YOUNG CHILDREN AT-RISK FOR EXTERNALIZING BEHAVIOR PROBLEMS:
EXAMINATION OF BEHAVIOR CHANGE UTILIZING UNIVERSAL
POSITIVE BEHAVIOR SUPPORT STRATEGIES

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By
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The undersigned, appointed by the Dean of the Graduate School, have examined the

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POSITIVE BEHAVIOR SUPPORT STRATEGIES

Presented by Rebecca Sue Beckner, a candidate for the degree of Doctor of Philosophy

and hereby certify that in their opinion it is worthy of acceptance.

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DEDICATION

This dissertation is dedicated to the hard-working and devoted teachers and staff at Head Start. I am greatly inspired by your ongoing commitment to students and families and thankful for all you do under the circumstances.

And especially, thank you to Val and Raney for all the shoulder rubs, quiet work time, understanding of lost events, and unconditional and unending support. All of this has been for you. Believe it or not, "almost over" has come and gone!

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ABSTRACT

A single-subject multiple baseline research design was utilized to examine the effects of teacher use of universal Positive Behavior Support strategies on the externalizing behavior of preschool students. Four Head Start students who were identified as being at risk for behavioral problems, their mothers, and their teachers participated in this study. Following baseline observations and teacher and parent completion of behavior checklists, teachers participated in a training session on using precorrective prompts at the beginning of large group activities and specific verbal feedback to acknowledge appropriate behavior. Results indicate each teacher increased her use of both targeted positive strategies and reduced reprimand use during large group activities. The on-task behavior of all four students improved, as was demonstrated through observational data collection and pre-and post-intervention administration of standardized behavior checklists. As well, for two students observed throughout intervention in their homes, appropriate behavior improved over baseline, and one mother learned to use the same strategies in the home environment. The findings from this study corroborate previous research demonstrating that Head Start teachers can alter their universal management strategies following limited training to do so, positively impacting the on-task behavior of students who are identified as at-risk for possible behavior

disorders. Limitations for this study, as well as implications for practice and

recommendations for future research are discussed.

CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

Statement of the Problem

There has been extensive financial investment made in the field of early

childhood education with nationwide expenditures topping $20 billion in the early part of

the twenty-first century (Reynolds, Temple, & Ou, 2003), yet preschool teachers continue

to report increasing and significant displays of externalizing behavior (e.g., physical

aggression, noncompliance, verbal threats) in their classrooms, particularly in programs

designed to support children who live in poverty (Qi & Kaiser, 2003). Many Head Start

programs report more than 25 percent of students demonstrating concerning behavior

(Webster-Stratton & Hammond, 1998). Children in such programs may live in homes

where families struggle with ongoing violence, mental illness, and other factors, which

place them at risk for maladjustment (Raver, 2002; Raver & Knitzer, 2002), and for

developing long-term patterns of antisocial behavior (Stormont, 2001; Walker, Ramsey,

& Gresham, 2004).

Many behaviors, such as overactivity and demonstration of anger toward peers

can be developmental in nature during the preschool years as children are learning skills

to get along in their communities (Division for Early Childhood (DEC), 1999; Dunlap et

al., 2006). Many young children who are at-risk for ongoing behavioral problems

demonstrate delays in language development and often require support to learn different

ways of getting their needs met rather than through aggression and noncompliance

(Conroy & Brown, 2004; Delaney & Kaiser, 2001). In general, developmentally most young children demonstrate behaviors that are annoying to their parents and care providers, yet improvement is generally seen by the time they enter kindergarten (Campbell, 2002; Patterson, 1982). However persistent inappropriate actions, especially those demonstrated despite provided support, may indicate the start of a negative cycle that could lead to difficulty in school and potential problems with relationships, and even employment (Walker et al., 2004). Campbell (2002) suggests that young children who demonstrate patterns of overly active, highly irritable, and often noncompliant behavior could be more likely to demonstrate ongoing adjustment issues when compared to students with average levels of behavior. When difficulties are identified early there is better prospect of reducing long-term negative effects through intervention (Raver, 2002; Walker et al., 2004).

Recognizing the need for such supports, many early childhood programs have begun incorporating social skills instruction into their programming (Ialongo, Poduska, Werthamer, & Kellam, 2001; Serna, Nielson, Lambros, & Forness, 2000), while others are utilizing the support of mental health consultants (Department of Health and Human Services (DHHS), 2001). Teaching children better ways of getting their needs met prior to negative behavior becoming chronic in nature may keep some students from being referred for special services or mental health evaluations, although these efforts may be hindered by negative factors from outside the school environment.

As parenting has been identified as a significant influence on the development of social competence, many intervention programs have targeted family members (Dunst & Kassow, 2004; Gallagher, 2003) and positive results have been reported (Eyberg,

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Funderburk, Hembree-Kigin, McNeil, Querido, & Hood, 2001; Webster-Stratton, Reid, & Hammond, 2001). However, various limitations to success of intervention, such as dropout before intervention is over, failure of parents to complete components of treatment, and limited maintenance of positive changes made are documented in the literature (Assemany & McIntosh, 2002).

