the acceptability of the intervention as well as suggestions for modifications.

Description of the Intervention

A brief description of all teacher training sessions is provided in Table 3 and the

Table 3

Description of Teacher Training Sessions

Session #	Description of session content
Session 1	Program overview & review of basic behavioral principles (e.g., antecedents, behaviors, & consequences; positive and negative reinforcement; selective ignoring/extinction; punishment). Introduction to evaluating the function of child behavior & discussion of the role that teachers play in modifying child behavior
Session 2	Introduced implementation of child-directed activities in the classroom. Video model of "child's game" shown. Teachers asked to practice child-directed activities during the next week and observe one another.
Session 3	Reviewed implementation of child-directed activities. Teachers practiced in groups of three to four with therapist feedback. Teachers were again asked to practice the use of these skills
Session 4	Discussed guidelines for giving effective commands and introduced materials regarding strategies for generating hypotheses regarding the function of child behaviors. Teachers were asked to use observation forms provided to observe child behaviors over the next week.
Session 5	Reviewed observation forms from the previous week and introduced possible intervention strategies (e.g., changing antecedents, use of privileges to manage behavior, token economy systems). An emphasis was placed on linking interventions to the hypothesized functions of child behaviors.
Session 6	Implementation of program and any problems encountered were discussed. Teachers used the remainder of the session to complete posttreatment evaluation forms and participate in focus groups.

handouts used in sessions can be found in Appendix C. Training took place for

approximately 1 hour per week over a period of 8 weeks (March 10 through April 27,

2000). Sessions were not held on two of these weeks due to scheduling conflicts and

vacation days. Teachers from Idaho centers were unable to attend session four due to a

scheduling conflict. Material from this session was reviewed with these teachers prior

to session five. All of the sessions were held during regularly scheduled weekly

inservice meetings and therefore did not require teachers to spend any additional time

outside of work to participate. Sessions were didactic in nature and efforts were made

to engage the teachers in discussion as much as possible. During the initial session, teachers received an overview of the program including a review of basic behavioral principles (e.g., positive and negative reinforcement, ignoring/extinction of undesirable behaviors), an introduction to evaluating the function of children's behavior, and a discussion of the role teachers play in modifying child behaviors.

The second and third sessions focused on implementing child-directed activities in the classroom. Specifically, the use of nondirective activity similar to the "child's game" utilized in PCIT (Eyberg, 1988) was discussed. Teachers were encouraged to describe what children were doing, reflect children's verbalizations, imitate children's play activities, and use a high rate of labeled praise statements. To ensure that this activity remained non-directive, teachers were to avoid asking questions, giving commands, and making negative comments. These activities were demonstrated using a videotape of appropriate and inappropriate examples of the child's game developed for use in a training clinic.

As in PCIT, the purpose of this portion of the intervention was to foster positive teacher-child interactions, to encourage teachers to attend to children's desirable behaviors, and for teachers to "overlearn" the use of contingent social reinforcement. Several modifications were made to make these activities more feasible in the preschool classroom. Rather than working individually with children, teachers were instructed to practice with groups of three to four children for periods of 5 to 10 minutes. Teachers practiced during regularly scheduled classroom activities that are primarily child-directed (e.g., center time, while at the water or sand table). Teachers were asked to

observe one another during these activities twice per week for approximately 5 minutes.

During these observations, teachers were encouraged to record the number of praise

statements, descriptive and reflective comments, questions and commands, and any

negative comments made. While the data were not collected for analysis, it was hoped

that this exercise would help teachers attend to their verbalizations and practice

interacting with children in a nondirective manner. However, several teachers involved

in the program reported that they were not able to conduct observations, largely due to

the need to monitor children more closely. As a result, this activity was not included in

a structured manner but teachers were still encouraged to observe and learn from one

another as they practiced. During the third session, teachers were divided into small

groups to practice and receive therapist feedback. In each group, one teacher practiced

the use of child-directed interaction skills while other teachers role-played as children in

the classroom. Teachers were asked to continue to practice these skills in the classroom

throughout the intervention and progress was discussed in subsequent sessions.

The fourth and fifth sessions shifted to a focus on using effective commands,

understanding the function of children's behavior, and implementing classroom

interventions based on the hypothesized function of an inappropriate behavior. Training

in the use of effective commands focused on the importance of attaining children's

attention prior to issuing a command, using commands that are specific and positively

stated, and avoiding the presentation of commands as questions. Emphasis was also

placed on the importance of providing reinforcement (e.g., praise) for child compliance

and following through with consequences for noncompliance (e.g., removal of privileges).

At the end of the fourth session, materials from Functional Assessment and Program Development for Problem Behavior: A Practical Handbook, second edition by O'Neill, Horner, Albin, and Sprague (1997) were used to introduce strategies for evaluating the function of children's behavior. This included discussion of observing for environmental antecedents, precise behavioral recording, and noting the consequences for those behaviors (i.e., A-B-C recording). An additional recording procedure used to generate more specific hypotheses was also discussed. As these materials were reviewed, teachers provided examples of child behavior problems from their classrooms that were then discussed as a group to generate hypotheses regarding the possible function of those behaviors. Teachers were then asked to use the forms provided to observe child behavior over the next week. During the fifth session, these behavioral observations were reviewed and several possible intervention strategies were introduced (e.g., changing antecedents, use of privileges to manage behavior, token economy systems). An emphasis was placed on linking functional assessment with the intervention strategy chosen and materials adapted from DuPaul and Ervin (1996) were provided. During a brief final session, the implementation of program components was reviewed and any problems encountered were discussed. Teachers were asked to use the remainder of this session to complete posttreatment measures and participate in discussion groups.

Analyses

Changes in Teaching Behavior

Changes in teaching behavior were assessed via observational data collected over the course of the intervention. As noted above, observed behaviors included teachers' use of appropriate and inappropriate commands, labeled and unlabeled praise, and negative comments. During the observations, these behaviors were coded separately for teaching behaviors directed toward a group of children versus those directed toward an individual child. Although this was useful for coding teacher behaviors, it was not considered necessary or informative to separate these for analyses and totals were used for each category. An average was calculated for each teacher in each of the five behavioral categories using the two days of observational data per week. As noted above, the data from the first week of observations were not included for analysis due to the low rate of overall interrater agreement. To facilitate the interpretation of changes in teaching behavior for the group as a whole, observations were collapsed across teachers by taking an average in each category. Data were then graphed and trends were analyzed via visual inspection. Data were also examined separately by teacher and classroom to facilitate analysis of potential differences among teachers.

Changes in Teacher Efficacy

Changes in teacher efficacy were evaluated with a paired samples t test using the total score from the pre- and postintervention TES (Gibson & Dembo, 1984). In

addition, mean difference effect sizes were calculated to evaluate the magnitude of these changes.

Changes in Child Behavior

Changes in child behavior were evaluated via teacher completed rating scales as well as observations conducted over the course of the intervention. Inappropriate behaviors observed included physical aggression, verbal aggression, and destructive behavior. Appropriate behaviors observed included physical prosocial behavior, verbal prosocial behavior, and compliance. A percentage was calculated for compliance by first adding the number of compliant and noncompliant behaviors and then dividing by the number of compliant behaviors observed. As with teacher data, an average was obtained for each behavioral category from the two days of observational data per week. As reported above, data from the first week of observations were not used due to the low rate of overall interrater agreement. Data were graphed separately by classroom and were also collapsed across classrooms to evaluate changes in child behavior as a whole. Trends in the data were assessed via visual inspection. Teacher reports from the DBDRS (Barkley, 1997) and SSQ (Barkley, 1981) were collected before and after the intervention. The statistical significance of changes and differences as a function of class membership were evaluated using mixed model analyses of variance, with time as the within subjects variable and classroom as a between subjects variable. To evaluate the magnitude of changes observed, standardized mean difference effect sizes were calculated. Standardized mean difference effect sizes were also calculated separately

for each classroom to evaluate differences in treatment response by classroom. These

effect sizes are described using the criteria provided by Cohen (1988; small = .20 to .49;

medium = .50 to .79; large ≥ .80).

Treatment Acceptability

Treatment acceptability was evaluated for each session using the session rating

forms described above. Means and standard deviations were calculated for each of the

eight items. In addition, teacher comments to the four open-ended questions were

reviewed to obtain qualitative feedback. Following the intervention, acceptability data

were collected from the TAI (Eyberg, 1993). Means and standard deviations were

calculated for the total score as well as each of the 10 items. Qualitative data were

collected following the intervention during 45-minute discussion groups. The main

themes and specific suggestions generated from these groups were recorded by group

facilitators.

CHAPTER IV

RESULTS

Changes in Teaching Behavior

Changes in teaching behavior were evaluated via behavioral observations in the

classroom. In each of the graphs depicting teacher behaviors, the start and end of the

intervention are marked with solid vertical lines. Data are presented collapsed across

teachers and separately by classroom and individual teachers. The week that a relevant

topic was discussed (e.g., increasing positive attention, giving effective commands) is

indicated by a dashed vertical line. In interpreting the graphs, it is important to note that

the numbers on the abscissa correspond with the week of observations. For example, in

Figure 1 baseline observations took place Monday through Thursday and the first

session was held on Friday (indicated by vertical line). It should also be noted that

sessions were not held during two weeks due to scheduling conflicts (week 2) and

vacation days (week 7). However, observational data were collected during these weeks

and they are included on the graphs. As noted earlier, the interrater agreement for some

categories (e.g., unlabeled praise, negative comments) was quite low and this limits the

inferences that can be drawn.

Teachers' Use of Labeled and Unlabeled
Praise

As seen in Figure 1, both labeled and unlabeled praise were relatively infrequent
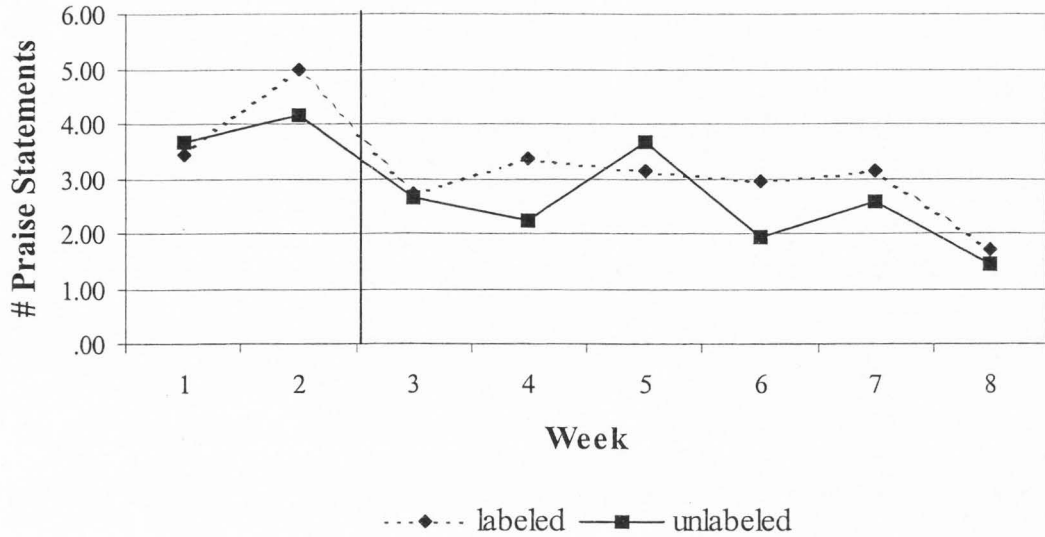
<u>Figure 1</u>. Labeled and unlabeled teacher praise statements collapsed across teachers.

overall (i.e., a maximum of five and four praise statements per 20-minute interval, respectively). Teacher praise peaked in week 2, following the first session of the intervention. There was a slight decline during subsequent weeks and both categories of praise remained relatively stable over the course of the intervention. There were minimal changes in praise following Sessions 2 and 3, in which increasing positive teacher-child interactions were discussed. Given these findings, overall it does not appear that teachers' use of praise changed significantly over the course of the intervention.

Figures 2 and 3 demonstrate that there was considerable variability among teachers with regard to the use of praise. Based on these graphs, it appears that some teachers demonstrated increases in the use of praise immediately following the sessions in which this topic was discussed in the context of child-directed activities (i.e., Sessions 2 and 3). For example, Teachers 2 and 4 demonstrated increases in the use
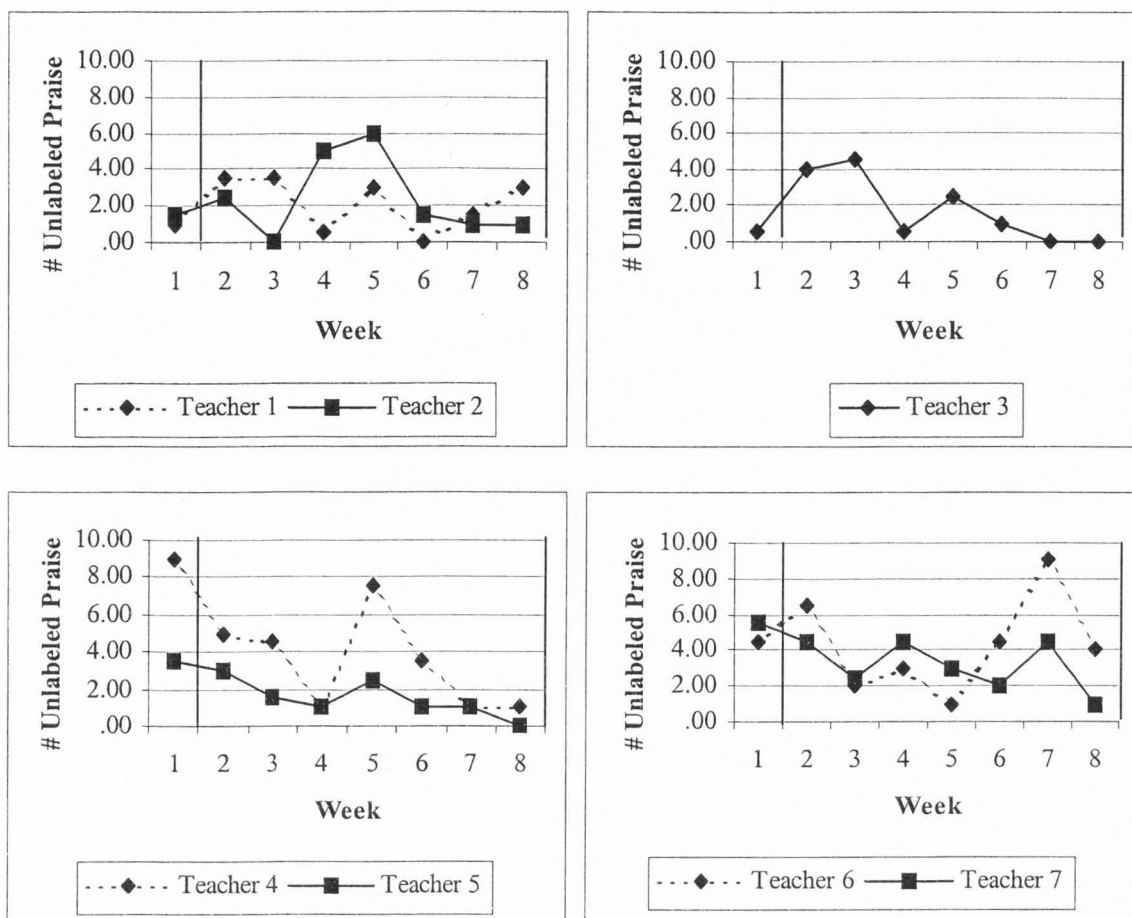
Figure 2. Teachers use of unlabeled praise separate by classroom and teacher.

of unlabeled praise. However, for both of these teachers the change was relatively brief

and was not maintained in following weeks. Teachers 2, 3, 5, and 6 demonstrated

increases in the use of labeled praise immediately following these sessions. The

increases were again relatively brief and did not persist over the course of the

intervention. These findings indicate that for most teachers, the use of praise increased

immediately following key sessions. However, this change was not consistently

maintained during subsequent weeks.
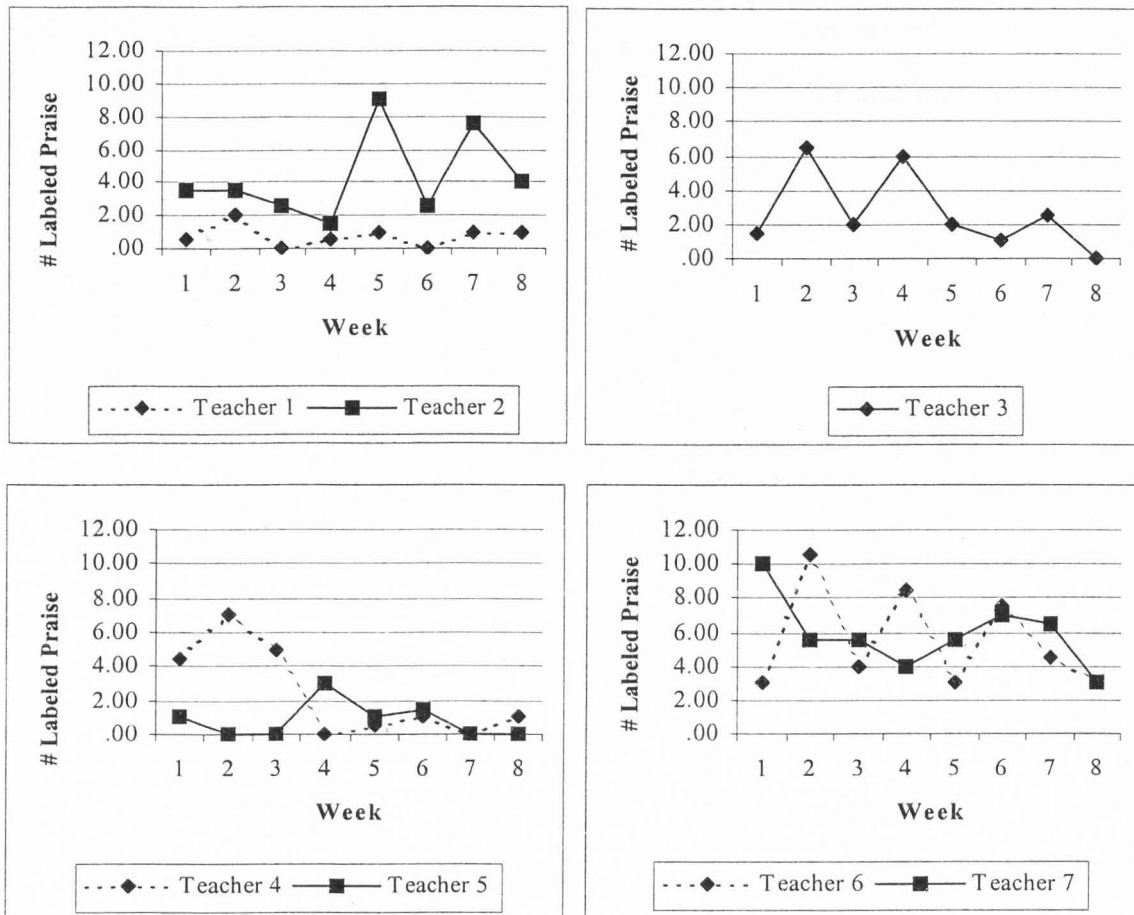
Figure 3. Teachers' use of labeled praise separate by classroom and teacher.

Teachers' Use of Effective Commands

Figure 4 demonstrates that teachers issued a considerable number of commands and the majority of these were coded as being "appropriate." Overall, it appears that inappropriate commands declined over the course of the intervention. Appropriate commands also appear to have slightly declined during weeks 1 through 6, with a slight increase during week 7. There was no apparent change in the number of appropriate
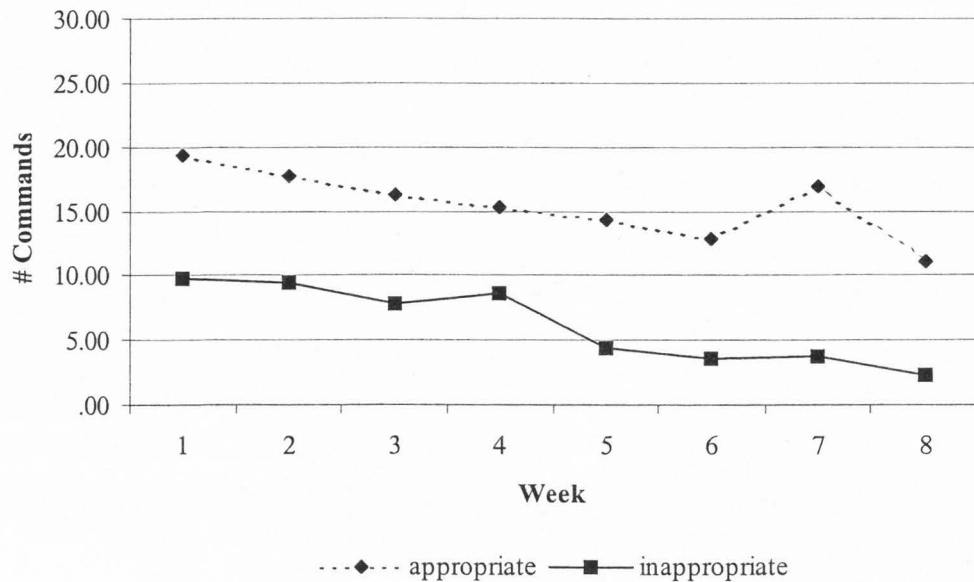
Figure 4. Teachers' use of commands (appropriate and inappropriate) collapsed across teachers.

versus inappropriate commands following Session 4, in which giving effective commands was discussed. This suggests that teachers generally issued appropriate commands. Although there was a slight decline in the number of inappropriate commands given, this does not appear attributable to the session in which this topic was discussed.