Ideally, a systemic approach which addresses both the home and early school environments could consistently provide the support needed to curb negative patterns of antisocial behavior and arm teachers and parents with the tools needed to help keep children on the right track (Dunlap et al., 2006). Promising results have been shown when intervention programs have combined social skills instruction for children with teacher and parent training on how to manage and improve behavior for (i.e., improved management skills, decreased problem behavior at home and school; Webster-Stratton, Reid, & Hammond, 2004; Walker, Kavanagh, Stiller, Golly, Severson, & Feil, 1998). Although the therapeutic benefits of these programs are many, they may lack the longevity of support necessary to maintain improvements.

Over the past decade public schools across the nation have adopted a proactive and constructive approach to combat growing concerns regarding student behavior called School-wide Positive Behavior Support (SW-PBS; Lewis & Sugai, 1999). System-wide interventions that target explicitly taught, rehearsed, and acknowledged behaviors across all educational settings have been associated with reduced number and severity of office referrals, increased academic on-task time, and fewer referrals for special education services (Colvin, Kameenui, & Sugai, 1993; Kartub, Taylor-Greene, March, & Horner, 2000; Lewis, Sugai, & Colvin, 1998). Similar strategies have been labeled as important

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and feasible in Head Start and other early childhood programs (Frey, Faith, Elliot, & Rover, 2006; Stormont, Lewis, & Covington-Smith, 2005). Program-wide Positive Behavior Support (PW-PBS) has recently been implemented in numerous early childhood centers across the country (Fox & Little, 2001; Frey, Lingo, Young, & Nelson, 2006; Stormont, Lewis, & Beckner, 2005). Early anecdotal reports from staff members reveal promise for this approach to preventing behavioral disorders in young children (Fox, Jack, & Broyles, 2005; Fox & Little, 2001), with the potential for consistent and sustainable support as children transition from early childhood to elementary settings which implement School-wide Positive Behavior Support. Ongoing investigation into the key strategies for success in early childhood programs is currently relevant.

Parent involvement is a key component of early childhood programming and is mandated in Head Start (DHHS 2001). As parenting has been identified as both a risk and protective factor for child development, it is appropriate to target childrearing activities through school-based intervention programs in early childhood settings (Baydar, Reid, & Webster-Stratton, 2003; Greenberg, Domitrovich, & Bumbarger, 2001). As more preschool programs across the nation utilize the PW-PBS approach investigation of potential generalization of behavior change to the home environment, where parents use the same strategies, can provide valuable information for future programming. In early childhood settings educators and parents must work together to confront the growing issue of challenging behavior. The remainder of this chapter will provide information regarding problem behavior of young children as well as programming for prevention and intervention with potential behavior disorders.

Review of Related Literature

The following review of literature will address the prevalence and significance of problem behavior in the preschool age group, both at school and as reported by parents. Next, the current state of early intervention programming for preschool-aged children with behavioral difficulties will be examined, as will factors that impact success. Third, the need for consistent programming across school and home environments will be discussed. A specific approach, the implementation of universal Positive Behavior Support strategies will be examined, with focus on Head Start students who are identified as at-risk for long-term behavioral problems. Targeted strategies (i.e., precorrective reminders of expected actions and providing acknowledging feedback to students upon the demonstration of appropriate behavior) that have been shown to be key elements of many successful intervention programs will be addressed. Finally, parental involvement with such supports will also be explored.

Significance of the Issue

Studies have shown that 10 to 15 percent of all children exhibit moderate to severe levels of behavioral concern (Campbell, 1995; Powell, Fixsen, Dunlap, Smith & Fox, 2007) and increasingly, young children with potential behavioral disorders are enrolled in early childhood education settings (Shonkoff & Phillips, 2000). As a result preschool staff report that the number and severity of problem behaviors are rising (Yoshikawa & Zigler, 2000) and surveyed kindergarten teachers indicate that 48% of their incoming students experience difficulties in making the transition into kindergarten and need support with following directions, working independently or in a group, and communicating with peers and teachers (Rimm-Kaufman, Pianta, & Cox, 2000).

Counselors, school psychologists, behavior consultants, and administrators are

regularly asked to address behavioral issues involving young children in their buildings.

Preschool expulsion rates due to problem behavior are alarmingly high (Gilliam, 2005)

and children with challenging behavior are much more likely to be dismissed from early

childhood settings than are those who demonstrate appropriate social skills (Brennan,

Bradley, Arna, & Cawood, 2003).

Prevalence and severity. When examining the pervasiveness of antisocial

behavior in preschool-age samples, students from homes where the family lives at or

below the poverty level have demonstrated a higher occurrence of behavior problems

when compared to the general population (Qi & Kaiser, 2003). Overall levels of

aggressive behavior have been shown to be higher in Head Start populations than in

sampled community daycare programs (Kupersmidt, Bryant, & Willoughby, 2000). In

one sample, 25 percent of Head Start students were identified by their parents as having

significant externalizing behavior, which was then observed by investigators (Jones-

Harden et al., 2000).

Conduct disorders and other behavioral difficulties can develop as a fairly stable

pattern from as early as three years of age (Campbell & Ewing, 1990; Webster-Stratton et

al., 2001) and young children are receiving behavior intervention services, including

medication, through mental health agencies at an increasing rate, and as early as age two

(Coyle, 2000). Characteristics of preschool children that appear to lead to potential

delinquency and other difficulties include: impulsivity, attention deficits, social skill

delays, difficult temperaments (i.e., negative affect, difficulty regulating emotions), and

aggression toward adults and other children (Kumpfer, 1999; Raver & Knitzer, 2002).

One longitudinal study with 1037 student subjects revealed that parental ratings of temperament and observations of aggression and hyperactivity at ages three and five years were strong predictors of antisocial behavior patterns at six years follow up (White, Moffitt, Earls, Robins, & Silva, 1990).

Environmental risk factors. Research of the past few decades suggests that the parent-child relationship is especially important in the proper development of the social and problem-solving skills of young children (National Research Council and Institute of Medicine, 2000; Webster-Stratton & Taylor, 2001). Early noncompliant behavior in the home has long been suggested as potential groundwork for continuing behavior difficulties (Forehand & McMahon, 1981) and can be affected by the quality of parenting practices. The opposite is also true: difficult behavior of children may impact discipline practices of parents and other caregivers (National Research Council, 2000; Tolan & McKay, 1996).

Patterson and colleagues (1982; 1991) have described the "early starter model" in relation to the acquisition of antisocial behavior and attribute it partially to reinforcement from family members. "Coercion theory" states that a parent-child interaction cycle with parental reinforcement of negative behavior and child reinforcement of inappropriate parenting responses leads to more intense and more frequent patterns of defiant behavior.

There is a strong relationship between punitive discipline and the level of aggression and rates of disruptive behavior in children who have been identified with conduct disorders (Webster-Stratton, 1997; Webster-Stratton & Hammond, 1998). In families with children who demonstrate disruptive behavior, physical discipline has been linked to child aggression, and oppositional behavior has been associated with limited

levels of parental warmth and positive involvement (Campbell, 1995; Stormshak, Bierman, McMahon, & Lengua, 2000). In other words, children who live in homes and neighborhoods where antisocial behavior is frequently observed and parenting styles are typically negative, are potentially being reinforced for the demonstration of antisocial behavior as they age (Richters & Cicchetti, 1993; Stormont, 2001; Walker et al., 2004; Webster-Stratton & Taylor, 2001).

In response to growing concerns for the potential of these children researchers and policy makers are currently examining the accumulation of risk as an important predictor of emotional and academic success (Raver, 2002; Webster-Stratton & Hammond, 1998). Risk factors that have been shown to affect the trajectory of a child's behavioral disposition include lack of prenatal care, prematurity, difficult temperament, ineffective parenting practices, living in poverty, and exposure to violent activity (Campbell, Shaw, & Gilliom, 2000; Foster, Kelsch, Kamradt, Sosna, & Yang, 2001; Walker et al., 2004).

The more risk a child is exposed to, the greater the chance of demonstrating maladaptive behavior (Conroy, Hendrickson, & Hester, 2004; Serna et al., 2000), and potentially antisocial behavior (Raver & Knitzer, 2002; Webster-Stratton et al., 2001). As many as 32 percent of young children are exposed to one environmental risk factor that may impact later learning, while 16 percent experience two or more such stressors (Raver & Knitzer, 2002; Webster-Stratton et al., 2001). Young children may be able to develop in a typical fashion if one or two family problems exist; yet when they are continually subjected to such stressors, normal development is potentially affected.

Within the classroom, persistent and inappropriate actions, especially in light of additional classroom support or intervention, may indicate trajectory toward a negative

cycle of ongoing antisocial behavior (Walker et al., 2004). Campbell (2002) suggests that young children who demonstrate patterns of overly active, highly irritable, and often noncompliant behavior are more likely to have ongoing adjustment issues when compared to students with average levels of maladaptive behavior. It has been recommended that early screening efforts should be undertaken and interventions should be put into place for students who are at-risk, both at school, and in homes (Qi & Kaiser, 2003; Walker et al., 2004).

The Need for Prevention and Intervention in the Early Years

As parents and educators become more concerned with the increasing prevalence and severity of problem behavior among young children, it is important to explore ways to support both teachers and families to intervene as needed. A brief overview follows of preschool-based interventions designed to address this issue, as well as parent behavioral training.

Early childhood education efforts regarding behavior. In general, an optimal time to teach all children about appropriate school behavior is during the preschool years (Fox, Dunlap, & Cushing, 2002). Early childhood teachers are in the unique position of preparing children for school, both socially and academically. If children enter elementary school having never been told or shown what appropriate school behavior looks like they may encounter punitive responses to their actions rather than being taught necessary skills, particularly if they have histories of demonstrating concerning behavior in social settings and preschools (Lewis & Sugai, 1999; Sugai & Horner, 2001).