Figures 5 and 6 again illustrate the considerable variability among individual teachers with regard to the use of appropriate and inappropriate commands. The reduction in inappropriate commands was most notable for Teacher 1 following Session 4. Appropriate commands were generally consistent and there were no apparent changes demonstrated by any of the teachers after Session 4. These findings indicate that teachers' use of inappropriate commands declined during the intervention. For Teacher 1, this decline appears to have been initiated following the giving effective commands session and for other teachers this appears to have been a natural decline.
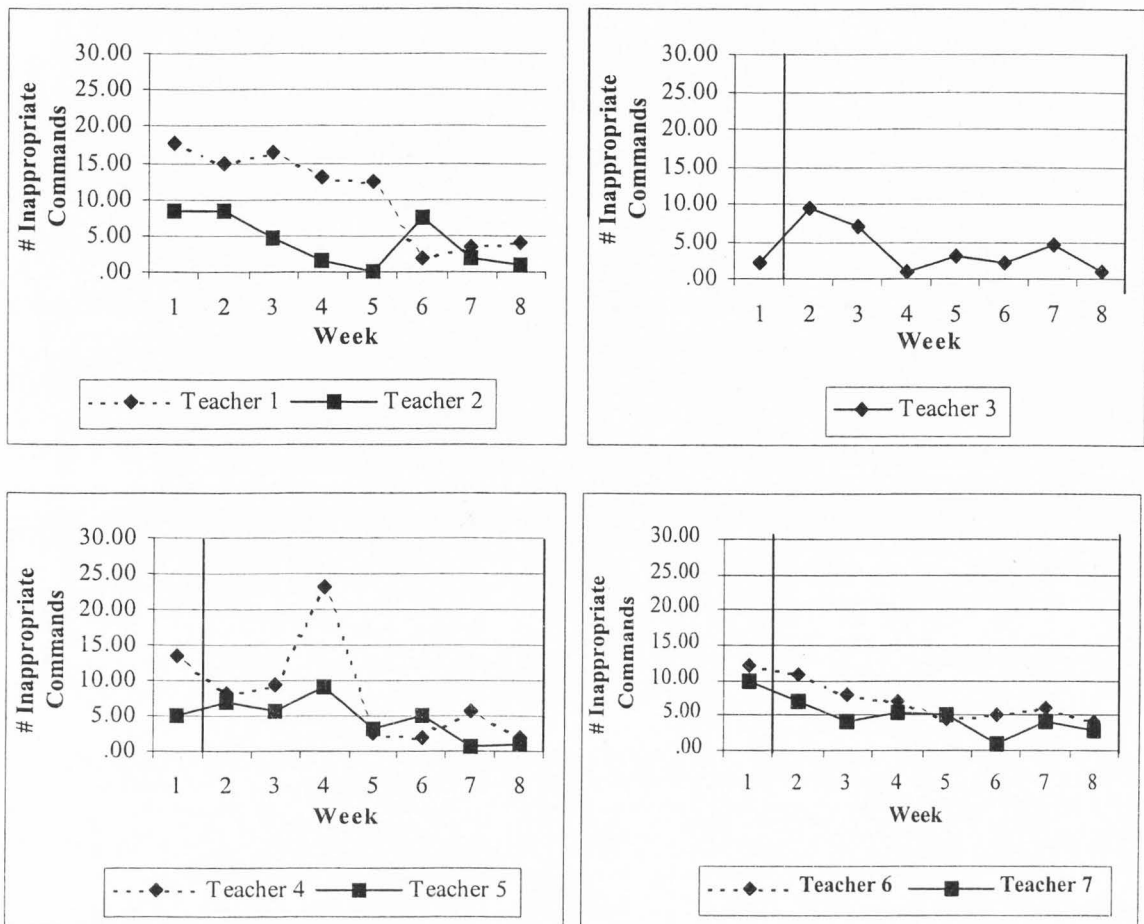
Figure 5. Teachers' use of inappropriate commands separate by classroom and teacher.

Appropriate commands were somewhat variable for individual teachers, but did not appear influenced by the session during which commands were discussed.

Negative Teacher Comments

Negative comments were infrequent, occurring on average less than once per observation period. Figure 7 reveals that negative comments peaked in week 2 and subsequently declined. Figure 8 again illustrates some variability among teachers, though negative comments were infrequent among all teachers. There is not a
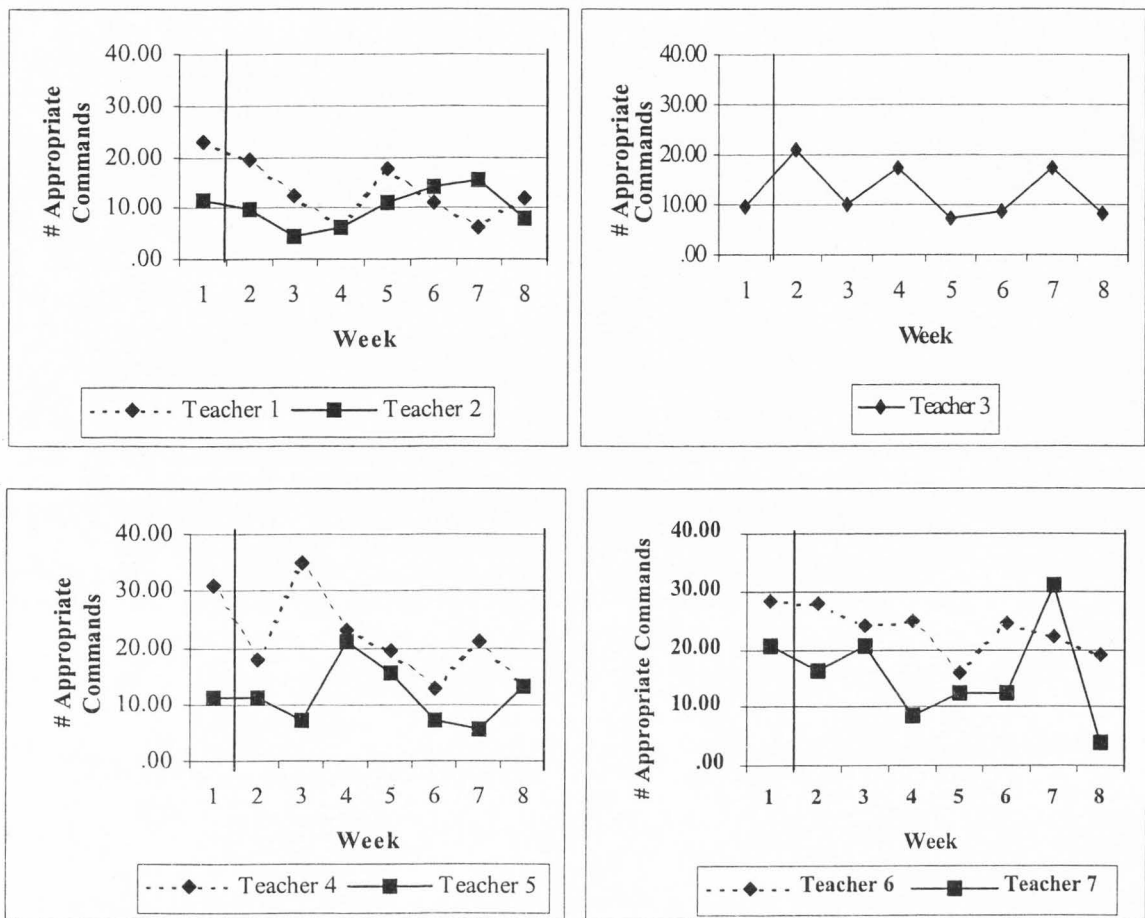
<u>Figure 6.</u> Teachers' use of appropriate commands separate by classroom and teacher.

consistent trend over the course of the intervention. Rather, fluctuations were likely

attributable to situational variables (e.g., child behavior).

Changes in Teachers' Self-Efficacy

Descriptive analyses were conducted as well as a paired samples $\underline{t}$ test to analyze

changes in teachers' scores on the TES (Gibson & Dembo, 1984) following the

intervention. Teachers' TES scores were quite similar before and after the intervention
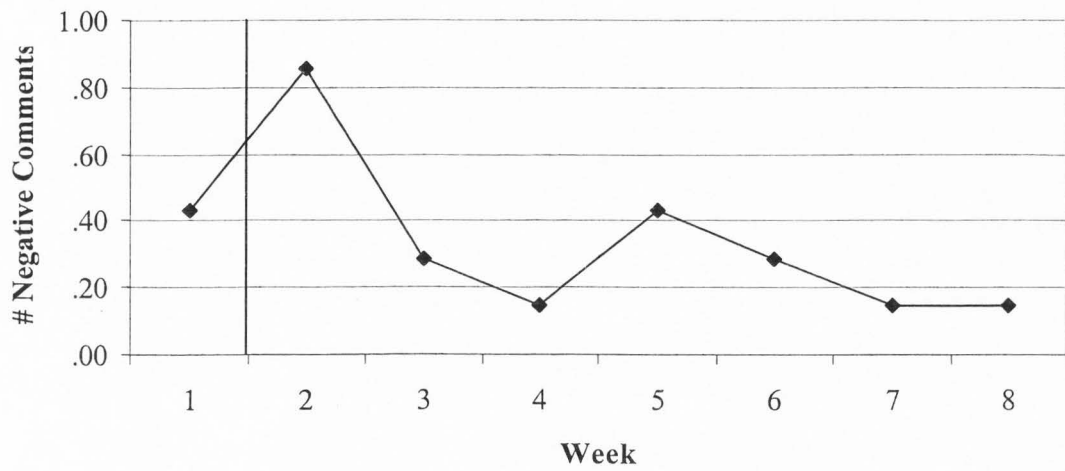
Figure 7. Negative teacher comments collapsed across teachers.
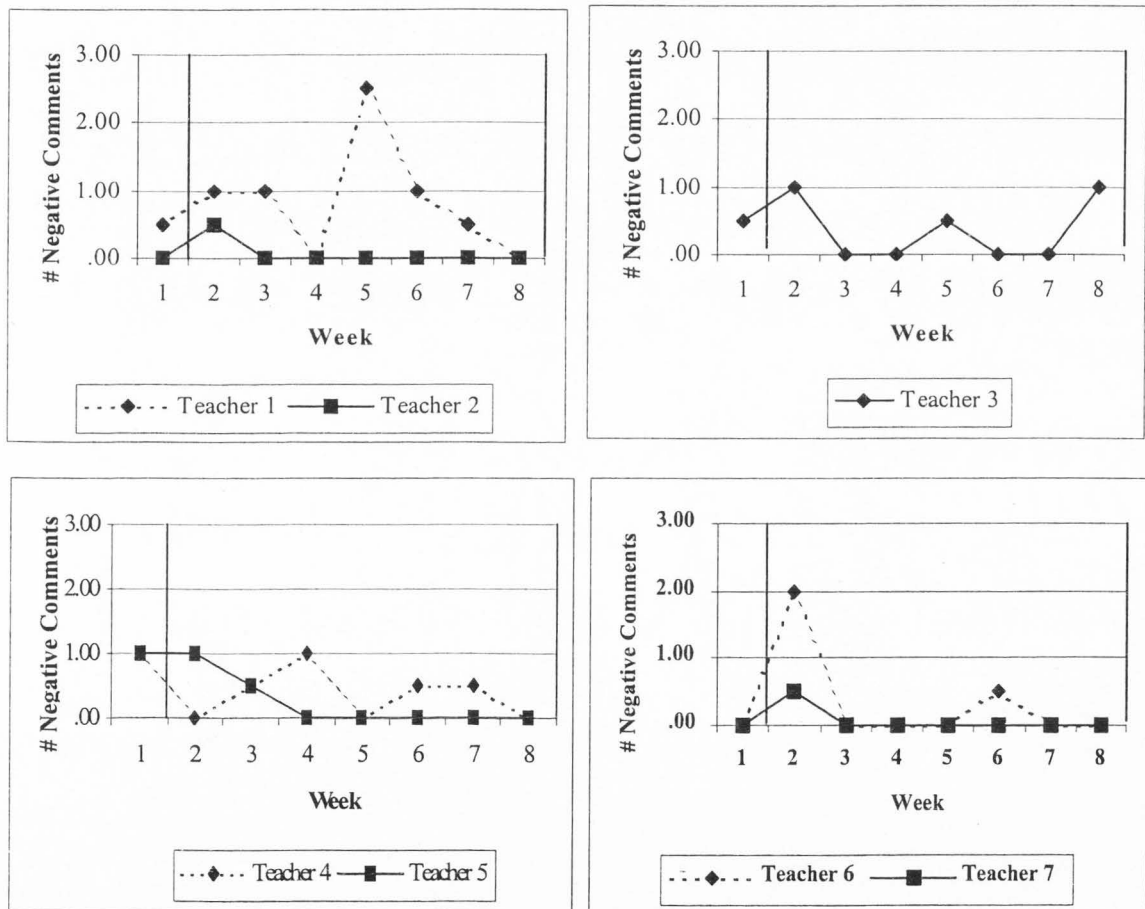
Figure 8. Negative teacher comments separate by classroom and teacher.

(pretreatment $\underline{M} = 34.6$, $\underline{SD} = 5.5$; posttreatment $\underline{M} = 35.1$, $\underline{SD} = 4.9$). The results of the paired samples $\underline{t}$ test suggests that changes in teacher efficacy were not statistically significant ($\underline{t} = -0.70$, $\underline{p} = 0.49$). Similarly, the standardized mean difference effect size indicates that the magnitude of this difference was quite small ($\underline{ES} = -.10$). Thus, it does not appear that teachers' sense of efficacy for dealing with behavior problems in the classroom changed as a result of taking part in the intervention.

Changes in Child Behavior

Changes in child behavior were assessed via behavioral observations, with data graphed for each week. The start and end of the intervention are indicated by vertical lines and the numbers on the abscissa correspond to the week of observations. Data are presented collapsed across classrooms and separately by classroom. Again, there were some categories in which interrater agreement was lower than desired (e.g., destructive behavior, noncompliance, physical prosocial behavior) and this limits the inferences that can be drawn.

<u>Physical Aggression</u>

Figure 9 shows that physical aggression was relatively infrequent overall (i.e., maximum of five acts of physical aggression during week 1). As this graph illustrates, acts of physical aggression showed a moderate decline over the course of the intervention. Figure 10 reveals that physical aggression was variable across the four classrooms observed. In particular, children in classroom 3 demonstrated considerable
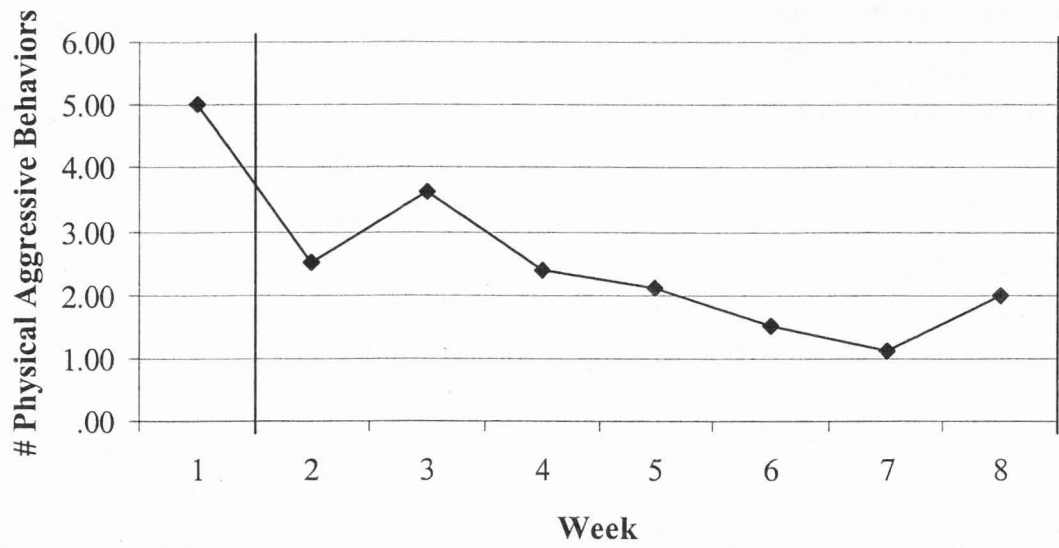
Figure 9. Physical aggression collapsed across classrooms.
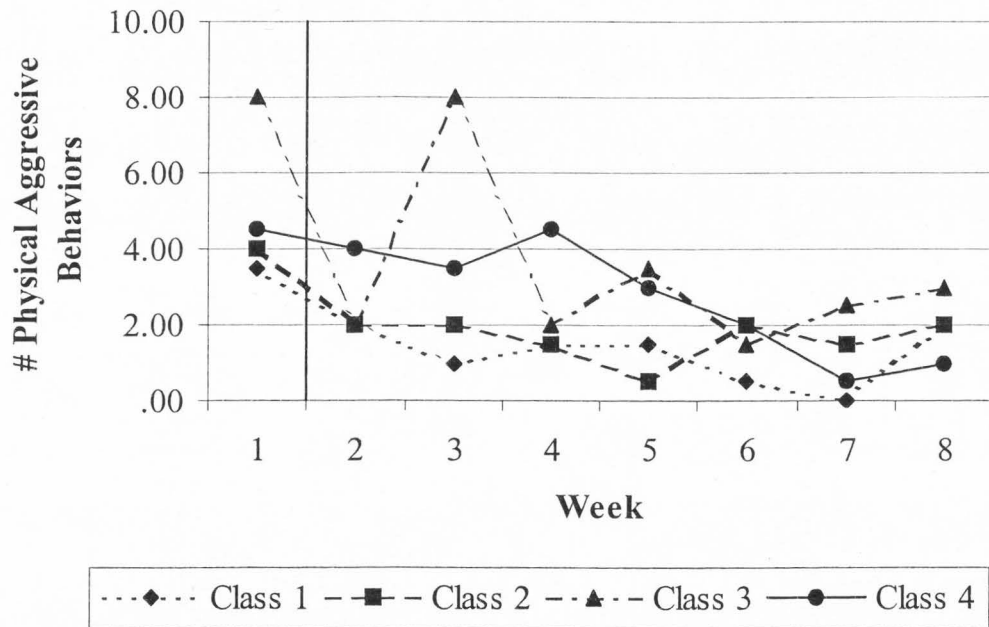
Figure 10. Physical aggression separate by classroom.

physical aggression prior to the intervention and during week 3 of behavioral observations. Acts of aggression then appear to have declined for the remainder of the program. Children in classroom 4 appear to have exhibited moderately high levels of physical aggression until week 4, when these behaviors declined and remained at a low frequency. Children in classrooms 1 and 2 exhibited relatively low rates of aggression, with a modest decline demonstrated following the beginning of the intervention. Overall, these findings indicate that the number of acts of physical aggression declined during the intervention, particularly in classrooms 3 and 4.

Verbal Aggression

As seen in Figure 11, verbal aggression was also relatively infrequent. Verbal aggression peaked during week 2 (i.e., following the first session) and declined to an average less than one verbal aggressive behavior per observation. Figure 12 shows that there was some variability among the four classrooms. In classroom 1, verbal aggression peaked during week 2 and subsequently declined to near zero for the remainder of the intervention. Children in classroom 3 exhibited the most acts of verbal aggression prior to the intervention and subsequently declined to a relatively low rate. Classroom 4 children demonstrated some variability across the eight weeks of observation, with no apparent trend established. Verbal aggression in classroom 2 remained at a relatively low and stable rate throughout the program. These findings indicate some reduction in verbal aggression, with declines primarily noted in classrooms 1 and 3.

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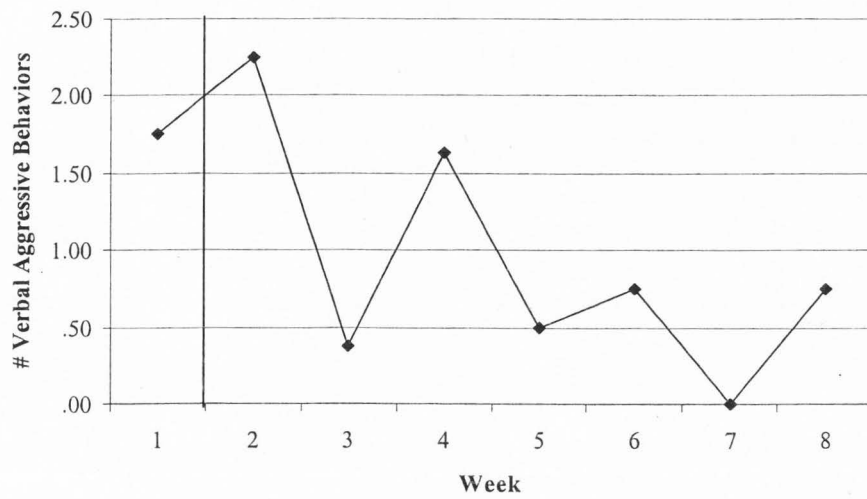
Figure 11. Verbal aggression collapsed across classrooms.
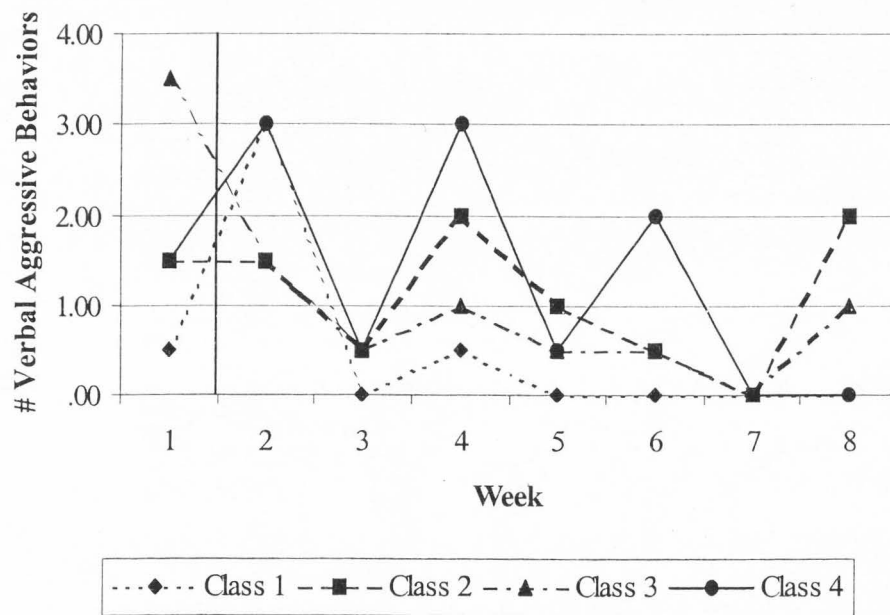
Figure 12. Verbal aggression separate by classrooms.