Behavior reduction interventions that are provided for the entire classroom have been shown to be effective when teachers receive training in behavior management and

students are taught how to control their behavior and have opportunities to practice the skills (Ialongo et al., 2001). For example, when all Head Start students in three randomly selected classrooms participated in 12 weeks of training in following directions, sharing, and problem-solving, behavior ratings showed positive improvement (i.e., less problem behavior, more appropriate activity levels, and improved adaptive behavior) when compared to two classrooms of children who did not receive the treatment (Serna et al., 2000). When this study was replicated in three experimental and three control classrooms behavioral symptoms were again reduced for the treatment group (Serna, Nielsen, Mattern, & Forness, 2003). For both studies, behavioral symptoms of students from the control groups worsened without intervention.

A second example of a classroom intervention designed to address problem behavior in young children focused on affection activities to promote positive interactions and social skills instruction (i.e., sharing, requesting, persistence, and agreeing; Tankersley, Kamps, Mancina, & Weidinger, 1996). A group of 34 Head Start students with externalizing behavior difficulties were nominated by their teachers to receive 10 weeks of intervention. When compared to a control group of 11 students who only received typical Head Start programming, the target group demonstrated improved social skills while the control group showed no improvement.

A limitation of behavioral interventions used in early childhood settings, such as those described above, include the short-term nature of programming which may not assure maintained improvement due to lack of ongoing supports for children or staff as they advance from classroom to classroom and from early childhood settings to elementary school (Serna et al., 2000; Tankersley et al., 1996). It is possible to obtain

behavioral change in the school environment although results are most likely specific to the current setting and may not result in sustained outcomes (Webster-Stratton & Taylor, 2001). Often there is limited connection between services for young children with behavioral difficulties and what supports will be available in elementary school. Unless teachers work with other educational staff and with parents to share intervention success and specific strategies, maintenance across school years and generalization of behavior change to other settings is unlikely (Hester, Baltodano, Hendrickson, Tonelson, Conroy, & Gable, 2004).

Parent training for early childhood behavior. Historically, parents have sought out services and support from medical and mental health providers in an effort to thwart concerning behavior that affects family life and can lead to expulsion from child care (Brennan, Bradley, Arna, & Cawood, 2003), which is very concerning for the emotional and financial well-being of families. Often parents will attend a parent education lecture in order to learn about child development, strategies to use with their children, and to become aware of community resources (Halpern, 2004; Kumpfer, 1999). When demonstrated behavior becomes more severe and potentially dangerous, parents may seek out more intensive services.

Decades of research on interventions developed to reduce externalizing behavior in young children and to enhance the parent-child relationship have been conducted in the mental health field and it has been demonstrated that improvement in child behavior can occur with the use of behavior modification techniques (Dunst & Kassow, 2004; Gallagher, 2003; Eyberg et al., 2001; Guerney, 1991; Johnson & Katz, 1973; Webster-Stratton et al., 2001). Numerous group behavior parent training programs have been

developed (Kazdin, 1997; Kumpfer, 1999) and typically address behavioral and relationship issues to help parents understand and alter their own behavior which can result in improved perceptions about parenting abilities and lead to better relationships with children (Dunst & Kassow, 2004; Gallagher, 2003; Kazdin, 1997; Tiano & McNeil, 2005).

Parent-Child Interaction Therapy (PCIT), which has been labeled as a "probably efficacious treatment" by the American Psychological Association's Division 12 Task Force on Effective Psychosocial Interventions, is an example of a well-researched intervention program for teaching parents to alter child behavior (Eyberg et al., 2001; Gallagher, 2003; McNeil, Herschell, & Gurwitch, 2005). Through intensive training in a play-therapy context, parents are taught skills that promote a nurturing relationship with their children and to improve the children's behavior. Across studies, statistically significant improvements in home behavior and a reduction in qualification for a mental health diagnosis were shown, as well as maintained improvements through follow-up periods up to 24 months after treatment (Gallaher, 2003).

Another well-researched intervention program, First Steps to Success, includes targeted components to intervene when individual children demonstrate troubling behavior at home and school (Golly et al., 1998; Walker et al., 1998). Parents and teachers are trained by a consultant to address specific behavioral concerns identified through screening for early signs of problematic behavior (i.e., aggression, opposition, defiance, severe tantruming, or victimization of others). This program typically takes two to three months to complete and one child is taught at a time through six lessons on communication and sharing, cooperation, limit-setting, problem-solving, friendship

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making, and development of confidence. Instruction occurs in both the school and home setting with individual and group reinforcement utilized for changed behavior.

Studies which have investigated the First Steps to Success program have shown promising results (i.e., increased academic engagement and improved behavior) and support collaboration between teachers and parents in interventions for young children with behavioral concerns (Beard & Sugai, 2004; Lien-Thorne & Kamps, 2005; Overton, McKenzie, King, & Osborne, 2002; Walker et al., 2004).

During the 1980s, family-focused systems of care were introduced as a component of addressing rising delinquent behavior (Osher & Osher, 2002). This grew into a strong movement in children's mental health where collaboration between agencies was addressed to reduce communication barriers and was labeled the "wraparound" approach (Singer, Goldgerg-Hamblin, Peckham-Hardin, Barry, & Santarelli, 2002; Sugai, Horner, Dunlap, Hieneman, Lewis, Nelson et al., 2000).

Despite documented positive outcomes for many children and their families, limited treatment results occur for some families who participate in parent training (Assemany & McIntosh, 2002). Dropout before the intervention is complete is one concern and even though not all studies report this data, for those who do, dropout rates range from 8% to 48%. For example, 34% of parents dropped out of treatment utilizing Parent-Child Interaction Therapy during one study (Schumann, Foote, Eyberg, Boggs, & Algina, 1998). Other negative outcomes of parent behavioral training include failure of parents to completely participate in treatment and limited maintenance of positive changes. Webster-Stratton (1990) reported that in some cases over one-third of families fail to respond to treatment with maintained improvement. Poor treatment results are

thought to be due to socioeconomic disadvantage, family dysfunction, limited parental

education, illiteracy, punishing parenting practices, insufficient social support, and

increased severity of the child's externalizing behaviors (Assemany & McIntosh, 2002;

Kazdin, 1997; Singer et al., 2002; Tolan & McKay, 1996).

Perhaps a significant barrier to long-term success of parent behavioral training is

the limited generalization of changed child behavior to other environments, such as

schools (Forehand & McMahon, 1981; Singer et al., 2002). It is suggested that in

conjunction with parent training, direct intervention in educational environments is

necessary to alter the behavior of young children in classrooms and other school settings.

Need for Consistent Programming across Environments

The programs high-lighted above, as well as others targeted to improve behavior

of young children focus primarily on the instruction of teachers and students or the

training of parents. However, children who are subjected to multiple risk factors may

need comprehensive intervention (Lucyshyn, Horner, Dunlap, Albin, & Ben, 2002;

Shonkoff & Phillips, 2000). Maintenance of behavior change across time and

generalization of skills between environments are challenging objectives and may require

extended intervention across school years and in the home, with possible assistance from

mental health agencies and other community programs (Hester et al., 2004).

Examples of multi-component intervention programs. One example of an

intervention program that does involve all significant parties is The Incredible Years

Training which was designed as a prevention and intervention program for children ages

3 to 12 years (Webster-Stratton, 2001). Skills in positive communication, child-directed

play, consistent and clear limit setting, and discipline strategies, to include prompting and

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praise are taught to adults. Objectives for the children include improving social and academic competence, reducing behavior problems, and increasing positive interactions with peers, teachers, and parents.

This program has been extensively researched over the past 20 years (Baydar et al, 2003; Reid, Webster-Stratton, & Beauchaine, 2002; Webster-Stratton & Hammond, 1998; Webster-Stratton et al., 2001; 2004) and results indicate problem behaviors can be significantly reduced and social competence and academic engagement can be increased through a combination of parent, child, and teacher training (Conroy et al., 2004; Scott, Spencer, Doolan, Jacobs, & Aspland, 2001; Webster-Stratton et al., 2001; 2004). However, when parents and children were trained, positive child behavior change did not generalize to school settings (Webster-Stratton & Hammond, 1997). Teachers were provided with written materials to supplement the child and parent training, although they were not involved in the intervention or observed for use of the strategies.

Webster-Stratton and colleagues (2001) have since incorporated a teacher component to the Incredible Years training and have demonstrated its utility in Head Start. Fourteen Head Start centers were randomly assigned to receive the intervention compared to a group of control centers who received Head Start services only. In order to investigate the effectiveness of parent and teacher training for prevention of conduct disorders 191 mothers participated in 12 weeks of training and teachers and family service workers received ongoing training on classroom management and discipline strategies throughout the school year. Baseline and post-intervention observations were made in homes and schools, and parents and teachers completed child behavior rating scales. Experimental mothers were shown to have significantly improved parenting skills,

parents and teachers were shown to have more collaborative relationships, teachers utilized classroom management strategies, and children had significantly fewer conduct problems at home and at school.

The Regional Intervention Program has also been well-researched and includes structured classroom programs for children, parent behavior management training, parental training of their own children, and teacher training (Strain & Timm, 2001). Additional features of this program are the training of parents to facilitate support to other parents and follow-up services to families as needed. Over time, results have consistently shown that parents and teachers are able to alter their management skills, problem behavior decreases for children, outcomes maintain over time, and families who enrolled when their children were youngest had the greatest long-term results (Strain & Timm, 2001).

In schools that serve young children who are at-risk for behavioral difficulties, established programs to address the social skills of young children, to support those with behavioral difficulties, or to provide parents with information on how to interact with their children have not been widely adopted (Conroy & Brown, 2004). Furthermore teaching staff have not typically been trained on how to select and use research-based strategies or parent training programs (Webster-Stratton et al., 2001). Head Start is mandated to provide such services for these children (DHHS, 2001).