Destructive Behavior

The graph in Figure 13 shows that destructive behaviors were quite rare, generally occurring on an average of less than once per observation interval. Destructive behaviors remained fairly stable until the last week of the program, when they peaked to an average of one destructive behavior. Figure 14 shows relatively little variability among the classrooms, with the exception of week 8 in which there were three destructive behaviors observed in classroom 3. Overall, these findings indicate that destructive behaviors were relatively stable and infrequent throughout the intervention.

Physical Prosocial Behavior

As seen in Figure 15, physical prosocial behaviors were relatively infrequent during the intervention. This graph indicates that these behaviors declined following the first session and again during weeks 7 and 8. The graph in Figure 16 shows that
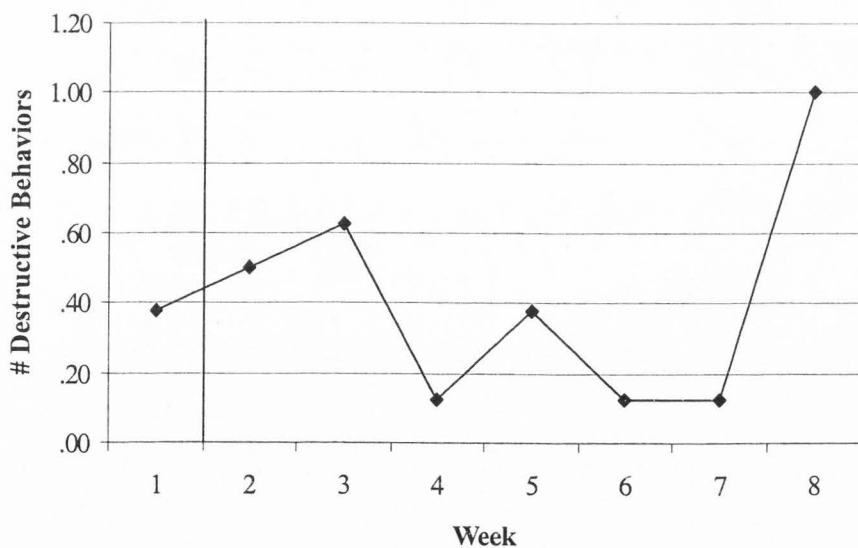
Figure 13. Destructive behaviors collapsed across classrooms.
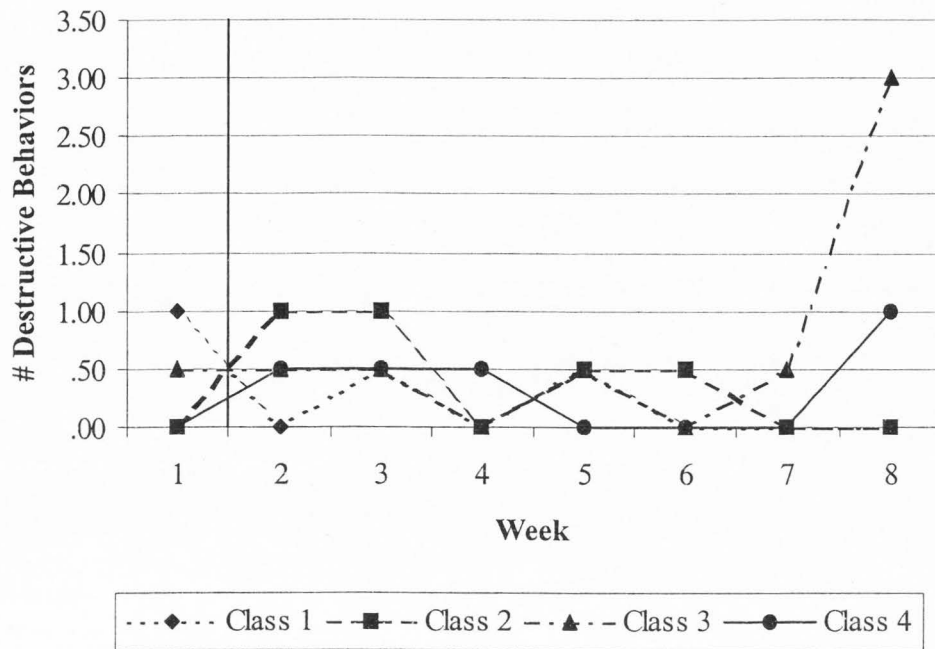
Figure 14. Destructive behaviors separate by classroom.
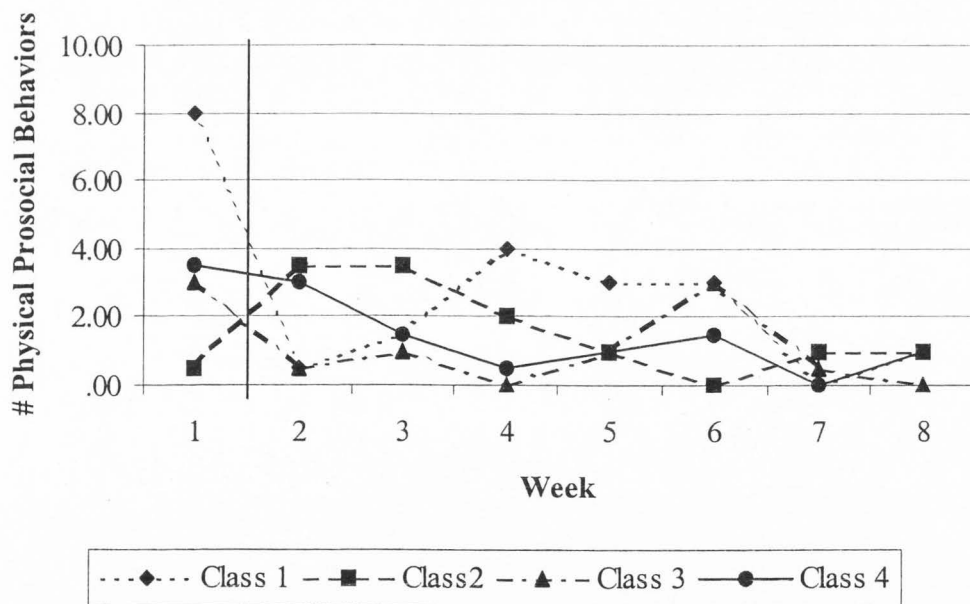
Figure 15. Physical prosocial behavior collapsed across classrooms.
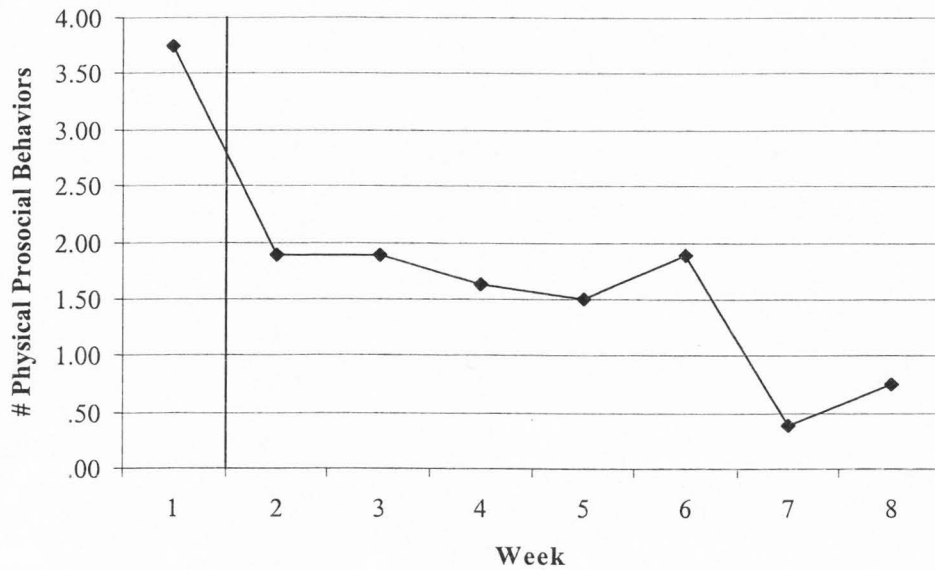
Figure 16. Physical prosocial behavior separate by classroom.

prosocial behaviors declined most notably in classroom 1, where eight physical prosocial

behaviors were observed prior to the intervention. During subsequent weeks these

behaviors were reduced and were comparable to other classrooms. In each of the other

classrooms, physical prosocial behaviors appear to have occurred at a relatively stable and

infrequent rate. However, it appears that in all classrooms the number of these behaviors

was reduced during the final 2 weeks of the program.

Verbal Prosocial Behavior

Figure 17 shows that verbal prosocial behaviors were seldom observed throughout

the intervention. These behaviors declined following the first session and remained at a

low rate. Figure 18 illustrates that in classroom 2, verbal prosocial behaviors showed an

initial decline but then returned to a rate near that observed at baseline. In the other

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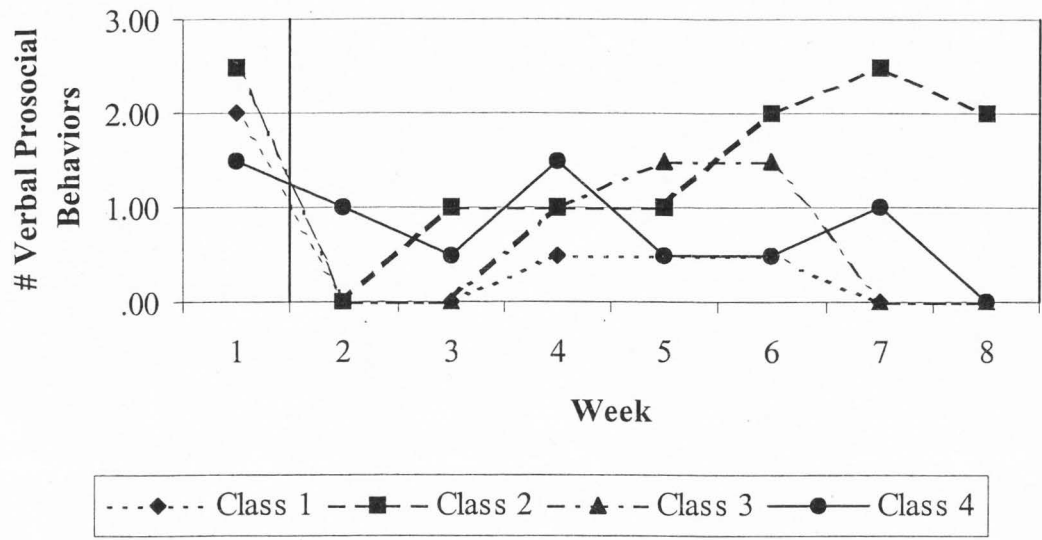
Figure 17. Verbal prosocial behavior collapsed across classrooms.
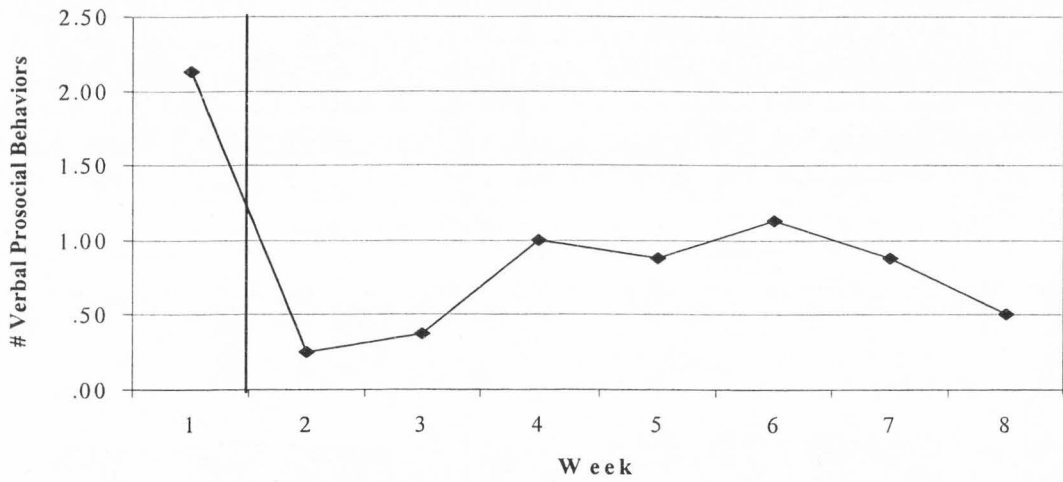
Figure 18. Verbal prosocial behaviors separate by classroom.

classrooms, these behaviors declined following the first session and remained at a low rate for the duration of the program.

Compliance

The graph in Figure 19 indicates that children were generally compliant with teacher commands, and compliance remained stable during the intervention. Figure 20 shows some variability among the four classrooms, but compliance remained at a relatively stable rate. One exception is in classroom 4, where child compliance was somewhat variable and was particularly low during week 5. These findings indicate that children in the various classrooms were generally compliant, and these behaviors showed little change over the course of the intervention.
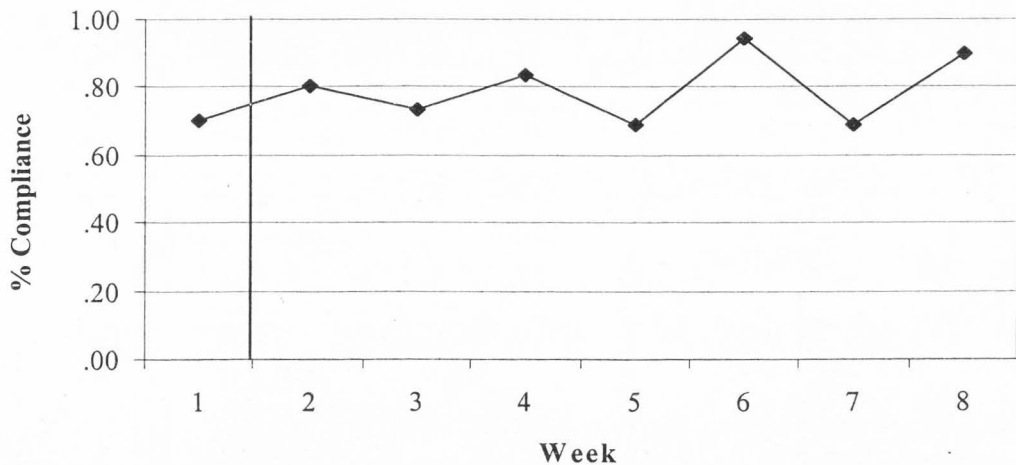
Figure 19. Percent compliance collapsed across classrooms.
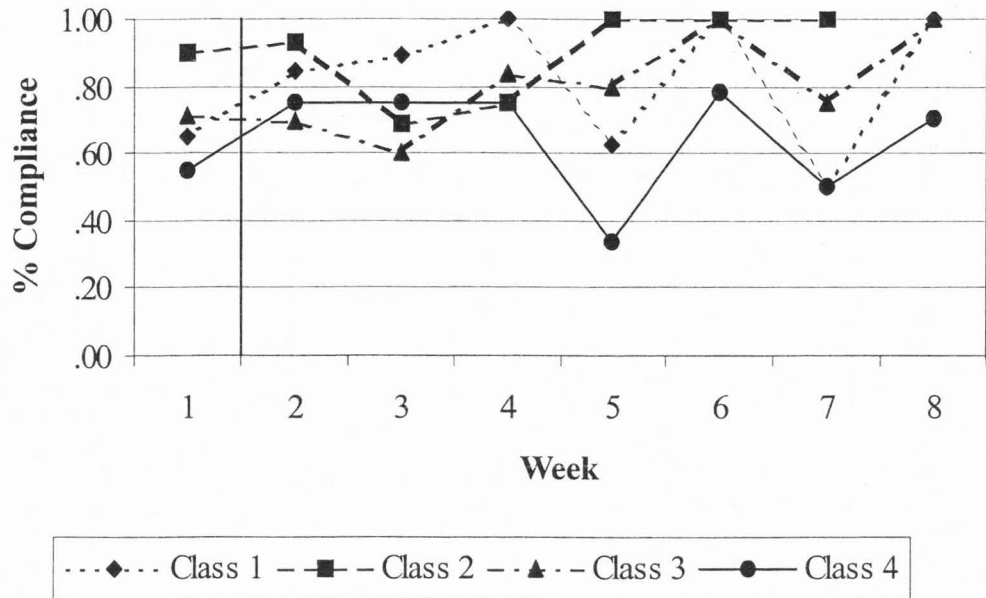
<u>Figure 20.</u> Percent compliance separate by classroom.

<u>Pre- and Postintervention Scores on the</u>
<u>Disruptive Behavior Disorders Rating Scale</u>

As can be seen in Table 4, teacher ratings of inattentive, hyperactive-impulsive,

and oppositional defiant child behaviors were reduced following the intervention. To

evaluate the statistical significance of these changes and differences as a function of

classroom, mixed within-between analyses of variance were conducted for all three

subscales with time as the within subjects variable and class used as a between subjects

variable (see Table 5). Descriptive statistics and standardized mean difference effect

sizes by classroom are presented in Table 6.

For inattentive behaviors, results indicated a statistically significant ($\underline{F}$ = 8.96, $\underline{p}$ =

.003) reduction following the intervention, though the magnitude of this change was

relatively small ($\underline{ES}$ = 0.22). The main effect for classroom was not statistically

Table 4

Descriptive Statistics and Standardized Mean Difference Effect Sizes for Pre-/

Postintervention Measures Overall

Child measure ($\underline{n}$ = pre, post)	Preintervention Mean ($\underline{SD}$)	Postintervention Mean ($\underline{SD}$)	SMD $\underline{ES}$
DBDRS: Inatt. ($\underline{n}$ = 221, 196)	5.6 (5.8)	4.3 (4.8)	0.22
DBDRS: Hyper.-Imp. ($\underline{n}$ = 221, 196)	6.0 (6.0)	4.4 (5.0)	0.27
DBDRS: Opp. Def. ($\underline{n}$ = 221, 196)	3.9 (5.7)	3.2 (4.7)	0.12
SSQ: # Prob. ($\underline{n}$ = 219, 196)	2.7 (2.9)	2.0 (2.4)	0.24
SSQ: Sev. ($\underline{n}$ = 139, 117)	2.4 (1.4)	2.1 (1.1)	0.21

Table 5

Mixed Analysis of Variance (Time x Classroom) for Inattentive, Hyperactive-

Impulsive, and Oppositional Defiant Ratings on the DBDRS

DBDRS subscale	Source of variance	$\underline{df}$	$\underline{F}$	$\underline{p}$
Inattentive	Time (within)	1	8.96	.003
	Class (between)	12	1.50	.130
	Time x Class	12	3.83	< .001
	Error	183		
Hyperactive-impulsive	Time (within)	1	13.72	< .001
	Class (between)	12	1.11	.354
	Time x Class	12	2.92	.001
	Error	183		
Oppositional defiant	Time (within)	1	6.08	.015
	Class (between)	12	1.66	.080
	Time x Class	12	2.20	.013
	Error	183		

Table 6

Descriptive Statistics and Standardized Mean Difference Effect Sizes for Pre-/

Postintervention Measures by Classroom

Class	Child measure (n = pre, post)	Preintervention mean (SD)	Postintervention mean (SD)	SMD ES
1	DBDRS: Inatt. (n = 18, 17)	5.6 (4.7)	4.7 (3.6)	0.19
	DBDRS: Hyper.-Imp. (n = 18, 17)	4.9 (6.5)	3.4 (4.7)	0.23
	DBDRS: Opp. Def. (n = 18, 17)	3.8 (6.5)	2.6 (3.6)	0.18
	SSQ: # Prob. (n = 18, 17)	2.1 (2.5)	2.0 (2.3)	0.04
	SSQ: Sev. (n = 12, 12)	1.5 (1.1)	1.1 (0.5)	0.36
2	DBDRS: Inatt. (n = 16, 8)	3.1 (5.0)	4.5 (4.0)	-0.28
	DBDRS: Hyper.-Imp. (n = 16, 8)	3.7 (4.9)	4.9 (4.7)	-0.24
	DBDRS: Opp. Def. (n = 16, 8)	1.7 (3.1)	2.1 (3.1)	-0.13
	SSQ: # Prob. (n = 16, 8)	2.0 (3.3)	2.8 (3.8)	-0.24
	SSQ: Sev. (n = 5, 3)	2.3 (1.4)	3.7 (1.4)	-1.00
3	DBDRS: Inatt. (n = 17, 17)	5.1 (7.4)	4.4 (5.4)	0.09
	DBDRS: Hyper.-Imp. (n = 17, 17)	3.6 (5.1)	4.2 (4.4)	-0.12
	DBDRS: Opp. Def. (n = 17, 17)	3.5 (4.8)	1.8 (3.3)	0.35
	SSQ: # Prob. (n = 16, 17)	2.3 (3.2)	1.6 (2.4)	0.22
	SSQ: Sev. (n = 6, 7)	2.1 (0.3)	2.5 (1.0)	-1.33
4	DBDRS: Inatt. (n = 16, 15)	5.8 (6.4)	3.0 (3.0)	0.48
	DBDRS: Hyper.-Imp. (n = 16, 15)	8.7 (7.6)	4.7 (4.6)	0.53
	DBDRS: Opp. Def. (n = 16, 15)	4.8 (6.9)	3.6 (4.9)	0.17
	SSQ: # Prob. (n = 16, 15)	3.6 (3.3)	2.3 (2.7)	0.39
	SSQ: Sev. (n = 10, 11)	2.3 (1.3)	1.6 (0.7)	0.54
5	DBDRS: Inatt. (n = 17, 14)	6.7 (5.3)	0.9 (1.2)	1.09
	DBDRS: Hyper.-Imp. (n = 17, 14)	7.1 (7.0)	2.8 (2.8)	0.61
	DBDRS: Opp. Def. (n = 17, 14)	5.3 (6.2)	1.6 (2.0)	0.60