Head Start designed as a collaborative effort between educators and parents. Head Start was created in the 1960s to provide low-income children the opportunity to increase social competence (i.e., ability to cope with the stresses of everyday life) and to prepare academically for school entry (DHHS, 2001). A core value of the Head Start

program is the establishment of an appropriate learning environment for all children through screenings for health and development, including social and emotional needs, and possible areas of developmental concern (DHHS, 2001). Head Start Performance Standards require parental involvement in programming and the agency is to provide family support in the form of parent education and referrals for mental health services as needed (DHHS, 2001).

There is great need for services in the Head Start program for children with mental health and behavior related issues (Yoshikawa & Knitzer, 1997). Head Start serves a population of families who are highly at-risk. More than one-third of these families are subjected to three or more major risk factors such as low socioeconomic status, single parenthood, and life stresses, and up to 45% of Head Start mothers demonstrate maladaptive parenting (Webster-Stratton & Hammond, 1998). Head Start students are at-risk for developing chronic behavioral difficulties as they tend to have higher rates of aggressive and problem behavior than do children in randomly selected community daycare programs that serve the same population of students (Kupersmidt et al., 2000).

To compound the issue, many staff members at Head Start do not have college degrees in child development, or related fields (Yoshikawa & Zigler, 2000). These teachers recognize the need for support regarding challenging behavior and have identified such training as highly important. Interventions should target challenging behavior, coach teachers on the use of behavior management strategies, and provide for regular mental health consultation for young children (Webster-Stratton et al., 2001; Yoshikawa & Zigler, 2000). Head Start Performance Standards establish that classroom

staff will be provided opportunities to receive training on social-emotional development and how to address maladaptive behavior (DHHS, 2001).

Regardless of mandated supports, recent investigation has not demonstrated dramatic improvement in the social and behavioral functioning of Head Start students. The Family and Child Experiences Survey (FACES) longitudinal research study, utilizing a representative sample of 3200 children in programs across the country, examined the effect of Head Start on preschool children and their families (DHHS, 2000). Findings of data collected in 1997 and 1998 reveal children who participated in the typical Head Start curriculum did gain some cognitive and social skills. A slight reduction in hyperactive behavior and increase in cooperation occurred across the school year. Findings were very similar following collection of data in 2003 (DHHS-FACES, 2006). Parents who were interviewed reported higher levels of appropriate social behavior in the home when they were involved in educational activities with their children, although fewer positive effects were found for African American and Hispanic families.

The Head Start Impact Study is currently underway with data collected on nearly 5000 preschool-aged children in 23 states who were randomly assigned to a treatment group who has received Head Start services and a control group who has not (DHHS, 2005). Baseline and annual data collection to include parent interviews, standardized child assessments, teacher rating scales, teacher surveys, staff interviews, and direct observation in programs have been continually collected and the treatment group is compared to the control group annually. Preliminary data analysis has demonstrated that Head Start's ability to remediate behavioral difficulties is low (yet statistically significant regarding hyperactive behavior). Based on parent report, first year findings suggest that

Head Start's effect on the social skills and social competence of 3-year-olds is limited

and nonexistent for those who enter Head Start at age four. Also, little, yet statistically

significant impact has been seen on the discipline strategies of parents of 3-year-olds (i.e.,

less spanking of children).

 Increasing the chances for maintained behavior change. As has been discussed,

collaborative programs do exist to support teachers and parents in their efforts to teach

young children social skills and to intervene when behavior problems become worrisome.

Barriers to successful intervention with such programs include getting key adults to

participate, guaranteeing they implement the strategies with fidelity, and ensuring

maintenance of positive behavior change (Assemany & McIntosh, 2002).

 Additional concerns include the higher cost and extended time period required to

complete many comprehensive intervention programs and the need for educational staff

and family members to collaborate given potential differences in beliefs and expectations

regarding discipline for their respective environments (Hemmeter, Ostrosky, & Fox,

2006). As well, lack of coordination between early childhood educators and specialists in

the field of behavior consultation, high turnovers in staff, and a wide range of

professional training of many early childhood educators (i.e., high school diplomas, to

credentials in early childhood development, to degrees in social work or education)

contribute to lack of continuity in training and reliable implementation of programs

(Conroy & Brown, 2004; Hemmeter et al., 2006).

 Perhaps a main limitation for programming intended to provide prevention and

intervention services to schools and families is the lack of systemic support that allows

for consistent follow-through across grade levels as children age (Sugai et al., 2000).

Although many successful and research-based programs have been discussed and provide

evidence that training of teachers, parents, and children does positively impact problem

behavior, few have demonstrated how to maintain behavior change across school years

and to support generalization to other settings. It has been suggested that follow-up

review of previous behavioral treatment into kindergarten and the elementary grades may

preserve gains made as children get older and move to new environments (Webster-

Stratton et al., 2001). Various intervention programs have demonstrated the importance

of "booster sessions," or long-term services to reach into the elementary years for

children at-risk for behavioral difficulties (Campbell & Ramey, 1994; Walker et al.,

1998). This could perhaps be accomplished when targeted strategies are analyzed and

then incorporated into a system that flows from the early childhood program into the

public school setting that allows for educators to be trained and supported on the use of

positive behavior strategies, and potentially incorporates home supports as well. The

School-wide Positive Behavior Support initiative may provide this comprehensive and

long-term support to school personnel, all students, and families.

School-wide Positive Behavior Support

School-wide Positive Behavior Support (SW-PBS) is a proactive, system-wide

intervention approach which provides for specific instruction to all building staff,

flexibility to match with the school's philosophy, and technical assistance to teachers, as

well as proven strategies to impact children's behavior (Lewis & Sugai, 1999; Sugai et

al., 2000). Through this approach, the school utilizes a continuum of interventions with

increasing intensity that range from the central, universal supports for all children to more

specialized behavior interventions for students at risk for, or displaying chronic behavior problems.

The universal system of defining and teaching consistent behavior (i.e., instruction and practice of social skills with all students and across all settings in the building) is the foundation of SW-PBS (Lewis & Sugai, 1999). Demonstration of appropriate behavior is verbally acknowledged by staff so that students not only hear what is expected in the school building, but are also given feedback on whether they are demonstrating skills as expected. For children who are at risk for chronic behavior patterns, this level of support acts as primary prevention (Stormont, Lewis, & Beckner, 2005; Walker et al., 2004).

As a three-tiered system of supports, when children do not respond to universal behavioral management strategies or even more direct instruction of social skills with prompting for appropriate behavior, more intense, individualized strategies are initiated (Lewis & Sugai, 1999). Functional behavior assessments are utilized at this level (Harrower, Fox, Dunlap, & Kincaid, 2000; Lewis & Sugai, 1999). Functional assessment of the problem behavior can result in the identification of antecedent and maintaining variables to be manipulated and new behaviors that can be taught to the child that fulfill the same function and reinforced (Dunlap et al., 2006). Individualized supports, such as mentoring or self-management strategies can then be put into place as elements of a function-based behavior improvement plan.

The SW-PBS approach is built upon a host of research studies regarding the prevention of behavior problems in schools (e.g., Colvin, Kameenui et al., 1993; Mayer, 1995; Walker, Horner, Sugai, Bullis, Sprague, Bricker et al., 1996) with many studies to

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date having occurred in elementary school buildings. Investigation has shown that office referrals in schools using SW-PBS are reduced by as much as 60 to 80 percent (Nakasato, 2000; Scott, 2001; Todd, Horner, Anderson, & Spriggs, 2002) and behaviors have improved in specialized settings, such as the playground and during hallway transitions (Colvin, Sugai, Good, & Lee, 1997; Kartub et al., 2000; Lewis, Powers, Kelk, & Newcomer, 2001).

Building on previous research, key practices are emphasized to ensure all students are aware of and can demonstrate the school expectations at the universal level of SW-PBS. These strategies involve the adjustment of adult behaviors (DEC, 1999; Patterson et al., 1991) and include instruction of positively stated expected behaviors and routines, guided practice of learned skills, precorrective reminders and cues, and praise in the form of specific feedback. Each has been extensively researched individually and when combined to create the universal system of PBS (Colvin, Sugai, & Patching, 1993; Colvin et al., 1997; Lewis et al., 1998; Nelson, Colvin, & Smith, 1996; Sutherland, Wehby, & Copeland, 2000).

When the arrival routine at an elementary school was targeted for improvement through explanation of the behavioral expectations, modeling of the expected behavior, systematic practice of the behaviors, and prompting as needed, inappropriate behaviors decreased and appropriate behavior increased significantly (Nelson et al., 1996). The use of precorrective prompts was investigated during transitions in and out of the building and to lunch at an elementary school (Colvin et al., 1997). Although experimental control was limited, fewer problem behaviors were observed when teachers reminded students of the expectations at each transition.

Specific feedback has been provided to students as acknowledgement of observed appropriate behavior. When the use of behavior-specific praise was increased by the teacher of nine elementary students with emotional/behavioral disorders, the students' on-task behavior increased significantly (Sutherland et al., 2000).

In a small elementary school, all students in first through fifth grade participated in social skills instruction during transition to lunch, recess, and other settings (Lewis et al., 1998). Through direct instruction of expectations, modeling, role-playing, and review in the classroom, followed by practice in the actual settings, with precorrective reminders and verbal praise, problem behavior was reduced and improvements were maintained at 3-month follow up. School staff determined that most of the remaining behavior difficulties came from a small group of students with more significant behavioral problems.