(table continues)

Class	Child measure (n = pre, post)	Preintervention mean (SD)	Postintervention mean (SD)	SMD ES
	SSQ: # Prob. (n = 17, 14)	2.5 (2.9)	0.9 (1.7)	0.55
	SSQ: Sev. (n = 9, 5)	3.7 (1.5)	1.8 (1.2)	1.27
6	DBDRS: Inatt. (n = 17, 17)	3.8 (5.2)	3.1 (5.5)	0.13
	DBDRS: Hyper.-Imp. (n = 17, 17)	6.3 (5.8)	2.5 (4.1)	0.66
	DBDRS: Opp. Def. (n = 17, 17)	3.1 (5.2)	2.5 (4.9)	0.12
	SSQ: # Prob. (n = 17, 17)	2.4 (2.5)	1.3 (2.2)	0.44
	SSQ: Sev. (n = 14, 9)	2.4 (1.1)	2.0 (1.0)	0.36
7	DBDRS: Inatt. (n = 16, 16)	6.1 (6.1)	7.4 (5.2)	-0.21
	DBDRS: Hyper.-Imp. (n = 16, 16)	5.6 (5.5)	4.2 (5.0)	0.25
	DBDRS: Opp. Def. (n = 16, 16)	3.6 (4.4)	2.6 (4.3)	0.23
	SSQ: # Prob. (n = 15, 16)	2.4 (2.9)	1.8 (2.5)	0.21
	SSQ: Sev. (n = 8, 10)	2.1 (1.1)	2.0 (1.3)	0.09
8	DBDRS: Inatt. (n = 18, 9)	6.6 (5.6)	3.8 (3.7)	0.50
	DBDRS: Hyper.-Imp. (n = 18, 9)	6.7 (5.1)	6.0 (6.6)	0.14
	DBDRS: Opp. Def. (n = 18, 9)	3.4 (4.2)	3.8 (3.9)	-0.10
	SSQ: # Prob. (n = 18, 9)	3.0 (2.3)	2.9 (2.0)	0.04
	SSQ: Sev. (n = 15, 7)	2.8 (1.3)	2.0 (0.7)	0.62
9	DBDRS: Inatt. (n = 16, 16)	4.5 (6.2)	2.2 (3.8)	0.37
	DBDRS: Hyper.-Imp. (n = 16, 16)	5.3 (6.6)	3.2 (4.3)	0.32
	DBDRS: Opp. Def. (n = 16, 16)	4.0 (5.4)	2.3 (3.4)	0.31
	SSQ: # Prob. (n = 16, 16)	2.4 (2.4)	1.8 (2.2)	0.25
	SSQ: Sev. (n = 12, 11)	2.5 (1.4)	2.1 (0.7)	0.29
10	DBDRS: Inatt. (n = 18, 18)	7.5 (3.9)	5.2 (3.1)	0.59
	DBDRS: Hyper.-Imp. (n = 18, 18)	7.6 (5.2)	5.7 (3.6)	0.37
	DBDRS: Opp. Def. (n = 18, 18)	3.8 (5.7)	3.2 (4.2)	0.11
	SSQ: # Prob. (n = 18, 18)	4.8 (2.4)	2.9 (2.8)	0.79
	SSQ: Sev. (n = 17, 13)	2.5 (1.7)	2.1 (0.8)	0.24

(table continues)

Class	Child measure ($\underline{n}$ = pre, post)	Preintervention mean (SD)	Postintervention mean (SD)	SMD ES
11	DBDRS: Inatt. ($\underline{n}$ = 18, 17)	4.0 (4.8)	4.8 (6.2)	-0.17
	DBDRS: Hyper.-Imp. ($\underline{n}$ = 18, 17)	3.3 (3.4)	4.8 (6.4)	-0.44
	DBDRS: Opp. Def. ($\underline{n}$ = 18, 17)	1.3 (1.9)	2.2 (4.2)	-0.47
	SSQ: # Prob. ($\underline{n}$ = 18, 17)	0.8 (1.2)	1.1 (1.3)	-0.25
	SSQ: Sev. ($\underline{n}$ = 8, 10)	1.8 (1.7)	2.3 (1.7)	-0.29
12	DBDRS: Inatt. ($\underline{n}$ = 17, 16)	6.2 (7.8)	2.9 (5.4)	0.42
	DBDRS: Hyper.-Imp. ($\underline{n}$ = 17, 16)	6.8 (6.9)	3.3 (5.1)	0.51
	DBDRS: Opp. Def. ($\underline{n}$ = 17, 16)	5.4 (8.1)	3.9 (6.9)	0.19
	SSQ: # Prob. ($\underline{n}$ = 17, 16)	3.6 (3.7)	1.4 (2.6)	0.59
	SSQ: Sev. ($\underline{n}$ = 10, 5)	2.9 (1.7)	2.8 (0.8)	0.06
13	DBDRS: Inatt. ($\underline{n}$ = 17, 16)	7.3 (6.9)	8.6 (5.3)	-0.19
	DBDRS: Hyper.-Imp. ($\underline{n}$ = 17, 16)	8.2 (6.9)	8.3 (6.4)	-0.01
	DBDRS: Opp. Def. ($\underline{n}$ = 17, 16)	7.3 (7.7)	8.6 (6.3)	-0.17
	SSQ: # Prob. ($\underline{n}$ = 17, 16)	2.8 (2.9)	3.4 (2.5)	-0.21
	SSQ: Sev. ($\underline{n}$ = 13, 14)	2.5 (1.4)	2.8 (1.4)	-0.21

significant ($\underline{F}$ = 1.50, $\underline{p}$ = 0.13), but the time by class interaction was statistically significant ($\underline{F}$ = 3.83, $\underline{p}$ < 0.001). This suggests that there were not significant differences between the classrooms overall. However, there were differences in the reduction of teacher-reported inattention as a function of children's classroom. An examination of the effect sizes by classroom indicates that small to moderate improvements were evidenced in classrooms 4, 8, 9, 10, and 12 and a large improvement was seen in classroom 5. In classrooms 2 and 7, children worsened slightly (i.e., $\underline{ES}$ < -.20) and in classrooms 1, 3, 6, 11, and 13 inattentive behaviors remained relatively stable.

Hyperactive-impulsive behaviors were also found to be statistically significantly reduced following the intervention ($F = 13.72$, $p < 0.001$) and again the time by class interaction was statistically significant ($F = 2.92$, $p = 0.001$). The standardized mean difference effect size of 0.26 suggests that the magnitude of the change was relatively small. The main effect for classroom was not statistically significant ($F = 1.11$, $p = .35$), indicating that there were no significant differences in hyperactive-impulsive behaviors between the classrooms. These findings suggest that reductions in hyperactive-impulsive behaviors were demonstrated overall, though there was significant variability as a function of children's classroom. Review of the standardized mean difference effect sizes by classroom indicates that small to moderate improvements were observed in classrooms 1, 4, 5, 6, 7, 9, 10, and 12. Hyperactive-impulsive behaviors remained relatively stable in classrooms 3, 8, and 13 and became somewhat worse in classrooms 2 and 11.

Oppositional defiant behaviors were found to be statistically significantly reduced following the intervention ($F = 6.08$, $p = 0.015$). The standardized mean difference effect size suggests that the magnitude of this changes was quite small ($ES = .12$). The interaction between time and classroom was statistically significant ($F = 2.20$, $p = .013$), but as with inattentive and hyperactive-impulsive behaviors the main effect for classroom was not statistically significant ($F = 1.66$, $p = 0.08$). These findings indicate that statistically significant reductions were demonstrated in children's oppositional defiant behaviors overall and changes varied as a function of children's classroom. Standardized mean difference effect sizes computed separately by classroom suggest

that small to moderate reductions in oppositional defiant behavior were observed in classrooms 3, 5, 7, and 9. Oppositional defiant behaviors in classrooms 1, 2, 4, 6, 8, 10, 12, and 13 remained the same and classroom 11 worsened to some degree.

Overall, these findings indicate that according to teacher report, children evidenced statistically significant reductions in inattentive, hyperactive-impulsive, and oppositional defiant behaviors. The statistically significant interactions between time and classroom for these variables suggest that reductions varied as a function of which classroom children attended. The relatively small magnitude of these reductions indicates that the changes evidenced may not be substantial enough to be considered clinically meaningful. Effect sizes computed separately by classroom indicate that in some classrooms disruptive child behaviors consistently either improved or remained the same (i.e., classrooms 1, 4, 5, 6, 9, 10, and 12) for each dependent variable. Conversely, in classrooms 2, 11, and 13 ratings indicate that children's behavior either remained the same or became worse.

Pre- and Postintervention Scores on the
School Situations Questionnaire

Table 4 shows that children evidenced reductions in both the number and severity of teacher-reported problem behaviors in the classroom. Descriptive statistics for the SSQ and standardized mean difference effect sizes by classroom are shown in Table 6. The statistical significance of these reductions was evaluated using a mixed within-between analysis of variance, with time as the within-subjects variable and classroom as the between-subjects variable (see Table 7). The results of the analysis of variance for

Table 7

Mixed Analysis of Variance (Time x Classroom) for the Number and Severity of Child

Behavior Problems on the SSQ

SSQ subscale	Source of variance	df	F	p
# of child behavior problems	Time (within)	1.0	10.98	.001
	Class (between)	12	1.67	.08
	Time x Class	12	3.54	<.001
	Error	181		
Severity of behavior problems	Time (within)	1.0	3.18	.08
	Class (between)	12	1.26	.26
	Time x Class	12	1.72	.08
	Error	83		

the number of child behavior problems indicate that the reduction reported by teachers

was statistically significant ($\underline{F}$ = 10.98, $\underline{p}$ = 0.001). The standardized mean difference

effect size indicates that the magnitude of this change was small ($\underline{ES}$ = .24). The main

effect for classroom was not statistically significant ($\underline{F}$ = 1.67, $\underline{p}$ = 0.08), indicating that

there were not significant differences between the various classrooms. The interaction

effect was statistically significant ($\underline{F}$ = 3.54, $\underline{p}$ < .001), suggesting that reductions in the

number of child behavior problems varied as a function of children's classroom. Effect

sizes computed separately by classroom indicate that small to moderate improvements

(i.e., reduced number of problem situations) were evidenced in classrooms 3, 4, 5, 6, 7,

9, 10, and 12. Small to moderate increases in the number of problem situations were

found in classrooms 2, 11, and 13. The number of problems remained constant in classrooms 1 and 8.

The results of the analysis of variance for the severity of child behavior problems indicate that this reduction was not statistically significant ($\underline{F}$ = 3.18, $\underline{p}$ = .08). The mean difference effect size suggests that the magnitude of the change reported in severity of children's behavior problems was small ($\underline{ES}$ = .21). The main effect for classroom and the time-by-classroom interaction effects were not statistically significant ($\underline{F}$ = 1.26, $\underline{p}$ = .26 and $\underline{F}$ = 1.72, $\underline{p}$ = .08, respectively). A review of the effect sizes computed separately by classroom indicates that small to moderate improvements were reported by teachers in classrooms 1, 4, 6, 8, 9, and 10 and a large improvement was reported by the teachers in classroom 5. In classrooms 11 and 13, small to moderate increases in the severity of problematic child behaviors were observed. Large increases in problem severity were reported by the teachers in classrooms 2 and 3. Classrooms 7 and 12 remained unchanged following the intervention.

Overall, these findings indicate that statistically significant reductions in the number of child behavior problems reported by teachers were demonstrated following the intervention. However, the magnitude of this reduction was relatively small. As with previous analyses, this reduction varied as a function of children's classroom membership. Statistically significant reductions were not demonstrated for the severity of child behavior problems. In classrooms 2, 11, and 13 teachers consistently reported increases in the number and severity of child behavior problems while teachers in the

other classrooms reported either some improvement or stability of behavior problems following the intervention.

Treatment Acceptability

Session Ratings and Qualitative Feedback

Descriptive statistics were computed for teacher completed session rating scales to evaluate the acceptability of each session (see Table 8). These analyses were computed separately for the four items related to process variables and the four items related to the use of strategies in the classroom. It should be noted that these analyses are somewhat limited by poor teacher response, particularly for later sessions. Sessions 1 and 2 were rated by 23 of the 26 teachers involved. However, Sessions 3, 4, and 5 were only rated by 17, 13, and 12 teachers, respectively. Thus, these measures may not adequately reflect the opinions of all teachers involved in the project. Across all five sessions, results indicate that teachers' ratings for process variables were higher than their ratings for the application of the strategies in the classroom. Ratings of process variables generally indicate that teachers were satisfied with facilitator efforts to promote group participation and the helpfulness of information presented, and they provided favorable self-ratings of their participation and attention during the sessions. Ratings related to the use of strategies in the classroom indicated that teachers were either neutral or slightly dissatisfied. This was particularly true for Session 3, in which teachers would have been rating their use of child-directed activities in the classroom during the

Table 8

Means, Standard Deviations, and Ranges for Teachers' Session Ratings

Teacher session	Session 1 ($\underline{n}$ = 23) $\underline{M}$ (SD) Range	Session 2 ($\underline{n}$ = 23) $\underline{M}$ (SD) Range	Session 3 ($\underline{n}$ = 17) $\underline{M}$ (SD) Range	Session 4 ($\underline{n}$ = 13) $\underline{M}$ (SD) Range	Session 5 ($\underline{n}$ = 12) $\underline{M}$ (SD) Range
Session process					
The leader encouraged group participation	4.6 (0.8) 2 - 5	4.4 (0.8) 3 - 5	4.7 (0.5) 4 - 5	4.7 (0.5) 4 - 5	4.4 (0.7) 3 - 5
I actively participated in today's session	2.8 (1.2) 1 - 5	3.3 (1.2) 1 - 5	4.4 (0.9) 2 - 5	3.6 (1.2) 2 - 5	3.3 (1.0) 2 - 5
I paid careful attention to the information presented today	4.0 (1.0) 2 - 5	4.0 (1.2) 1 - 5	4.2 (0.7) 2 - 5	4.6 (0.5) 4 - 5	4.2 (0.8) 2 - 5
The information presented today was helpful	4.0 (0.9) 2 - 5	3.6 (1.0) 2 - 5	4.0 (0.8) 2 - 5	4.7 (0.5) 4 - 5	4.5 (0.5) 4 - 5
In-class application					
Last week's in class practice was helpful	NA	NA	3.5 (1.1) 2 - 5	3.6 (0.8) 3 - 5	4.2 (0.7) 3 - 5
I tried last week's assignment in class	NA	NA	3.9 (1.2) 1 - 5	3.1 (1.2) 1 - 5	3.8 (0.9) 2 - 5
Student's responded well to last week's assignment	NA	NA	3.2 (1.1) 2 - 5	3.6 (1.2) 1 - 5	3.4 (0.5) 3 - 4
Last week's assignment helped with my teaching duties	NA	NA	2.6 (1.2) 1 - 5	3.8 (1.2) 1 - 5	4.1 (0.9) 3 - 5

previous week. Teachers' responses for this session indicate that they did not feel that child-directed activities helped with their teaching duties.

Qualitative data were taken from the open-ended questions for each session. As noted above, session ratings were not completed by all of the teachers involved in the study and a number of teachers failed to answer the open-ended questions included. This again limits the utility of these measures and it is not clear whether the responses

obtained adequately reflect the opinions of all teachers involved. Teacher comments for Session 1 indicated that teachers found the review of behavioral concepts (e.g., positive and negative reinforcement) to be helpful, along with the discussion of the function of child behaviors. Several teachers said that the questions and comments provided by other teachers during the session were helpful. Most teachers said that they would be able to implement the ideas discussed, with only one teacher reporting that she did not feel that the strategies were applicable in the classroom. Suggestions for improvement included the use of more specific examples related to the Head Start setting and more opportunity for discussion.

Comments for Session 2 were generally less positive. Several teachers reported that they found information regarding the use of praise and noticing positive child behaviors to be useful. However, a number of teachers commented that they were not sure what was going to be accomplished by implementing child-directed activities and they were not sure that they could implement the activities in the classroom. Among teachers who said that they would not be able to implement these strategies, a few indicated that they anticipated that it would be difficult to find the time to practice. Additional comments suggested that teachers disagreed with the more general concepts of not asking questions or making directive statements regarding children's play. A few teachers also expressed concern about making evaluative judgments regarding children's play via praise statements. Suggestions for improvement of the session included being more clear about the objectives and guidelines for child-directed activities.

Following Session 3, a number of teachers commented that the in-session practice

and further explanation helped to clarify the use of child-directed activities. Teachers commented that it was helpful to learn skills for reflecting children's verbalizations rather than asking questions. After this session, most teachers indicated feeling that they would be able to implement the activities in the classroom. There were no suggestions for improving the session.

Teacher comments for Session 4 indicated that teachers found the guidelines for giving effective commands to be helpful. In general, these teachers also commented feeling that they would be able to incorporate recommended strategies in the classroom. Again, there were no suggestions for improving the session.

Comments for Session 5 indicated that teachers found the information regarding the function of children's behavior to be useful. Teachers commented that the strategies presented would be helpful for understanding children's behavior and determining potential antecedents and consequences. Participating teachers also indicated that the ideas for classroom interventions were useful and that they would be able to implement the recommendations in the classroom. A teacher commented that the session seemed rushed and that there was too much discussion among teachers. Another teacher suggested that it would have been helpful to talk more about ways to alter the antecedents of misbehavior.

Therapy Attitudes Inventory

Descriptive statistics were computed for the modified TAI (Eyberg, 1993) completed by teachers following the intervention. These analyses were computed

separately for each item as well as for the total score (see Table 9). Results indicate that

the intervention was viewed as moderately acceptable overall, with relatively little

variability in teachers' ratings on the 10 items of this measure. There was a fair amount

of variability among teachers' total scores on the TAI (range = 19; minimum = 25,

maximum = 44). A subset of three teachers (16.7%) had total scores of less than 30,

indicating some dissatisfaction with the intervention. The scores of 30 or higher for

Table 9

Means, Standard Deviations, and Ranges for the Modified TAI

Item	$\underline{M}$	$\underline{SD}$	Range
Regarding techniques of disciplining, I feel I have learned . . .	3.4	.7	2 - 4
Regarding teaching my students new skills, I feel I have learned . . .	3.1	.7	2 - 4
Regarding the relationship between myself & my students, I feel we get along . . .	3.5	.7	3 - 5
Regarding my confidence in my ability to discipline my students, I feel . . .	3.7	.6	3 - 5
The major behavior problems that my students presented in the classroom before the program started are at this time . . .	3.6	.7	2 - 5
I feel that my students' compliance to my commands or requests are at this time . . .	3.5	.6	2 - 4
Regarding the progress my students have made in their general behavior, I am . . .	3.6	.6	3 - 5
To what degree has the treatment program increased your confidence as a teacher in general . . .	3.8	.7	3 - 5
I feel the type of program that was used to help me improve the behavior of my students was . . .	3.6	.8	2 - 5
My general feeling about the program I participated in is . . .	3.8	1.0	1 - 5
Total Score	35.3	5.4	25 - 44

remaining teachers suggest neutral opinions or general satisfaction with the program.

Overall, these results indicate that TCIT was viewed as moderately acceptable by this

group of preschool teachers. The range in scores indicates that there is some variability

in individual teachers' acceptance of the program.

Discussion Groups

When asked about the format of the intervention, teachers reported that they liked

meeting as a group, as this allowed for discussion and "brainstorming" while also

providing time for the group leader to address individual questions. They suggested

that it may have been more effective to spread the sessions out over a longer period of

time (e.g., biweekly or once per month rather than every week). Several teachers

reported feeling that having sessions less frequently may have allowed more time to

implement and practice the techniques learned during sessions. A number of teachers

also commented that it would have been more helpful to implement the program at the

beginning of the academic year. They suggested that this would have allowed them to

use the recommended interventions and techniques consistently rather than attempting

to implement these ideas after much of the year had passed. Several teachers

commented that the group leader generally seemed knowledgeable and enthusiastic, but

they also suggested that it may have been helpful to have a more structured protocol and

for the leader to be more clear initially in providing a rationale for the program.

There was considerable variability in teacher responses when asked about the

elements of the program that they found particularly useful and the degree to which they

had implemented these elements in the classroom. Several teachers commented that it was difficult to implement child-directed activities in the classroom and these were not viewed as being useful. These teachers reported feeling that it was somewhat unnatural to interact with children in the nondirective manner suggested and difficult to devote their full attention to one small group of children. Other teachers commented that this portion of the program was effective in their classrooms, and that it helped to remind them of the importance of being positive in their interactions with children. A few teachers commented that it was helpful to practice the use of child-directed activities in session and receive feedback from the group leader. With regard to suggestions related to giving effective commands, teachers generally indicated that they were able to implement suggestions and these were helpful reminders, but that they already had some basic knowledge in this area. Finally, a number of teachers commented that they enjoyed the sessions that focused on determining the possible functions of children's behavior. Although they reported that they were not able to complete the observation forms provided, these teachers indicated that they did take a more functional approach when discussing behavior problems and developing interventions.

As noted above, several teachers suggested that it would have been helpful to provide the intervention at the beginning of the year and spread the sessions out over a longer period of time. Some teachers reported that they would have liked more time for practice with feedback about their teaching and their use of techniques described in the intervention. It was also suggested that it might have been helpful to discuss methods for involving parents in dealing with child behavior problems. A few teachers

commented that it was unrealistic to expect the completion of paperwork related to the intervention and that it would have been helpful to have an assistant in the classroom to help with some of the weekly exercises (e.g., recording the number of praise statements, descriptive and reflective comments, questions and commands, and any negative comments made). Although it is of less relevance to the intervention itself, a number of teachers commented that it was quite uncomfortable for them to have observers in their classrooms and they suggested that it would have been better to spread observers out, so that there were not both child and teacher observers in the same classroom.

Correlation Between Teacher Variables
and Child Treatment Response

Given the differences in child treatment response observed across classrooms, correlations were computed to explore the association between teacher variables (e.g., education, years of teaching experience, teacher efficacy, treatment acceptability rating) and standardized mean difference effect sizes computed separately by classroom. The results of these analyses are presented in Table 10. These findings reveal moderate, statistically significant positive correlations between teachers' acceptability ratings on the TAI and effect sizes for inattentive, hyperactive-impulsive, and oppositional defiant subscales on the DBDRS. A moderate and statistically significant positive correlation was also found between TAI scores and the effect size for the number of problems reported by teachers on the SSQ. These findings indicate that higher ratings on the TAI were associated with greater improvement in child behavior (i.e., larger effect sizes). Obviously, the causal direction of this relationship cannot be determined from these

Table 10

Correlations Between Teacher Variables and Child Treatment Response

Variable	Ed.	Yrs. Exp.	TES	TAI	Inatt. SMD	H-I SMD	ODD SMD	# Prb. SMD
Yrs. Exp.	-.004							
TES	-.114	-.059						
TAI	-.089	.172	-.116					
Inatt. SMD	.166	.046	.192	.515*				
H-I SMD	.317	-.059	-.041	.461*	.682*			
ODD SMD	.308	.301	.126	.431*	.624*	.683*		
# Prb SMD	.218	.165	.153	.504*	.727*	.816*	.680*	
Sev. Prb SMD	.158	-.353	.062	.287	.727*	.730*	.352	.469*

Note. Ed. = Level of education; Yrs. Exp. = Years of teaching experience; TES = Teacher Efficacy Scale, total score; TAI = Therapy Attitudes Inventory score; Inatt. SMD = Disruptive Behavior Disorders Rating Scale, Inattentive standardized mean difference; H-I SMD = Disruptive Behavior Disorders Rating Scale, Hyperactive-Impulsive standardized mean difference; ODD SMD = Disruptive Behavior Disorders Rating Scale, Oppositional Defiant standardized mean difference; # Prb. SMD = School Situations Questionnaire, Number of Problems standardized mean difference; Sev. Prb. SMD = School Situations Questionnaire, Severity of Problems standardized mean difference.

analyses. Although the intervention may have been rated as more acceptable by teachers whose students displayed greater improvements in behavior, it may also be that teachers' ratings on the DBDRS were influenced by how acceptable they found the treatment to be. Correlations between effect sizes and teacher education, years of teaching experience, and self-efficacy were not found to be statistically significant, indicating that these variables were not strongly associated with children's treatment response. Further, the correlations between teachers' TAI ratings and other teacher variables were not statistically significant, indicating that treatment acceptability was not associated with teachers' education, years of teaching experience, or self-efficacy.

CHAPTER V

DISCUSSION

Overview

The purpose of this study was to provide information regarding the initial

development and evaluation of Teacher-Child Interaction Training (TCIT), a classroom-

based adaptation of the PCIT program developed by Eyberg (1988). This intervention

was provided to a group of 26 Head Start teachers in 13 classrooms and included

sessions focusing on basic behavioral principles, implementing child-directed activities

in the classroom, giving effective commands, evaluating the function of children's

behavior, and developing interventions based on the hypothesized function of an

inappropriate behavior. It was hoped that the results would contribute to the literature

on classroom-based interventions developed specifically for preschoolers and that this

component could ultimately be included along with traditional PCIT in a comprehensive

early intervention/prevention program that is integrated across settings.

The results indicated minimal changes in observed teaching behavior overall and

no significant change in teachers' sense of self-efficacy after taking part in the program.

Observations of child behavior indicated some reduction in physical and verbal

aggression. Unfortunately, prosocial behaviors were also found to decline over the

course of the intervention. Teacher-completed behavior rating scales indicated

statistically significant reductions in disruptive behavior overall, with significant

interaction effects between time and classroom also revealed. Estimates of effect size

indicated that the magnitude of the changes in disruptive behavior were generally small and there was considerable variability across different classrooms. Finally, treatment acceptability data suggest that teachers found the sessions and the intervention as a whole to be acceptable. Acceptability ratings were lower for the session dealing with the use of child-directed activities in the classroom and teacher comments indicated that some teachers did not feel that these strategies could be implemented. During discussion groups held after the completion of the program, teachers commented that they liked the group format but would have preferred to spread sessions out over a longer period of time and would have liked to receive the intervention at the beginning of the academic year. Additional suggestions included providing greater feedback, discussing methods for involving parents, and providing an assistant to help with some of the weekly exercises.

<div align="center">Treatment Acceptability, Changes in Teaching Behavior,

and Changes in Teachers' Self-Efficacy</div>

Treatment Acceptability

Results indicate that the treatment was moderately well-received by participating teachers. Although limited by poor response rates during later sessions, ratings indicate that teachers found the content of each of the sessions to be acceptable and process variables (e.g., efforts to encourage participation, attention to information, helpfulness of information presented) were rated highly. Ratings for the in-class application of the intervention were lower, though still indicative of moderate acceptability. The in-class

application of child-directed activities was an exception to this, and teacher ratings indicate that this element was not viewed as being helpful with teaching duties. There was a fair amount of variability in teacher responses on the TAI (Eyberg, 1993), though the majority (i.e., 23 of the 26 participants) of these ratings indicate either neutral opinions or general satisfaction with the intervention (as indicated by scores of 30 or higher). Importantly, teacher ratings on the TAI were found to correlate with child treatment response as measured with behavior rating scales. This may indicate that teachers who enjoyed the program and found it to be acceptable were more likely to implement the various components and note improvements in child behavior. Of course, an alternative explanation would be that acceptability was higher in classrooms where teachers noted behavioral improvements when they used the intervention. Finally, this may reflect a bias in teacher responding on behavior rating scales, wherein reductions are reported by teachers who enjoyed the program.

Teachers' responses to open-ended questions on the session ratings and responses during posttreatment focus groups provide further information about the acceptability of the program and valuable suggestions for improvements. These comments are summarized here and integrated into subsequent sections dealing with observed teacher behaviors and proposed modifications to the intervention. Teachers reported that they liked the group format and the opportunity to benefit from the questions and comments of their colleagues. Teacher comments indicate that they were not sure what would be accomplished by integrating child-directed activities in the classroom and the rationale for this element was not clearly articulated. In addition, a few teachers said that it

would be difficult to find the time to practice these activities. Given the comments following Session 3, it appears that the purpose of this activity was clarified for some teachers and the opportunity to practice with therapist feedback was useful. The need for additional feedback was expressed by several teachers during the focus groups. Teacher comments for the final two sessions were generally positive, suggesting that they found the information regarding functional assessment and linking interventions to hypothesized functions to be helpful. Although the guidelines for giving effective commands were considered useful and applicable, several teachers commented that this information was largely review.

Teachers' suggestions for improving the program included implementing the program at the beginning of the year and spreading sessions out over a longer period of time (e.g., meeting every other week or once per month). Teachers also expressed a need for more feedback regarding their use of target skills and said that it would be helpful to have an assistant to help with time consuming elements of the program. A few teachers suggested that it would be helpful to talk about methods for involving parents in addressing disruptive child behaviors. Although not directly related to the intervention, teachers from the Logan, Utah, center reported that it was burdensome to have observers in the classroom and it would have been better to distribute observers so that teacher and child observers were not placed in the same room.

Teachers' Use of Labeled and
Unlabeled Praise

Consistent with the findings of previous descriptive studies (e.g., Atwater &

Morris, 1988; Martens, 1990), the teachers in this sample were found to use both labeled and unlabeled praise at a relatively low rate. A maximum of five labeled praise statements and four unlabeled praise statements were observed during the second week of observations, following the first intervention session. Subsequently, praise was found to decline slightly and then remain stable for the remainder of the intervention. For several teachers, there were brief increases in the use of praise following sessions in which this topic was discussed along with the implementation of child-directed activities (i.e., Sessions 2 and 3). However, these increases were brief and were not found to persist during later weeks.

Although the conclusions that can be drawn from the data are somewhat limited by poor inter-rater agreement, these findings suggest that strategies to increase praise were likely needed but that the intervention did not result in meaningful changes for participating teachers. The brief increases in overall teacher praise following the first session and the increases for teachers following the sessions in which praise was discussed in the context of child-directed activities may reflect a brief attempt on the part of teachers to be more positive and use the child-directed activities recommended. Alternatively, this may suggest a degree of reactivity to being observed. In other words, teachers were aware that they were being observed and, after learning about the focus of the intervention or a given strategy, they may have demonstrated a brief increase in desired behaviors. The finding that this increase did not persist suggests that they had difficulty incorporating the use of a higher rate of praise into their repertoire of teaching skills. This notion is supported by teacher comments on session ratings and during

postintervention focus groups, in which teachers said that it was difficult to implement child-directed activities.

One of the suggestions provided by teachers during the focus groups was to provide more feedback regarding teaching skills and the use of recommended strategies. This may have been especially helpful with regard to praise, in that it would have helped make teachers more aware of how seldom they provide this form of reinforcement. Indeed, in traditional PCIT parents receive a great deal of therapist feedback while practicing the "child's game" with their child in the clinic setting (Eyberg, 1988; Hembree-Kigin & McNeil, 1995). The use of a "bug-in-the-ear" device is recommended, in which the therapist observes through a one-way mirror and provides feedback via an earpiece worn by the parent. Although teachers received feedback during role-plays in the third session and it was hoped that teachers would gain additional feedback from one another during observations in-class, these activities were clearly not sufficient. It likely would have been helpful to provide a consultant in the classroom to model the use of child-directed activities *in vivo* and provide immediate feedback for teachers as they practiced. If possible, this is an element that should be incorporated in the intervention in the future.

Teachers' Use of Effective Commands

Again consistent with previous research, teacher commands were found to be the most frequent teaching behavior demonstrated (Atwater & Morris, 1988; Martens, 1990). Observational data indicate that the majority of these commands were

effectively given throughout the intervention, even before the session addressing this topic. Results indicated an overall decline in the use of inappropriate commands, although for most teachers this did not appear attributable to the intervention.

Teachers involved in the study commented that although the discussion of effective commands was a useful review, they already knew much of this information. These findings suggest that they are likely accurate in that assessment. Thus, it may not be as important to emphasize these skills with teachers as it is with many parents. Although it is often helpful to discuss effective commands at some length and provide in-session practice and applied homework assignments for parents (Barkley, 1997; Hembree-Kigin & McNeil, 1995), a brief review likely suffices for teachers. As with teacher praise, it would likely be helpful to provide feedback to teachers based on in-class observations to address any problems that they might not otherwise be aware of (e.g., phrasing commands as questions, failing to get children's attention prior to issuing a command).

Negative Teacher Comments

The interpretation of data regarding negative teacher comments is limited given the low inter-rater agreement observed in this category. Nonetheless, results suggest that negative teacher comments were quite rare throughout the intervention, occurring an average of less than once per observation period. The maximum number of negative comments overall was one, observed during the second week of classroom observations. Although there were some fluctuations for individual teachers, there was no clear trend

established and the rate of negative comments was extremely low for all teachers. These findings likely indicate that negative comments are not problematic for this group of teachers. However, this would also seem to be a behavior that would be especially subject to reactivity and therefore unlikely to occur just by virtue of having outside observers in the classroom. As a result of the floor effect for negative comments, it would have been nearly impossible to demonstrate a treatment-related reduction in this behavior. Further, although this may be an important behavior to record for some teachers, for most teachers this may not be an outcome variable that is sensitive enough to detect treatment gains.

Teachers' Self-Efficacy

The moderate scores (i.e., 34.6 out of a possible 60) revealed on the TES (Gibson & Dembo, 1984) indicate that improving teachers' sense of competence was a viable objective for this training program. Nonetheless, the results suggest that the intervention did not result in statistically significant changes in teachers' self-efficacy. This is not surprising since teaching behaviors changed relatively little over the course of the program. Given that teachers were not able to integrate some of the key components of the program, it would not be expected that they would report greater competence following the intervention. In addition, teachers may not have had sufficient time to use elements that were discussed later in the intervention (e.g., determining the function of child behavior, implementing interventions). Had they been able to effectively use these elements, it may have contributed to greater self-efficacy.

Summary

The results of quantitative treatment acceptability measures indicate that TCIT was moderately well-received by participating teachers. Qualitative measures indicate that teachers were unclear about the rationale for some elements (e.g., child-directed activities) and viewed these as being less applicable in the classroom. Teacher suggestions provide direction for future research and modifications that may help to improve both the acceptability and utility of the program. The findings regarding teacher behaviors provide an important context for interpreting the data regarding child behaviors. Much like parent training, this program depends on changes in teacher behavior to bring about changes in child behaviors. Unfortunately, this is an element that is often overlooked in both the parent training literature and in the literature on teacher-based classroom interventions. Given that changes in key teacher behaviors do not appear to have occurred in this study, it would not be expected that notable improvements in child behavior would be observed and any changes that do occur may not be directly attributable to the intervention. Thus, the primary objective for future research will be to find more effective ways to motivate teachers to engage in the training program and generalize the skills acquired in the classroom.

Changes in Child Behavior

Behavioral Observations

Although physical and verbal aggressions were found to be relatively infrequent, behavioral observations revealed an overall decrease in both categories during the

intervention. There was considerable variability among the four classrooms, and the decreases in aggression were most notable in classrooms in which high levels of these behaviors were exhibited prior to the intervention. Destructive behaviors were the least frequent form of disruptive behavior observed, occurring an average of less than once per observation interval. These behaviors remained stable and infrequent throughout the intervention, though there was an increase in one of the classrooms during the last week of observations. The inter-rater agreement for physical prosocial behaviors was lower than desired, thereby limiting the inferences that can be made from these data. Physical and verbal forms of prosocial behavior were both relatively infrequent, with a modest decline observed in some classrooms. Prior to the intervention, there were a number of physical prosocial behaviors observed in one classroom and the decline was most notable in that setting. Child compliance was generally high and appears to have remained stable over the course of the intervention.

These findings indicate that disruptive child behaviors (e.g., physical and verbal aggression) were reduced during the intervention. Not surprisingly, the magnitude of this reduction was greatest in classrooms where children exhibited a high rate of disruptive behaviors prior to the beginning of the program. Unfortunately, desirable child behaviors (e.g., physical and verbal prosocial behaviors) were also found to decline. There are several possible interpretations of these data. That all categories of child behavior were found to decline may indicate that children were initially reacting to having observers in the classroom and the baseline data were insufficient to account for this reactivity. In some classrooms children may have exhibited a high rate of either

verbal or physical prosocial behaviors to impress the observers. In other classrooms, this may have manifest in a higher number of disruptive behaviors initially. An alternative explanation might be fatigue on the part of observers. Assisting with the collection of observational data represented a large time commitment for these students and while they may have initially been eager to identify and code child behaviors, this may have faded over the course of the project and as the semester progressed.

Pre-/Postintervention Scores on
the DBDRS and SSQ

Teacher ratings on both the DBDRS and SSQ revealed statistically significant reductions in disruptive child behavior overall following the intervention. Although this indicates an overall reduction in disruptive behaviors, the magnitude of the changes observed was small (ES = 0.12 to 0.27) and the clinical meaningfulness of these changes is questionable. This finding is not surprising, given the minimal changes observed in teacher behavior. Although only seven teachers were observed, it seems likely that they were representative of the group as a whole and the behavior of other teachers may not have been impacted by the intervention. It should also be noted that data were collected for a normative sample of children rather than children specifically referred for a high level of disruptive behavior. As a result, immediate reductions in disruptive behavior are unlikely to be revealed on standardized measures since the majority of the children are already within the average range. Given that this intervention will ultimately be incorporated into a multi-modal early intervention/ prevention program, long-term follow-up is necessary to evaluate whether the program

helps to prevent the escalation of behavior problems over time (e.g., following school entry).

The statistically significant time-by-classroom interaction effect suggests that changes in disruptive child behaviors varied as a function of classroom membership. This interaction is also demonstrated in the effect sizes calculated separately by classroom, where it can be seen that there were notable improvements in some classrooms while in other classrooms child behavior worsened. This finding may reflect varying rates of treatment adherence in the various classrooms. Some teachers may have incorporated the intervention more fully and therefore noticed greater reductions in disruptive child behavior. An alternative explanation would be that these differences are related to how acceptable teachers found the program to be. Teachers who enjoyed the intervention and generally felt that it was valuable may have had a tendency to respond in a desirable manner (i.e., reporting fewer disruptive behaviors following the intervention).

Summary

Although the primary emphasis for this study was on the initial development and refinement of this teacher training program, it was hoped that the intervention would result in decreases in disruptive child behaviors and increases in desirable or prosocial behaviors. These findings indicate that changes in child behavior were relatively small as measured by both behavioral observations and teacher ratings. The changes that were observed were generally in the desired direction, with reductions in several forms

of disruptive behavior. Unfortunately, prosocial behaviors were also observed to decline. As noted above, these findings should be viewed in the context of the minimal changes observed in teacher behavior. Large improvements would not be expected since teachers do appear to have been able to fully implement the intervention. Variations in the degree to which teachers implemented the strategies recommended may help to account for the differences in treatment response among the classrooms.

These findings are somewhat limited in that the children observed and rated were drawn from a normative population and therefore did not necessarily exhibit a high rate of disruptive behaviors prior to the intervention. As such, the results provide information about the general climate in these classrooms but do not provide a very sensitive measure of treatment effectiveness. With the refinement of this program, outcome studies that focus on children who exhibit a high rate of disruptive behaviors or are considered "at-risk" for the development of behavior problems will be necessary and will have greater potential for demonstrating treatment effects.

Proposed Modifications to the Intervention

The findings of this study provide several insights into modifications that may improve both the acceptability and effectiveness of the intervention. Teachers reported feeling that the rationale for the project was not clearly provided and this appears to have adversely impacted the acceptability of the intervention. Indeed, a great deal of prior research supports the notion that a clear rationale increases treatment acceptability (Elliot, 1988). Thus, this should be emphasized in future studies using this program and

a strong rationale clarifying the purpose and objectives of the intervention in the first session hand-out may be helpful. In "selling" the treatment, it may be helpful to emphasize that teacher behaviors do not *cause* child behavior problems, but that they do contribute to the general classroom climate and can influence the child behaviors that are expressed in the classroom. The positive and relatively simple nature of the intervention may also be emphasized, as these variables have been found to be associated with teachers' treatment acceptability.

The timing of the intervention is another key issue that was raised by teachers involved in this study. Providing the intervention at the beginning rather than the end of the school year may help to develop a positive classroom atmosphere and would likely capitalize on a time when teachers are motivated to implement new ideas. Spreading the group sessions out over a longer period of time would also be beneficial. Scheduling sessions every-other week or once per month would allow teachers more time to use suggested interventions and may help to make the sessions more salient. During the intervening weeks, it would be helpful to provide a behavioral consultant to visit the classroom, model the use of strategies discussed, and provide feedback about teachers' use of those strategies.

The use of child-directed activities was a central element for this program and it is disappointing that this was not better received by this group of teachers, particularly since the rate of praise observed was low. This element in particular appears to have required a stronger rationale to increase acceptability. Teachers reported being somewhat confused regarding the purpose of these activities and this likely made them

reluctant to use nondirective skills. In part, the relatively low acceptability of this component may be attributable to the fact that teachers did not receive adequate modeling of these activities or sufficient feedback regarding their performance. In traditional PCIT, it is suggested that the therapist model the child's game for parents in session (Hembree-Kigin & McNeil, 1995). Thus, parents can see another adult interacting with their child in a nondirective manner and can see that children really do typically enjoy and respond positively to these interactions. Since training sessions were held outside of class time, this was not possible during this project but could be incorporated with in-class consultants. Hembree-Kigin and McNeil note that it is not uncommon for parents to initially feel quite uncomfortable interacting with their child in a nondirective manner. This discomfort may have been exacerbated for teachers in this study since they did not receive the high level of feedback and encouragement that is typically provided for parents when they first attempt to use these skills. Again, this would be addressed by having a consultant provide feedback for teachers. Consultants would initially model the use of nondirective skills and would then observe teachers, providing verbal reinforcement for target skills and prompting when necessary. Consistent with the PCIT model (Eyberg, 1988), it may be helpful to develop criteria for the number of praise statements and descriptions or reflections that teachers need to demonstrate mastery of these skills. Webster-Stratton (1998, 2000) has also demonstrated that video modeling can be quite effective with parents and teachers, and the development of videos demonstrating target skills would be an improvement for the TCIT program.

Given that teachers were found to generally use effective commands, this is likely not a vital component for the intervention and may be adequately addressed with a review of basic guidelines. Providing feedback during consultant observations would help to address any problems that arise and may be used to encourage teachers to provide praise for child compliance. The elements of the program that focused on determining the function of child behaviors were well received by teachers and should be included in future research using this program. Although not directly stated by the teachers, it does seem likely that more guidance regarding the application of these skills would be helpful. This may be accomplished by providing basic information during group sessions and then using a collaborative consultation model to apply the skills. In collaborative consultation, a behavioral specialist works along with teachers to identify problem behaviors and develop a plan for evaluating the possible function of those behaviors (Bergan & Kratochwill, 1990; Ervin et al., 1998). Subsequently, the teacher and consultant develop an appropriate intervention and monitor its effectiveness. This approach would be consistent with the larger objective of increasing teacher competencies and might also help to address the need for greater feedback and assistance with time-consuming elements of the intervention. Finally, it may be possible to involve parents in this collaborative process by having them provide information about their child's behavior in the home, implement parallel intervention strategies, and monitor behavioral changes demonstrated. In addition to improving generalization, this approach would provide teachers with a model for collaborating with parents to address child behavior problems.

One clear drawback for providing teachers with in-class consultation is the added expense that would be incurred. This would include training consultants, traveling to the various sites, and paying consultants for their time. These expenses may be reduced to some degree by incorporating professionals already employed in the preschool setting (e.g., educational coordinators, mental health specialists). Further, the intervention may be provided for an entire group of teachers initially and, in subsequent years, geared toward new teacher training. Ultimately, further outcome research would be necessary to determine whether the additional expense of in-class consultation is offset by improvements in the acceptability and effectiveness of the program.

Limitations and Directions for Future Research

There are several limitations that should be considered in evaluating the findings of this study and designing future research studies in this area. This program included only teachers from the Head Start program and the findings may not generalize to other populations (e.g., teachers in private preschools, teachers in preschools directly affiliated with a school district). Similarly, the findings may not generalize to other child populations. Although children in the Head Start program may be considered at-risk for the development of behavior problems by virtue of demographic characteristics (e.g., low SES), this was not a clinically referred sample. This is an obvious area for future research and it will ultimately be important to evaluate the effectiveness of this program among children who exhibit early-onset behavior problems as well as the

potential long-term, preventive benefits among children at-risk for the development of behavior problems.

It is acknowledged that this study represents a preliminary investigation of the TCIT model and further research is necessary. Specifically, this study utilized a pre-post design to evaluate changes in teacher and child behaviors. Such a design does not control for extraneous variables that might influence behavior (e.g., time of year, child maturation). In future research, this may be addressed by either using a control group design or using a multiple baseline approach to evaluate changes in teacher and child behavior. Additional efforts should also be made to evaluate treatment integrity and the degree to which teachers implement the intervention in their classroom.

The observational coding system used in this study was problematic. In some cases, the coding system used does not appear to have been sensitive enough to detect changes in behavior. This is particularly evident with regard to the coding of negative teacher comments, where very few comments were observed throughout the intervention and a floor effect was demonstrated. There were also teaching behaviors that were not coded that might have been informative. Anecdotally, some observers reported that teachers demonstrated an increase in their use of descriptive statements over the course of the intervention. This may indicate that they were able to incorporate this element of child-directed activities and increase their responsiveness. Although it was obviously hoped that their use of praise would increase as well, an increase in descriptive comments may indicate that teachers were more engaged with their students and this behavior should likely be coded in future studies. In the coding of child

behaviors, it may have been helpful to observe a sample of individual children found to be highly disruptive prior to the intervention rather than attempting to record the behavior of the classroom as a whole. Low inter-rater agreement rates were also problematic in this study. For the most part, this appears to reflect a limitation of frequency counts rather than difficulty with the observational coding system used. A review of observers' coding sheets suggests that disagreements generally reflected a behavior that was coded by one observer but not the other, rather than a behavior that was coded differently by the two observers. Finally, teacher comments provided during discussion groups and informally over the course of the intervention indicate that it was a burden and source of discomfort to have observers in the classroom. In future research, it may be advantageous to explore other options for recording teacher and child behavior (e.g., video recording).

The implementation of this program at the end of the year limits the findings in several respects. First, as noted earlier, this may have been a time when teachers were less interested in implementing new strategies in the classroom. Teachers may have been reluctant to abandon the behavior management strategies that they had either developed on their own or learned from other sources and used throughout much of the year. Further, the implementation of this program may have been taken to imply that there was something wrong with those strategies and therefore met with some resistance. Second, it was not possible to observe teacher behaviors over a long period of time since the school year came to an end soon after the intervention was completed. As a result, it was not possible to observe potential changes in teacher behaviors as they

implemented functional observation strategies and developed appropriate intervention strategies linked to the hypothesized functions of child behavior. Implementing the program at the end of the school year also limited the time available to detect changes in child behavior. Again, such changes may have been more notable after teachers began to use functional assessment and intervention skills. Finally, although it would be hoped that the program would result in short-term reductions in problematic behavior for highly disruptive children, long-term follow-up is necessary to evaluate the possible preventive benefits of this program. Follow-up assessments when children enter kindergarten and first grade will help to address this critical question.

Conclusions

Currently, there appears to be a great deal of interest in better understanding behavior problems among preschoolers, with recent research investigating the clinical significance of disruptive behaviors in this age group (Wakschlag & Keenan, 2001), the stability of behavior problems and variables which predict continuation (Lavigne et al., 1998; Speltz et al., 1999), and the appropriateness of current diagnostic approaches for this age group (DuPaul, McGoey, Eckert, & Vanbrakle, 2001). Although a number of parent training programs intended for this population are available, there continues to be a relative lack of programs designed specifically for use in the preschool classroom (Bryant et al., 1999). Further, it seems likely that as multi-modal early intervention programs continue to evolve there will be an increasing emphasis on the development of treatments that are integrated across settings (i.e., home, school). Indeed, this is

demonstrated in the most recent research of Webster-Stratton (2000) and it seems likely that other researchers will follow suit.

The objective for this study was to develop a program for use in the preschool classroom based on Eyberg's (1988) Parent-Child Interaction Therapy (PCIT) model and conduct an initial investigation of the efficacy and acceptability of this approach. This model was considered especially appealing because it is developmentally appropriate for the preschool population, is based on behavioral principles which can be integrated into ongoing classroom activities, and emphasizes the enhancement of parent/ teacher competencies.

Although there were no studies located which investigated the adaptation of PCIT in the classroom prior to this study, following the completion of this project, McIntosh, Rizza, and Bliss (2000) published a case study entitled "Implementing Empirically Supported Interventions: Teacher-Child Interaction Therapy." In that paper, they described the use of a classroom-based intervention much like this one, based on the PCIT model. Their intervention consisted of 12 sessions, with the first six sessions devoted to the implementation of child-directed activities and the final six sessions focusing on giving effective commands and using time-out appropriately. The study included one teacher and a child who displayed a high level of disruptive behavior prior to the intervention. The authors found that the participating teacher acquired skills for interacting with the target child in a nondirective manner. In particular, the number of descriptive statements that this teacher issued dramatically increased. The number of praise statements issued by this teacher increased as well, though praise statements were

somewhat variable during the later weeks of the program. Critical comments, questions, and the number of commands issued by the teacher were all found to decrease over the course of the intervention. Decreases were observed in the target child's disruptive behavior and increased compliance following the intervention. However, it should be noted that the authors recorded only teaching behaviors during child-directed activities, and it is therefore not clear whether these skills were generalized to the classroom.

The duration and intensity (i.e., one-on-one sessions over a period of 12 weeks) appear to be two critical differences between the intervention described by McIntosh et al. (2000) and that used in this study. Both of these would appear to support the modifications proposed to this treatment (i.e., use of in-class consultants and spreading the intervention over a longer period of time). Interestingly, McIntosh et al. described a number of problems in the implementation of the program that were similar to those encountered in this study. The participating teacher reported frustration with being observed by the therapist and shared that it was difficult to learn that "she was doing something wrong" (p. 457). Although this was not directly articulated by teachers involved in this study, it seems likely that they shared this sentiment and this may have resulted in some resistance. Further, McIntosh et al. noted that it was difficult to find time when the teacher could practice the use of child-directed skills and this often had to be scheduled during the teacher's lunch time or when a research assistant was available to supervise other students.

It was hoped that this would be less concerning for teachers in this study, since it

was suggested that they could practice the use of nondirective skills during ongoing classroom activities (e.g., during art activities, at the sand/water table). Nonetheless, the comments of several teachers suggest that it was difficult to find the time to incorporate this intervention along with other required activities. Thus, these concerns are likely to arise in future implementations of this program and they should be addressed proactively. For example, it may be helpful to emphasize that teachers' current behavior management strategies are not "wrong" but that specialized skills are necessary for dealing with highly disruptive children. It may also be helpful to clarify that learning nondirective skills will require extra time initially, but that once these skills are mastered they will become incorporated into ongoing classroom activities and teacher-child interactions.

The results of this study are clearly disappointing; however, the results provide a number of directions for future research that will help to determine whether this is a viable classroom-based intervention that can be integrated along with traditional PCIT in a multi-modal program. This study also highlights the importance of assessing behavioral change among teachers when evaluating classroom-based interventions. Different conclusions likely would have been drawn in this study if it was not apparent that the intervention did not result in sustained changes in key teacher behaviors. Finally, for both clinicians and researchers this study demonstrates the importance of attending to issues of treatment acceptability and evaluating acceptability via both quantitative and qualitative measures.

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APPENDICES

Appendix A

Dependent Measures

Teacher Demographic Information

Age:_____

Ethnicity (Circle One):
Hispanic   Black/African   White/Caucasian   Asian/Pacific   Native American   Other:_____
            American   Islander

Highest Level of Education Obtained (Circle One):
completed high   completed some college/   completed associate's   completed college   completed graduate/
school   vocational training   degree

            post-grad. ed.

Additional Training (Please Describe):_____

How long have you been teaching preschool children?:_____

Do you have experience teaching other grade levels? (Circle One):
yes   no
If yes, please describe_____

Session Rating Scale

Session #_____

Today's Date_____

For each item, indicate how much you agree with the statement
(1 = not at all, 5 = very much, or 'NA' if the statement is not applicable for this week)

(1)   The leader encouraged group participation

       1-----2-----3-----4-----5
(2)   I actively participated in today's session

       1-----2-----3-----4-----5
(3)   I paid careful attention to information presented today
       1-----2-----3-----4-----5
(4)   The information presented today was helpful
           1-----2-----3-----4-----5

(5)   Last week's in-class practice was worthwhile
           1----2----3----4----5----NA
(6)   I tried last week's assignment in-class

       1----2----3----4----5----NA
(7)   Student's responded well to last week's assignment
           1----2----3----4----5----NA
(8)   Last week's assignment helped with my teaching duties
       1----2----3----4----5----NA

What did you learn in today's session that was useful?

What could have been improved in today's session?

Do you think you can implement what was discussed today in your classroom? Why/Why not?

What else would have been helpful to cover in today's session?

Teacher Efficacy Scale
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Teacher's Name _____
      Date _____

Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement (*1 = strongly disagree - 6 = strongly agree*)

1.   When a student does better than usual, many times
        1-----2-----3-----4-----5-----6
     it is because I exerted a little extra effort.

2.   The hours in my class have little influence on students
     1-----2-----3-----4-----5-----6
     compared to the influence of their home environment.

3.   The amount that a student can learn is primarily related
     1-----2-----3-----4-----5-----6
     to family background.

4.   If students aren't disciplined at home, they aren't likely
     1-----2-----3-----4-----5-----6
     to accept my discipline.

5.   When I really try, I can get through to most difficult
     1-----2-----3-----4-----5-----6
     students.

6.   A teacher is very limited in what he/she can achieve
     1-----2-----3-----4-----5-----6
     because a student's home environment is a large
     influence on his/her achievement.

7.   If parents would do more with their children, I could
     1-----2-----3-----4-----5-----6
     do more.

8.   If a student in my class becomes disruptive and noisy, I
     1-----2-----3-----4-----5-----6
     feel assured that I know some techniques to redirect him
     quickly.

9.   The influences of a student's home experiences can be
     1-----2-----3-----4-----5-----6
     overcome by good teaching.

10.   Even a teacher with good teaching abilities may not
       1-----2-----3-----4-----5-----6
     reach many students.

Therapy Attitude Inventory

Teacher's Name _____

Date _____

Directions: Please circle the response for each question which best expresses how you honestly feel.

1. Regarding techniques of disciplining, I feel I have learned
    1. nothing
    2. very little   3. a few new   4. several   5. very many

         techniques   useful   useful
                             techniques   techniques

2. Regarding techniques my students new skills, I feel I have learned
    1. nothing
    2. very little
    3. a few new
    4. several
    5. very many

         techniques   useful   useful
                            techniques   techniques

3. Regarding the relationship between myself and my students, I feel we get along
    1. much
    2. somewhat
    3. the same
    4. somewhat
    5. very much
       worse
       worse
       as before
       better
       better
       than
       than   than   than
       before
       before

       before
       before

4. Regarding my confidence in my ability to discipline my students, I feel
    1. much less
    2. somewhat
    3. the same
    4. somewhat
    5. much
       confident
       less

            more

more

confident

confident
confident

5. The major behavior problems that my students presented in the classroom before the program
   started are at this time
   1. considerably
   2. somewhat
   3. the same
   4. somewhat
   5. greatly
   worse
   worse

   improved
   improved

6. I feel that my students' compliance to my commands or requests are at this time
   1. considerably
   2. somewhat
   3. the same
   4. somewhat
   5. greatly
   worse
   worse

   improved
   improved

7. Regarding the progress my students have made in their general behavior, I am
   1. very
      2. somewhat
   3. neutral
   4. somewhat
   5. very
   dissatisfied
   dissatisfied

   satisfied
   satisfied

8. To what degree has the treatment program increased your confidence as a teacher in general
   1. much less
   2. somewhat
   3. the same
   4. somewhat
   5. much
   confident
   less

more
more

confident

confident
confident

9.   I feel the type of program that was used to help me improve the behavior of my students was
1. very poor
2. poor
   3. adequate
4. good
   5. very good

10. My general feeling about the program I participated in, is
1. I disliked
2. I disliked
3. I feel
4. I liked it
5. I liked it
   it very
   it somewhat   neutral
          somewhat
   very much
   much

Discussion Group Protocol
Introduction

(1)   As Brent probably mentioned, we're doing these groups to get your feedback about the intervention that you've been taking part in over the past several weeks. As you know, the purpose of the intervention was to help address disruptive behaviors in the classroom using an approach similar to that used with parents. The intervention began w/ a discussion of basic behavioral principles (e.g., positive and negative reinforcement). Then you discussed incorporating child-directed activities and using positive attention to increase good child behaviors. Another session focused on giving effective commands. And then the last couple sessions emphasized observing children to determine the "function" of their behavior and then providing effective interventions. So, I'm going to be asking a few questions to get your feedback about this program. Your opinions are really important in refining the intervention, so all comments are really valuable and obviously there aren't any "right" or "wrong" answers. All of the information you give us will remain strictly confidential. We are taping the discussion, so please speak loudly and I'll ask that only one person talks at a time. Any questions before we get going? (Approx. 1-2 minutes)

(2)   In general, did you feel like the intervention addressed the child behavior problems you encounter in your classroom?
(Approx. 2-minutes)

(3)   What did you think about the format of this program (i.e., group sessions once a week)?
(Approx. 2-minutes)

(4)   Which elements of the program were most useful for you? Why?
(Approx. 10-minutes, probe for information when necessary)

  A. How useful were the sessions dealing with the implementation of child-directed activities & attending to positive child behaviors?
  B. How useful was the session dealing with giving effective commands?
  C. How useful were the sessions dealing with observation & determining the function of children's disruptive behaviors & interventions discussed?

(5)   Have you been able to implement the ideas discussed in the intervention in your classroom? If not, why?
(Approx. 10-minutes, probe for information when necessary)
  A. To what extent have you implemented the child-directed activities & attention to positive behaviors?
  B. To what extent have you implemented the ideas presented in the giving effective commands session?
  C. To what extent have you implemented the observations to determine the function of children's disruptive behaviors & interventions discussed?

(6)   What do you think could be done to improve this program?
(Approx. 5-minutes)
  A. Were there any sessions that were not particularly useful for you?
  B. Are there additional things that would have been helpful for you?

(7)   Did Brent seem knowledgeable and enthusiastic in his presentation of this program? (Approx. 3 minutes)

Summary / Wrap-up

o.k., so to summarize the feedback that you have given so far it sounds like . . . (spend 1-2 minutes summarizing main points regarding elements that were useful, implementation, and anything that could have been done to improve). Is there anything that we have missed? Thank you very much for your time. If you think of additional comments, you can jot them down and either include them w/ the assessment forms you are completing or put them in Theresa G.'s box in the office.

Appendix B

Operational Definitions for Behavioral Observations

TEACHER OBSERVATIONS**

GENERAL GUIDELINES

* Each teacher will be observed in 4-minute intervals
* Observers will move about classroom to observe target teachers; Remain as unobtrusive as possible; Try to avoid interacting w/ children (i.e., do not initiate interactions, provide minimal response to child overtures, etc.); Minimize interactions w/ teachers
* Record a mark for each occurrence of a behavior
* Combination behaviors (e.g., group & individual commands) are recorded as an occurrence in both categories
* If unsure about coding a behavior, make notes to review with other observers/researcher
* OBSERVE CLASSROOM RULES/GUIDELINES FOR VISITORS & TEACHER REQUESTS; REMEMBER TO HONOR HEAD START'S POLICY REGARDING CONFIDENTIALITY

COMMANDS:

An order, demand, direction, or request that either indicates or implies that a specific child or a group of children are to provide a behavioral response

Group: Command given to a group of 2/more children or the entire class of children
Individual: Command given to one specific child

Appropriate:
A clearly stated order, demand, or direction in <u>declarative form</u>.

(1) teacher must make effort to attain attention of child/class
e.g. turning off lights as class prompt, saying "class . . .", saying a child's name, placing a hand on a child's shoulder, auditory prompt (clap hands, whistle)

(2) must be stated positively

e.g. "Timmy you need to get your coat," "class it is time to clean up"

(3) must be specific enough to indicate desired response

e.g. "class, put the blocks in the bin," "Jenny you need to sit in the circle"

(4) must not be phrased as a question
e.g. "Timmy, please sit on your bottom in the chair" rather than "Timmy, could you please sit on your bottom?"

(5) involves 2 steps or fewer

e.g. "Class, you need to get your coats and line up at the door"

(6) neutral tone of voice

e.g. business-like, appropriate volume for situation (i.e., inside vs. outside)

Inappropriate: An order, demand, or direction that <u>implies</u> a behavioral response

(1)   teacher fails to make an effort to attain attention of child/class

e.g.   "It's clean-up time", "let's line up at the door", "you need to get your coat"

(2)   stated negatively, indicates what <u>not to do</u> rather than what <u>to do</u>

e.g.   "Stop that", "don't run in the halls"

(3)   non-specific or vague, does not clearly indicate what is expected

e.g.   "It's time to clean-up," "it's circle time," "Jimmy you need to behave"

(4)   phrased as a question

e.g.,   "Timmy, could you please sit on your bottom?", "Class can you please be quiet?", "Pick up the toys now, o.k.?"

(5)   involves more than 2 steps

e.g.,   "Class, you need to clean up the toys, get your coats, and line up at the door"

(6)   inappropriate tone of voice

e.g.,   yelling, screaming

PRAISE: Verbalizations that express a favorable judgement of an activity, product, or attribute of a specific child, group of children, or class as a whole
*
code # of praise words/verbs/statements, does not require 5-second delay

Group:
Praise directed at a group of children or the entire class of children
Individual: Praise directed at a specific child

Labeled: A verbalization that expresses a favorable judgement on a specific activity, product, or attribute of a child/group of children

e.g.,   "Class, I like the way you are all playing so quietly," "Jimmy that is a great painting," "Emily I like the way that you are sharing your blocks with Timmy"

Unlabeled: A verbalization that expresses a favorable judgement on a general activity, product, or attribute of a child/group of children

e.g.,   "Great job class," "Nice going," "Good work Suzy"

NEGATIVE:

A verbalization that finds fault w/ the activities, products, or attributes of a child, group of children, or class as a whole

e.g., "You're being naughty," "that's a sloppy painting,"

Group: Negative comment directed at a group of children or the entire class of children
Individual: Negative comment directed at a specific child

** Adapted from the Dyadic Parent-Child Interaction Coding System (DPICS; Robinson & Eyberg, 1981)

CHILD OBSERVATIONS

GENERAL GUIDELINES

* Twelve children in each classroom will be observed for 5-minute intervals
* Observers will move about classroom to observe target children; Remain as

    unobtrusive as possible; Try to avoid interacting w/ children (i.e., do not initiate interactions, provide minimal response to child overtures, etc.)
* Record the appropriate letter for each occurrence of a behavior; There must be at least a 5-second delay between occurrences
* Combination behaviors (e.g., verbal aggression & physical aggression) are recorded as an occurrence in both categories
* If unsure about coding a behavior, make notes to review with other observers/researcher
* OBSERVE CLASSROOM RULES/GUIDELINES FOR VISITORS &

    TEACHER REQUESTS; REMEMBER TO HONOR HEAD START'S POLICY REGARDING CONFIDENTIALITY

AGGRESSION/INAPPROPRIATE BEHAVIOR

Physical:

2/more children (or child & teacher) interacting; visible force; intentional

e.g., hitting, kicking, biting, pushing, pinching, pulling hair, grabbing, grabbing toy away, spitting, poking, finger flicking, slamming finger w/ toy, throwing things at another child or at a teacher.

Destructive: intentionally destroying someone else's property, play activities, or school property

e.g., knocking down another child's blocks, destroying a peer's puzzle, tearing up another child's artwork, breaking classroom toys

Verbal/Nonverbal: 2/more children (or child & teacher) interacting; intentional; directed toward another person

(1) loud: yelling when in close proximity to target (i.e., within 5 feet)
    e.g., yelling commands, screaming
(2) insult/name calling: inappropriately expressing negative feelings about another person, another person's work, etc.
    e.g., "I hate you," "You're ugly/your picture's ugly," "Buttface," etc.
(3) whining/pestering: continuing to ask teacher permission after clearly being told 'no'; excessive complaining
    e.g., "can I play w/ the water table (repeat)," "I don't want to go outside," "do we have to sit at the circle?"

Noncompliance: failing to attempt to comply w/ teacher command (either individual or group) in an appropriate manner w/in 10 seconds of command

e.g., not participating in 'clean up,' actively/passively refusing teacher command (saying 'no,' ignoring, dawdling)

PROSOCIAL/APPROPRIATE BEHAVIOR

Physical: 2/more children (or child & teacher) interacting; intentional; no force
e.g. hugs, pats on the back, holding hands (unless clearly unwanted as
evidenced by verbal or physical behavior of recipient); offering a toy or
valued object; passing food while at the table; taking turns/offering turn

Verbal/Nonverbal: 2/more children (or child & teacher) interacting; intentional; directed toward
another person

(1)   compliments: expressing positive feelings about another person or another person's work

       e.g., "I like you," "that's a nice picture"

(2)   initiate play/interaction: asking permission to play w/ others; inviting others to play

       e.g., "Can I play w/ you?", "Do you want to play trucks w/ us?"

(3)   gestures: using non-verbal gestures in an appropriate manner
       e.g., waving hello/goodbye

(4)   manners: using 'please', 'thank you,' etc.

       e.g., "Could I please have a blue block?", "Thank you for the sticker"

Compliance: Obeying, beginning to obey, or attempting to obey teacher directive in an
               appropriate manner w/in 10 seconds of command (either group or individual)

       e.g., cleaning up toys, passing food as directed, getting coat

Appendix C

Handouts

Understanding the "Function" of Children's Behavior
Terminology & Guidelines

Nearly all of children's behaviors have some "function." In other words, there is a reason that children do what they do, although it may be difficult for us to understand at times! Additionally, two kids may demonstrate the same behavior for very different reasons. Understanding the function of a given child's behavior can help to reduce problem behaviors and increase desirable alternative behaviors. One step toward understanding what some of those functions may be is to review basic principles of behavior shown to apply across all people. While some of these principles may seem like common sense, others may be less intuitive. Also, many of these terms have become very common but may be used incorrectly.

A-B-C's

A - This stands for **antecedent** events, or the things that happen before a behavior occurs. Antecedents serve as cues that prompt us to perform a given behavior. For example, when the telephone rings we automatically pick it up. The ringing of the telephone would be considered an antecedent to our picking up the phone behavior.

B - This stands for the observable **behavior** that happens. So, in the example above, picking up the phone may be the behavior that we could observe.

C - This stands for the **consequences** that happen after the behavior. The consequences have an impact on the likelihood that the behavior will occur again in the future. In other words, if the consequences are positive or good, it is likely that the behavior will happen again. If the consequences are negative, it is less likely that it will happen again in the future. This one is kind of intuitive -- *but, it's important to remember that a consequence that one child finds positive may not seem positive to another child.* Using the phone example, if I answer the phone and it is a person I enjoy talking to, it is likely that I will pick it up again the next time it rings. If I pick up the phone and it is someone I don't want to talk to (i.e., telemarketers!), it is less likely that I will answer again in the future.

Reinforcement

Reinforcement is one potential consequence of a behavior. Strictly speaking, a consequence is only a reinforcer if it increases the chance that a behavior will happen again in the future. So, while we typically think of things like candy, stickers, praise, etc. as "reinforcers" these might not increase desirable behaviors in a given child. *We have to watch a child's behavior after they experience the consequence to decide whether it is reinforcing for them.*

** For reinforcement (or any consequence) to be effective, it must occur immediately after the behavior.

One type of reinforcement is **Positive Reinforcement**. This occurs when a child *obtains something that he or she finds desirable* that increases the chance that a given behavior will happen again. Virtually anything may be a reinforcer (e.g., praise, attention, stickers, money), even things that we might think are aversive. For example, children are often reinforced by teacher attention even when it seems negative (e.g., reprimanding a child in class). *Again, what is reinforcing to one child might be aversive to another.*

Another type of reinforcement is **Negative Reinforcement**. This occurs when the likelihood of a behavior is increased because it *allows a child to escape something unpleasant.* As an example, every morning when I hit the 'snooze' button on my alarm and eliminate the unpleasant noise, I am negatively reinforced and it increases the likelihood that the next morning I will do the same thing.

Extinction

Extinction, or "selective ignoring," is one way to decrease behaviors. This happens when teachers stop providing children with attention for a given behavior. For example, a child throwing a tantrum is likely doing so to obtain a reaction from the teacher (a tantrum isn't much fun without an audience!). If the teacher selectively ignores the child's tantrum rather than providing attention, the behavior will eventually diminish. Obviously, selective ignoring is not always possible (e.g., when a child's behavior may be hurtful to themselves or another student). Further, ignoring is not generally effective if the function of a child's behavior is something other than obtaining a reaction/attention from the teacher. As an example, ignoring a child while they eat a cookie will likely not make them stop eating the cookie. They aren't engaging in the behavior to obtain attention, they are eating the cookie because it tastes good not because they get a reaction from the teacher.

**WARNING: An "extinction burst" often occurs when we begin to ignore a behavior for which children were previously reinforced. When this happens, the behavior that we are trying to eliminate often increases for a time before it starts to taper off. So, the first few times the teacher tries to ignore the tantrum it is likely that the child will escalate the behavior to new levels. It is really important to be certain that when extinction is used, you are certain that you can stick with it through this burst!

Differential Reinforcement

While extinction is a very powerful tool for reducing children's unwanted behaviors, it is important that we also help them to develop alternative behaviors. Differential reinforcement refers to reinforcing children's desirable behaviors while ignoring inappropriate behaviors. As an example, if a child is throwing their toys to get your attention you may ignore that behavior and quickly provide reinforcement when they display any other appropriate behavior.

The Influence of Teachers on Child Behaviors

Obviously, teachers don't *create* children's behavior problems. But, teachers do create the environment in which children's behaviors happen. Teachers can help children develop a more appropriate set of behaviors by (1) identifying situations (i.e., antecedents) which lead to problem behaviors and making changes wherever possible; (2) allowing children to achieve the same functions through appropriate behaviors; (3) changing the consequences of children's behaviors such that undesirable behaviors don't work any more; and (4) paying attention to and reinforcing children's good behaviors.

Paying Attention to Students' Good Play Behavior

The purpose for this part of the program is to learn to pay attention to & increase your students' good play behavior. It is virtually impossible to reduce children's inappropriate & disruptive behaviors if we don't first begin to notice and reinforce their good behaviors. To accomplish this, we will first focus on practicing & "overlearning" the skills of paying attention. These skills will be practiced in the context of child directed activities as outlined below:

(1)   Select a 5 to 10 minute block of time to practice attending to children's good play behaviors. It is important that the children you are working with are involved in activities that are primarily child-directed (e.g., during center time, while at the water/sand table, etc.).

(2)   Working with a small group of children (i.e., 3-4) during each play session is best, so that you can provide adequate attention to all of the students in the group. Working with children in groups also provides the opportunity to notice & reinforce cooperation between children & the use of appropriate social skills.

(3)   Observe what the students are doing & join in their activity when appropriate. After watching the students' activities for a time, begin to describe out loud what the children are doing. This communicates to children that you are interested in their activities. It is done something like a sportscaster announcing a baseball or football game on the radio -- it should be enthusiastic & action oriented. Additionally, by describing what children are doing, teachers model speech, hold children's attention, & indirectly teach concepts (e.g., "now you're picking up a *blue* block").

(4)   Reflect children's comments to demonstrate that you're interested & listening to what they have to say. This also helps to increase verbal communication & improve children's language skills.

(5)   Frequently provide your students with positive statements of praise, approval, & positive feedback about what you like about their play. These statements should be specific, accurate, honest, & given with enthusiasm. Statements like: "you guys are doing a great job of cooperating today," "I really like the way you're using lots of colors in your picture" are all appropriate comments.

(6)   During this time, try not to ask the students you are working with any questions & avoid giving directions. This is a hard one, but really important! Asking questions or giving directions tends to disrupt and take over children's play -- and we want this time to be as child-directed as possible.

(7)   If a student is misbehaving (& it is a behavior that can be ignored), turn your attention to another student or away from the activity for a few moments. As soon as the child demonstrates an appropriate behavior, be sure to return to them and provide praise!

(8)   We will be "overlearning" these skills during these 5 to 10 minute sessions. Obviously, asking questions & giving students directions are important things for teachers to do & it would be difficult to provide praise, reflective statements, & descriptive statements at the rate we are looking for during these sessions. The idea is that once these skills are developed & practiced they will spill over into other activities during the day and will make other behavioral interventions more effective.

(9)   Teachers and teacher assistants should both find times during the day for these practice sessions. In addition, to help keep track of progress and work on these skills teachers & teacher assistants should observe one another during these activities twice a week for about five minutes. While observing, record the number of reflective comments, descriptive statements, labeled praise statements, & unlabeled praise statements on the recording sheets provided. The purpose of this is to give one another feedback -- not to be critical of what your teaching partner is doing! Praise works with adults as well, so be sure to notice what your partner is doing well and provide reinforcement!!

Paying Attention to Students' Good Play Behavior: Do's & Don'ts

Do's (P-R-I-D-E)	Don'ts (Couldn't think of an acronym!)
Praise: Notice what children are doing well & provide lots of labeled praise. It feels good to have people notice what we're doing well & this will serve to increase children's positive behaviors! e.g.: "You two are doing a great job of cooperating today"	**Questions:** Avoid questions during these child directed activities. Obviously, questions are an important part of what teachers do, are important for learning, & are entirely appropriate in the classroom. But, they tend to lead the conversation rather than allowing children to direct these interactions. e.g.: "What color block are you going to use next?
Reflect: This allows children to lead the conversation & lets them know that you are listening and interested in what they have to say. Reflection also increases verbal communication & can improve children's language skills e.g.: *Child*: "Look teacher, I made a star" *Teacher*: "Yes, I can see that you made a star with your glitter"	**Commands:** Teacher commands tend to lead these interaction & take the focus away from noticing what children are doing well. Again, commands & teacher directions are an important part of learning. But, they tend to change the interaction from child to teacher focused. e.g.: "Come over here"
Imitate: This allows children to lead & shows them that you are involved. This also helps children to develop cooperative play skills. e.g.: *Child*: "I'm going to build a tower" *Teacher*: "That's a great idea, I think I'm going to build a tower as well"	**Criticize:** This doesn't tend to decrease bad behaviors, & may in fact increase the behaviors we don't want to see (i.e., it may actually be reinforcing!). e.g.: "You're being naughty today"
Describe: This demonstrates for children that you are paying attention & interested in what they're doing. Description can also be used to teach concepts and model speech for children. e.g.: "It looks like Manuel is using the red paint for his people" e.g.: "Now you're pouring all the sand through the funnel"	**Attend to Inappropriate Behavior:** Whenever possible, it is best to ignore inappropriate behavior (unless dangerous or destructive). In other words, while the child is behaving inappropriately don't comment or provide attention for the behavior. For this to work, it is important to ignore the behavior every time it occurs. Remember, the behavior may increase for a time before it goes down.
Enthusiastic: It's important to be enthusiastic & genuine in your comments. Children will notice if it seems like your praise is false or you aren't really interested.	

Giving Effective Commands/Directions

The purpose of this part of the program is to learn to give commands or directions that make it more likely that students will be compliant. In many cases, simply changing the way that we give commands can improve children's compliance significantly. When you are about to give a command, be sure that you do the following.

(1) *Make sure the students are paying attention to you.* This one seems pretty obvious -- clearly if children aren't listening to teacher commands they aren't going to follow through. Saying a child's name or giving the class a verbal prompt can be effective, assuming that the setting is relatively quiet. Nonverbal cues (e.g., turning off the lights, placing a hand on an individual child's shoulder, etc.) are often much more effective than struggling to be heard over the top of children's play activities.

(2) *Make sure you mean it.* That is, never give a command that you don't intend to see followed up to its completion. When you give a command, plan on backing it up with appropriate consequences, either positive or negative, to show that you mean what you say.

(3) *Avoid presenting commands as questions or favors.* This tends to be a tough one! As adults, we know that if someone says "Could you hand me the dishes?" it probably isn't a question -- they expect us to hand them the dishes! This tends to be less clear for young children and it often seems like they have a choice to either comply or not comply. Commands stated simply & directly tend to be much more effective.

(4) *Be polite & use a neutral tone of voice.* It's important to model appropriate social skills for children, even in the context of giving commands. Additionally, sometimes children inadvertently learn that they don't need to comply until the teacher/mother/adult begins to use an angry tone of voice. Keeping a neutral, "businesslike" tone of voice while still expecting compliance models the use of good social skills and can help to avoid negative, escalating interactions.

(5) *Use positively stated commands that tell children what they are supposed to do, rather than what they are not supposed to do.* This is another one that's sometimes hard. Commands are much more effective if they convey what behavior is expected, rather than focusing on the behavior that is not appropriate. For example, commands like: "Jimmy, you need to use your walking feet" are more likely to be effective than "Jimmy, don't run in the hall!"

(6) *Keep it simple & be specific!* It's really important that commands tell students exactly what is expected. Vague commands like "You children need to shape up and behave!" don't really tell kids what they are expected to do. Simple commands that let children know what behaviors are expected are much more effective (e.g., "You need to keep your hands to yourself.").

(7) *Avoid giving too many commands at once.* Most young children are able to follow only one or two instructions at a time. It is generally best to give students one specific instruction at a time. If a task is more complicated, be sure to break it down into smaller steps and give only one step at a time.

(8) *Use explanations sparingly.* Sometimes children will ask for lengthy explanations (i.e., "Why?") more as a stalling tactic than because they want to know the answer. Additionally, sometimes in the midst of our explanations students get confused and forget what the original command was! If you feel like an explanation is necessary, provide a brief reason before the command (e.g., "It's time to go outside. Please put the blocks back in the bin.") or after the child has complied (e.g., "Thank you for putting the blocks away. Now we're ready to go outside.").

(9)   *Be sure to praise children for their compliance!* Using labeled praise when students follow through with a command (e.g., "Sarah, Thank you for lining up so quietly!") identifies the desired behavior and increases the likelihood that they will comply again in the future!

Determining the "function" of Children's Behavior: Observing Child Behaviors

As discussed earlier in this program, children's behaviors almost always serve some "function." Without understanding these functions, it is extremely difficult to develop an intervention that will work. Sometimes these functions are quite obvious. For example, when one child bites another and then takes away a valued toy, we could say with some confidence that the function of the biting was to get the toy. Other times these functions are far less clear. One way to determine what these functions may be is to begin with an observation of the child's behavior. Though it is sometimes tempting to jump in with an intervention to stop an unwanted behavior A.S.A.P., it is generally more effective to begin with a detailed observation. As a rule of thumb, observing a child's behavior for 2 to 5 days is generally sufficient to identify these patterns and make some educated guesses about the functions his/her behavior might serve. When observing, it is important to attend to the following variables:

Predictors - As discussed before, antecedents or predictors are the things that serve as cues for us to perform a given behavior. In the preschool classroom, these may be things like a transition from one activity to the next, leaving a preferred activity (e.g., outside time), a teacher command, or an activity that the child finds unpleasant (e.g., brushing teeth, washing hands, rug time).

Behaviors - Sometimes it is very clear what the specific problem behaviors are that we want to target for observation (e.g., hitting another child, running away). Other times, it may be important to spend some time recording what the child's specific problem behaviors are. For example, while we all know generally what a tantrum is, tantrums almost always include a complex combination of behaviors. Thus, it would likely be important to understand what those specific behaviors are as we begin to think about intervening. In addition to observing the behaviors that we *don't* want the child to engage in, it can be equally important to observe the behaviors that we *do* want to see and to identify the predictors of those behaviors. For example, when we're trying to get a child to "use their words" to ask for a valued toy, we may want to begin by observing the situations in which they do ask appropriately.

Possible Functions - Again, sometimes these are pretty clear and other times we have to make some educated guesses about what the function of a child's behavior might be. Although it is obviously oversimplified, people generally engage in behaviors for one of two reasons:

(1) To get something that they find enjoyable or reinforcing. For example, the function of a child's behavior may be to get the teacher's attention, to get a valued toy, or to get attention from another child.

(2) To avoid or escape something that is unpleasant or punishing. When a teacher gives a command, a child may throw a tantrum to avoid performing a task they don't enjoy. During unpleasant or difficult activities, children may engage in behaviors that help them to escape the situation.

There are lots of different (and equally good) formats for recording children's behavior. An "A-B-C" form (i.e., antecedent, behavior, consequence) is an easy way to identify problematic behaviors in a given setting and begin to determine their function. If target behaviors are already known and you have some guesses about what the function of a behavior might be, a more specific recording system may be easier so that the number of behaviors to be observed are limited. Examples of both of these forms are included on the back of this sheet.

A-B-C Recording Sheet

Antecedents/Predictors	Behaviors	Consequences
* Teacher calls students to come in for recess	* Emily runs to far end of playground	* Class waits for Emily * Teacher goes and talks to Emily
* Teacher gives command to "clean-up"	* Davis throws sand from sand-table at Sarah	* Sarah cries * Davis goes to time-out while rest of class cleans up

Functional Observation Form*

Time/ Activity	Antecedents/ Predictors	Target Behavior: Biting		Actual Consequence	

*Adapted from: O'Neil, Horner, Albin, & Sprague (1997). <u>Functional assessment and program development for problem behavior: A practical handbook</u>, 2nd edition. New York: Brooks/Cole

A-B-C Recording Sheet

Antecedents/Predictors	Behaviors	Consequences

Functional Observation Form*

Time / Activity	Antecedents / Predictors	Target Behavior: Biting other children	Possible Functions		Actual Consequence
			Get / Obtain	Avoid / Escape	

*Adapted from: O'Neil, Horner, Albin, & Sprague (1997). Functional assessment and program development for problem behavior: A practical handbook, 2nd edition. New York: Brooks/Cole

Classroom Interventions for Disruptive Child Behavior

Once we have some ideas about what the function(s) of a child's behavior might be, we can develop an intervention strategy. The general idea is to help children develop appropriate behaviors to achieve those same functions (e.g., using their words to obtain teacher attention). This can be achieved by making changes in either the antecedents/predictors or the consequences of a behavior. For all interventions, it is important to remember to start small! Begin with a specific target behavior that you want to increase or decrease and plan to build on those small successes.

Interventions to Change Antecedents

While it is tempting to focus primarily on changing the consequences of a behavior (i.e., what happens after the behavior occurs), changes in the events that predict or lead-up to a behavior are often as effective or more effective and this should be considered a "first line of defense." Often, relatively minor interventions that address the antecedents of a child's disruptive behavior are sufficient to improve child behavior (e.g., changes in classroom layout, changes in the way that commands are given, verbal or nonverbal cues that a transition is approaching, etc.). For this approach to be effective, it is important to know what antecedents lead to a desired behavior and what antecedents lead to problem behaviors.

Interventions to Change Consequences

There are lots of different interventions designed to change behaviors by changing consequences. In general, these approaches all operate on the principle that if the consequences of a behavior are reinforcing *for a given child*, the behavior is likely to occur again in the future. If the consequences are unpleasant *for a given child*, the behavior is not likely to occur again. For all of these interventions, it is important to (1) start small and be sure that the child will experience success at the beginning of the intervention and (2) ensure that behaviors are directly linked to their consequences (i.e., immediate consequences, associated with behavior). Although it is always necessary to tailor an intervention to fit for different classrooms, different individual children, and different groups of children, the following are some programs that have been found to work in multiple different settings:
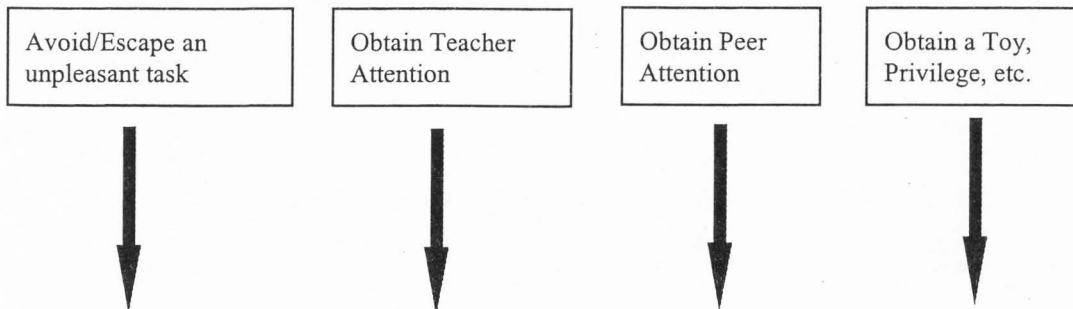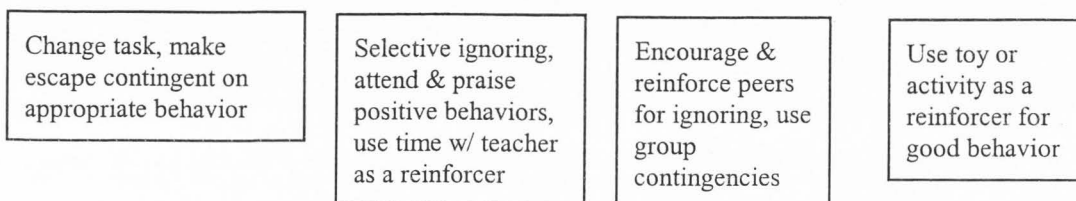
(6) **Privileges to Manage Behavior**: Receiving extra privileges (e.g., 5-minutes of extra recess time, getting to be the "line leader," getting to help set the table, etc.) for appropriate behavior can be a powerful incentive and is relatively easy to incorporate into the classroom. This can be done for either an individual child (e.g., getting to be "line leader" if he/she keeps hands to self during lunch) or the entire class (e.g., extra outside time if everyone helps w/ clean-up). At the same time, privileges may be lost for demonstrating inappropriate behaviors. For this approach to be effective, it needs to be clear for children which behaviors will result in receiving extra privileges and which behaviors can result in the loss of privileges. *Labeled praise should also be incorporated so that children make the connection between their behavior and the desirable consequence.*

(7) **Token Economy w/ Response Cost**: This one's a little more complicated, but can be extremely effective if used correctly. Children receive tokens (e.g., plastic poker chips, coupons, etc.) for demonstrating appropriate behaviors and can lose tokens for inappropriate behaviors. Tokens can then be "redeemed" with the teacher at the end of the day for something of value to students. Be creative w/ incentives -- while tangible incentives (e.g., stickers, small toys) are one option, other things can also be used (e.g., individual time w/ teacher, privileges). It should be clear for students which behaviors will earn them tokens and which behaviors result in the loss of tokens. Again, this can be done for either an individual student or the entire class. *Labeled praise should also be incorporated when children receive tokens so that children make the connection between their behavior and the*

desirable consequence.

(8) <u>**Home-Based Contingencies**</u>: Collaborating w/ parents can often be a great way to address behavior problems across settings. Obviously, this requires cooperation on the part of parents and should be discussed before attempting the intervention. Collaborate w/ parents to identify a few (i.e., 2 to 3) positively stated behavioral goals to work on in school (e.g., how many times each day student will use words appropriately, keep hands to self while in line, share toys w/ other children). Remember to start small, so that children are likely to achieve these goals early-on and increase goals as they progress. Next, decide on a system for keeping track of the student's behavior during the day (i.e., record how many times they use words appropriately, etc.). At the end of the day, children take w/ them a home-school note to share w/ their parents. Parents can then provide reinforcement when the child achieves their behavioral goals. *Labeled praise should also be incorporated when children demonstrate desired behaviors and achieve behavioral goals at the end of the day so that they make the connection between their behavior and the desirable consequence.*

(9) <u>**Grab-Bag Reward System**</u>: This isn't exactly a separate intervention approach, but rather something that can be incorporated into the programs listed above. Different incentives (e.g., tangible rewards, privileges, time w/ teacher) are written on approximately 50 separate slips of paper and placed into a container. These incentives should include a range of items, from those that are "high value" to others that are lower in value for students. Children may choose a slip from the container when they demonstrate a desired behavior. Alternatively, this may be incorporated into a token economy system wherein children get to choose slips from the container based on how many tokens they have earned during the day. It is important to eliminate negotiations and "do-overs" at the outset of this program. *Labeled praise should also be incorporated when children demonstrate desired behaviors so that they make the connection between their behavior and the desirable consequence.*

Making Interventions Fit the Function of Children's Behavior

After observing children's behavior to determine possible functions, we can now provide interventions that help the child to achieve those same functions via appropriate behavior (e.g., using words to ask for a toy). Alternatively, we can make changes in the environment that make the behavior irrelevant (e.g., ignoring the "whiny voice."). Occasionally, when we try to intervene we find that the function of the behavior is not what we thought – so, providing interventions often involves a bit of experimentation. Some general ideas are provided in the figure below*:

Possible Function

| Avoid/Escape an unpleasant task | Obtain Teacher Attention | Obtain Peer Attention | Obtain a Toy, Privilege, etc. |

↓ ↓ ↓ ↓

Possible Interventions

| Change task, make escape contingent on appropriate behavior | Selective ignoring, attend & praise positive behaviors, use time w/ teacher as a reinforcer | Encourage & reinforce peers for ignoring, use group contingencies | Use toy or activity as a reinforcer for good behavior |

*Adapted from: DuPaul, G.J. & Ervin, R.A. (1996). Functional assessment of behaviors related to attention deficit hyperactivity disorder: Linking assessment to intervention design. Behavior Therapy, 27, 601-622.

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2000   M.S., Utah State University; Logan, UT
School Psychology, NASP Accredited

Thesis title: *The influence of parental attributions and parenting behaviors on the attributions utilized by children with and without ADHD.*

1996   B.S., University of Idaho; Moscow, ID
Psychology, *magna cum laude*

PUBLICATIONS

Phillips, P.L., Greenson, J.N., *Collett, B.R.*, & Gimpel, G.A. (in press). Assessing ADHD symptoms in preschool children: Use of the ADHD Symptoms Rating Scale. Early Education and Development.

Gimpel, G.A., *& Collett, B.R.* (in press). Best practices in parent training. In A. Thomas & J. Grimes (Eds), Best Practices in School Psychology, Fourth Edition.

Collett, *B.R.*, Gimpel, G.A., Greenson, J.N., & Gunderson, T. (2001). The assessment of discipline styles among the parents of preschool and school-age children. Journal of Psychopathology and Behavioral Assessment, 23, 163-170.

Collett, *B.R..*, Crowley, S.L., Gimpel, G.A., & Greenson, J.N. (2000). The factor structure of DSM-IV attention deficit-hyperactivity symptoms: A confirmatory factor analysis of the ADHD-SRS. Journal of Psychoeducational Assessment, 18, 361-373.

Merrell, K.W. & Collett, *B.R.* (1997). The role of the self and others in school adjustment: Social motivation in the classroom. Contemporary Psychology, 42(11), 1027-1029.

MANUSCRIPTS IN PROGRESS

Collett, *B.R.*, Myers, K., & Ohan, J. (in preparation). Rating scales IV: Externalizing disorders. Invited review, Journal of the American Academy of Child and Adolescent Psychiatry.

Ohan, J., Myers, K., & Collett, *B.R.* (in preparation). Rating scales V: Trauma and PTSD scales. Invited review, Journal of the American Academy of Child and Adolescent Psychiatry.

Collett, *B.R.*, Greenson, J.N., Gimpel, G.A., & Crowley, S.L. (in preparation). Attention deficit-hyperactivity disorder in preschool aged children: A confirmatory factor analysis of parent and teacher rated behaviors.

Greenson, J.N., Gimpel, G.A., & Collett, *B.R..* (in review). Temporal stability of ADHD symptoms in preschoolers. Journal of Abnormal Child Psychology.

Greenson, J.N., Gimpel, G.A., Crowley, S.L., & Collett, *B.R..* (in preparation). A cross-lag panel analysis of the relationship between preschoolers' ADHD symptoms and parental discipline style.

Collett, *B.R.*, Masters, K.S., Spielmans, G., & Ogles, B. (in preparation). MMPI-2 clusters as predictors of psychotherapy outcome.

Collett, *B.R.* & Gimpel, G.A. (in preparation). Teacher-Child Interaction Therapy: An adaptation of PCIT for use in the preschool classroom.

PRESENTATIONS

Collett, B.R., & Masters, K.S., & Ogles, B.M. (2001, November). <u>MMPI-2 clusters as predictors of psychotherapy treatment outcomes</u>. Poster presented at the annual conference of the Association for Advancement of Behavior Therapy, Philadelphia, PA.

Collett, B.R., Ehrlick, A., Johnson, C., Veeder, M.A., Berglof, H.K., Gunderson, T.L., Jones, T.S., Gage, J.D., Gimpel, G.A., & Odell, J.D. (2001, November). <u>Cluster subtypes among children diagnosed with ADHD</u>. Poster presented at the annual conference of the Association for Advancement of Behavior Therapy, Philadelphia, PA.

Gimpel, G. A., *Collett, B.R.*, Gunderson, T., Gage, J., & Greenson, J. (2001, November). <u>Predictors of treatment outcome in parent training</u>. Poster presented at the international conference, Association for Behavior Analysis, Venice, Italy.

Collett, B.R., Ehrlick, A., Johnson, C., Veeder, M., Burgloff, H., Gunderson, T., Gage, J., Jones, T., Gimpel, G.A., & Odell, J.D. (2001, August). <u>Differentiating ADHD subtypes in clinical practice</u>. Poster presented at the annual conference of the American Psychological Association. San Francisco, CA.

Gimpel, G.A., *Collett, B.R.*, Gage, J., Gunderson, T., Veeder, M., Ehrlick, A., Bergloff, H., Jones, T., Johnson, C., Greenson, J., Trayford, L., & Hlavaty, S. (2001, August). <u>Treatment of ADHD: Preliminary findings from a parent training program</u>. Poster presented at the annual conference of the American Psychological Association. San Francisco, CA.

Greenson, J.N., Gimpel, G.A., & *Collett, B.R.* (2000, November). <u>The bi-directional relationship between parenting behaviors and ADHD symptoms in preschool children</u>. Poster presented at the annual conference of the Association for Advancement of Behavior Therapy. New Orleans, LA.

Collett, B.R., Gimpel, G.A., Crowley, S.L., Greenson, J.N., Veeder, M., & Jones, T. (2000, October). <u>Disruptive Behaviors in Preschool Children: The Psychometric Properties and Factor Structure of the Disruptive Behavior Disorders Rating Scale</u>. Poster presented at the bi-annual Kansas Conference in Clinical Child Psychology. Lawrence, KS.

Collett, B.R., Gimpel, G.A., Veeder, M., & Jones, T. (2000, October). <u>Teacher-Child Interaction Therapy (TCIT): An Adaptation of Parent-Child Interaction Therapy (PCIT) for Use in Preschool Classrooms</u>. Paper presented the bi-annual Kansas Conference in Clinical Child Psychology. Lawrence, KS.

Collett, B.R., Crowley, S.L., Gimpel, G.A., & Greenson, J.N. (2000, August). Gender invariance of attention deficit-hyperactivity disorder symptoms. Poster presented at the annual conference of the American Psychological Association. Washington, D.C.

Collett, B.R., Gimpel, G.A., Greenson, J.N., & Gunderson, T. (2000, August). Discipline styles among the parents of preschool and school-age children. Poster presented at the annual conference of the American Psychological Association Washington, D.C.

Collett, B.R. & Gimpel, G.A. (2000, April). The attributions utilized by children with and without ADHD. Poster presented at the annual conference of the Western Psychological Association. Portland, OR.

Merrell, K., Caldarella, P., *Collett, B.*, Gimpel, G., Greenson, J., & Holland, M. (2000, March). Innovations in assessing social-emotional problems of children and youth. Symposium presented at the annual conference of the National Association of School Psychologists. New Orleans, LA.

Gimpel, G., Hlavaty, S., Gunderson, T., Gage, J., *Collett, B.*, Greenson, J., Rollins, L., & Hoff, K. (2000, March). Use of homework assignments in a parent training program. Poster presented at the annual conference of the National Association of School Psychologists. New Orleans, LA.

Collett, B.R., Greenson, J.N., Gimpel, G.A., & Phillips, P.L. (1999, November). Features of ADHD among preschool children: An exploratory factor analysis. Poster presented at the annual conference of the Association for the Advancement of Behavior Therapy. Toronto, ON, Canada.

Greenson, J.N., *Collett, B.R.*, & Gimpel, G.A. (1999, November). Temporal stability of ADHD symptoms in preschool children. Poster presented at the annual conference of the Association for the Advancement of Behavior Therapy. Toronto, ON, Canada.

Gimpel, G.A., Greenson, J.N., Rollins, L., *Collett, B.R.*, Hoff, K., Gage, J., Gunderson, T., & Hlavaty, S. (1999, November). Characteristics of child therapy drop-outs at a university training clinic. Poster presented at the annual conference of the Association for the Advancement of Behavior Therapy. Toronto, ON, Canada.

Collett, B.R. & Crowley, S.L. (1999, April). Attributional style versus guilt/shame in the prediction of affectivity among college students. Poster presented at the Rocky Mountain Psychological Association Conference. Fort Collins, CO.

Collett, B.R., Greenson, J.N., Phillips, P.L., & Gimpel, G.A. (1999, August). The relationship between parental discipline style and ADHD symptoms among preschool children. Poster presented at the annual conference of the American Psychological Association. Boston, MA.

Greenson, J.N., *Collett, B.R.*, Phillips, P.L., & Gimpel, G.A. (1999, August). Differentiating normative from symptomatic ADHD behaviors among preschool children. Poster presented at the annual conference of the American Psychological Association. Boston, MA.

Gimpel, G.A., Holland, M.L., Rollins, L., Greenson, J.N., & *Collett, B.R.* (1999, April). Developmental considerations in the assessment and treatment of attention deficit-hyperactivity disorder. Paper presented at the annual conference of the National Association of School Psychologists. Las Vegas, NV.

Collett, B.R. & Gimpel, G.A. (1999, January). The assessment and treatment of ADHD among preschool children. Paper presented at the annual conference of the Early Intervention Research Institute. Logan, UT.

Gimpel, G.A., Call, N.A., *Collett, B.R.*, Greenson, J., & Rollins, L. (1998, November). Compliance levels of children with ADHD: Congruency with parent ratings of behavior problems. Poster presentation at the annual conference of the Association for Advancement of Behavior Therapy. Washington, DC.

Collett, B.R. & Crowley, S.L. (1998, April). The influence of gender on peer nominations of depression. Poster presented at the combined annual conference of the Rocky Mountain Psychological Association and Western Psychological Association. Albuquerque, NM.

RESEARCH IN PROGRESS

Primary Investigator, "Parents' comprehension of evaluation results and recommendations" (Fall 2001 – present). This study will evaluate how well parents understand the results and recommendations provided following their child's psychological or psychiatric evaluation. The relation between the information that clinicians attempt to convey and the information that parents' report receiving is of particular interest. (Co-Investigators – David Breiger, Ph.D. & Gretchen Gimpel, Ph.D.)

Primary Investigator, "WISC-III performance among children with ADHD before and after medication treatment" (Summer, 2000 - present). This study includes the

assessment of intellectual functioning before and after children have begun to receive stimulant medication. The initial and subsequent intellectual functioning of children who have been diagnosed with ADHD but have not received stimulant medication is also being investigated. The study is being conducted to determine whether medication enhances children's performance on a measure of intellectual ability. (Co-Investigators - Gretchen Gimpel, Ph.D. & J. Dennis Odell, MD, FAAP)

Co-Investigator, "The relation between dopamine transmission, ADHD subtypes, co-morbid conditions, and treatment response" (Summer 2001 – present). This study is being conducted to evaluate the relationship between genetic markers of dopamine transmission (e.g., DAT, DRD4) and symptoms of ADHD, co-morbid symptoms, and children's response to stimulant medications. (Co-Investigators – J. Dennis Odell, M.D., FAAP & Gretchen Gimpel, Ph.D.)

TEACHING EXPERIENCE

Teaching Assistant, Intellectual Assessment; Department of Psychology, Utah State University (Fall, 2000). Responsibilities included preparing and presenting lectures on special topics, grading students' assessment protocols, grading students' evaluation reports, reviewing videotaped evaluations, and addressing student questions for a graduate-level course in intellectual ability testing. (Supervising Professor - Kevin S. Masters, Ph.D.)

Co-Instructor, Cognitive Psychology; Department of Psychology, Utah State University (Spring, 1999). Experiences included collaborating in the development and refinement of an extended course syllabus and materials, presenting weekly lectures and laboratory demonstrations, and grading student exams and papers.

Guest Lecturer, Personality Psychology; Department of Psychology, Utah State University (Spring, 1997 - Spring, 2001). Experiences included preparing and presenting in-class lectures related to cognitive theories of depression, learned helplessness, and attributional style. (Supervising Professor - Susan L. Crowley, Ph.D.)

Teaching Assistant, Physiological Psychology; Department of Psychology, University of Idaho (Fall, 1995). This experience included conducting review sessions, administering and grading quizzes and exams, and answering student questions. (Supervising Professor - Steve Meier, Ph.D.)

Teaching Assistant, Research Methods in Behavioral Sciences; Department of Psychology, University of Idaho (Fall, 1994-Spring, 1995). This included the preparation and presentation of weekly laboratory lectures and demonstrations on a variety of topics related to research design and statistical analysis within the

behavioral sciences, editing and grading student research papers, and grading quizzes and exams. (Supervising Professor - Steve Meier, Ph.D.)

CLINICAL EXPERIENCE

Psychology Internship (APA Accredited); University of Washington School of Medicine, Clinical Child Tack; Seattle, WA (Summer, 2001 – present). This APA accredited internship includes training in an outpatient child psychiatry clinic, pediatric neuropsychology assessment service, child and adolescent inpatient unit, and pediatric consultation-liaison service. Clinical duties include providing outpatient therapy for children and their families; conducting neuropsychological evaluations for neuro-oncology, learning disability, and neuro-developmental child populations; conducting evaluations for children in an inpatient setting, providing family therapy, and arranging for continuum of care services; and providing consultation-liaison services for medically ill children. (Supervisors: David Breiger, Ph.D., Matthew Speltz, Ph.D., Stan Whitsett, Ph.D., & Rose Calderon, Ph.D.)

Clinical Child Psychology Practicum; Center for Persons with Disabilities, Utah State University; Logan, UT (Fall, 2000 – Summer, 2001). Practicum in conjunction with a University Affiliated Program and an early intervention program for infants and toddlers. Experiences included behavioral parent training for the parents of toddlers and preschool children; individual and group therapy for school-age through adolescent clients; consultation with medical and educational specialists; completion of psychological evaluations and evaluation reports. (Supervisor - Patricia Truhn, Ph.D.)

Advanced Clinical Psychology Practicum; Utah State University Psychology Community Clinic; Logan, UT (Summer, 1997; Fall, 1999 - Fall, 2000). This practicum took place in a departmental training clinic. Experiences included providing both short-term and long-term individual therapy for child, adolescent, and adult clients; co-leading adolescent and adult interpersonal process groups; and completing psychological evaluations and evaluation reports. (Supervisors - Susan Crowley, Ph.D.; Kevin Masters, Ph.D.; & Gretchen Gimpel, Ph.D.)

Case Coordinator, Clinical Services Program; Center for Persons with Disabilities, Utah State University; Logan, UT (Summer, 1999 - Summer, 2000). Clinical duties included conducting evaluations for children and adolescents referred for a variety of neurodevelopmental and social-emotional disorders; consulting with medical and educational specialists in the completion of evaluations and development of treatment programs; completing evaluation reports; supervision of practicum students; providing group interventions for school age children with social skills deficits; and providing individual therapy for adolescent clients. (Supervisor - Patricia Truhn, Ph.D.)

Counseling Center Practicum; Utah State University Counseling Center; Logan, UT (Fall, 1998 - Spring, 1999). This practicum was completed in a university counseling center. Clinical duties included conducting intake interviews; providing short-term and long-term individual therapy for college students; and offering outreach presentations to on-campus student groups. (Supervisors - Gwenna Coulliard, Ph.D. & Erica Liu-Wollin, Psy.D.)

Mental Health Specialist; Bear River Head Start; Logan, UT (Fall, 1998 - Spring, 1999). Clinical duties included providing individual therapy for child, adolescent, and adult clients; providing couples and family therapy; conducting group interventions for preschoolers with social skills deficits and children dealing with grief/loss issues (e.g., divorce, death of a family member); consultation with classroom teachers and other staff; conducting classroom behavioral observations and related assessments; providing outreach services (e.g., sexual abuse prevention programs); and conducting staff training/development presentations. (Supervisor - David Stein, Ph.D.)

School Psychology Practicum; Ogden City School District; Ogden, UT (Fall, 1997 - Spring, 1998). This practicum took place in public preschool and elementary school settings. Experiences included conducting assessments and completing evaluation reports for special education placement purposes; attending and participating in interdisciplinary team meetings; providing parent and teacher consultation services; and providing group and individual interventions for elementary school children. (Supervisors - Gretchen Gimpel, Ph.D. & Cher King, Ph.D.)

Introductory Clinical Psychology Practicum; Utah State University Psychology Community Clinic; Logan, UT (Winter, 1997 - Spring, 1998). This practicum took place in a departmental training clinic. Practicum experiences included short-term and long-term individual therapy with child, adolescent, and adult clients; conducting clinical assessment procedures and the completion of evaluation reports. (Supervisor - Susan Crowley, Ph.D.)

Therapist, ADHD Treatment Outcomes Study; Psychology Department, Utah State University; Logan, UT (Fall, 1997 – Summer, 2001). This study is being conducted to evaluate the effectiveness of behavioral parent training in the treatment of children with attention deficit-hyperactivity disorder (ADHD). Clinical responsibilities included providing behavioral parent training for clinically referred children with ADHD and their parents and conducting standardized and observational assessments. (Supervisor- Gretchen Gimpel, Ph.D.)

Outcomes Assessment Coordinator, "School and Family Empowerment Project" Special Education Department, Utah State University; Logan, UT (Winter, 1997 - Fall, 1998). This project was implemented to improve the social and academic

functioning of middle school children identified as being "at-risk" for delinquency, academic failure, and school attrition. Clinical duties included arranging the initial screening of research participants; conducting standardized academic achievement assessments; training and supervising examiners; and coordinating the collection and scoring of teacher, parent, and child social skills assessment instruments. Additional duties included data entry and analysis to evaluate the effectiveness of this program. (Supervisors - K. Richard Young, Ph.D. & Richard West, Ph.D.)

AWARDS

2000-2001	Walter R. Borg Scholarship; Department of Psychology, Utah State University
1998	Women & Gender Research Institute Student Research Grant; Utah State University
1996-1997	Vice Presidential Research Fellowship; Utah State University
1994-1995	W. H. Boyer Scholarship; Department of Psychology, University of Idaho
1991-1996	College of Letters & Sciences Dean's List; University of Idaho
1991	Alumni Scholarship; University of Idaho
1994-1996	Psi Chi - psychology honorary; University of Idaho
1994-1996	Phi Kappa Phi - academic honorary; University of Idaho

PROFESSIONAL AFFILIATIONS

1997 – Present	American Psychological Association - Graduate Student Affiliate
2000 - Present	Society of Clinical Child & Adolescent Psychology (APA Division 53)
1999 – Present	Western Psychological Association - Graduate Student Affiliate
1999 – Present	Association for Advancement of Behavior Therapy - Student Affiliate
1998 – Present	National Association of School Psychologists - Graduate Student Affiliate

OTHER PROFESSIONAL ACTIVITIES

Division 16 Reviewer, American Psychological Association Conference (2000-2001)
Graduate Student Representative; Department of Psychology, Utah State University (1998 - 1999)