Similar results have been seen when these same strategies are utilized in preschool environments. An investigation specific to preschool-aged students with identified behavioral difficulties revealed that targeted social skills lessons, modeling, coaching, verbal and physical prompting, and praise can impact behavior (McConnell, Sisson, Cart, & Strain, 1991). Social skills training brought about demonstration of appropriate behavior during role-playing opportunities, however specific coaching (i.e., prompting and praise) were necessary during free play for expected behavior to maintain. Prompting students for expected actions can serve as a reminder during the initial practice of new skills or as correction prior to the possible demonstration of predicted inappropriate behavior for students who struggle with the expectation or during transitions (Stormont, Lewis, & Beckner, 2005).

Program-wide Positive Behavior Support. In preschool and childcare programs

throughout the country, increasing behavior concerns have recently been addressed

through the use of Program-wide Positive Behavior Supports (PW-PBS; Fox, Dunlap,

Hemmeter, Joseph, & Strain, 2003; Fox & Little, 2001; Frey, Lingo et al., 2006;

Stormont, Lewis, & Beckner, 2005). To date, limited empirical evidence has been

produced at the pre-school level to support PW-PBS (Covington-Smith, 2004; Frey, Faith

et al., 2006; Fox et al., 2005; Stormont, Covington, & Lewis, 2006; Stormont, Covington-

Smith, & Lewis, 2007; Stormont, Lewis, & Covington-Smith, 2005), however, the

essential features of PW-PBS are rooted in past behavioral research as briefly described

in the earlier section on SW-PBS.

Initial reports describe the process of implementing PW-PBS and distinguish

important differences between preschool and K-12 practices (Fox & Little, 2001;

Stormont, Lewis, & Beckner, 2005). These differences include the structural variation, in

that many early childhood programs are often located throughout districts and even

across communities rather than being concentrated in one building, hence the simple

difference in terminology (i.e., "program-wide" replacing "school-wide"; Frey, Lingo et

al., 2006; Stormont, Lewis, & Beckner, 2005).

In efforts to unite the principles of PBS, developmentally appropriate practices,

and constructivist curricula used in many early childhood settings, philosophical issues

have been addressed in the literature. For example, actions such as fighting and

tantruming, which are unaccepted by staff in elementary school, are acknowledged as

more common in younger age groups (Campbell, 2002; DEC, 1999; Frey, Lingo et al.,

2006). Young children may not yet have the skills to negotiate with peers and express

their emotions (Dunlap et al., 2006). Preschool teachers must be aware of developmental levels and which behaviors are typical of different age groups and teach new ways of getting needs met.

Within the early childhood PBS framework, foundational training strategies include a focus on building positive relationships with students, their families, and other staff members (Fox et al., 2003; Fox et al., 2005; Hemmeter et al., 2006). Further universal strategies for preventing challenging behavior in the preschool classroom, such as designing supportive environments through arranging the classroom for success, teaching daily routines, and maintaining a consistent and predictable daily schedule are targeted in staff training.

Also, due to developmental differences between younger and older children, early childhood programs select fewer and perhaps more simple and concrete behavioral expectations to teach the students than are typically chosen for elementary schools (Stormont, Lewis, & Beckner, 2005; Stormont, Lewis, Beckner, & Johnson, 2007). At this age it is important to provide instruction in a manner that is easily understood (Hieneman, Childs, & Sergay, 2006). Lessons developed for instructing and practicing appropriate behaviors are most likely provided through preschool-oriented materials and methods (i.e., puppet shows, picture cues, songs, and repeated practice of behaviors at opportune times throughout the day).

And finally, most early childhood programs typically do not collect data on behavioral infractions, such as office referrals, which are used as an indicator of reduced behavior incidences in most elementary schools. Data collection for PW-PBS is more apt to include a documentation system for observations of behavioral patterns, classroom

plans for effective teaching and crisis or escalating situations, and screening for students who require more individualized support (Stormont, Lewis et al., 2007). The PBS team, made up of representative persons from the program decides how, when, and where specific incident data should be addressed (Stormont, Lewis, & Beckner, 2005; Stormont, Lewis et al., 2007). The framework for PW-PBS calls for ongoing training and technical assistance for staff in order to make available the support needed to implement each strategy (Conroy & Brown, 2004). Although an investment of time is necessary, the team approach for PW-PBS encourages numerous staff members to gain additional knowledge on how to support students with behavioral difficulties.

  Research on Program-wide Positive Behavior Support. A few initial studies have been done on use of the PW-PBS approach in early childhood settings (Frey, Faith et al., 2006; Fox et al., 2005; Stormont, Lewis, & Covington-Smith, 2005) and on specific strategies that are identified as key features of the universal level of support (Covington-Smith, 2004; Stormont et al., 2006; Stormont, Covington-Smith et al., 2007). As research support for PW-PBS in early childhood settings is still emerging, it is important to analyze each component of the intervention. As was reported earlier, SW-PBS and PW-PBS strategies are a combination of evidence-based practices that have been incorporated to develop a system-wide approach that supports all students and staff. Outcomes of initial applications of the PW-PBS approach as well as the investigation of specific strategies identified as key features of PW-PBS are provided below.

  In a report from the Center on the Social and Emotional Foundations for Early Learning and the Center for Evidence-Based Practices: Young Children with Challenging Behavior, preliminary data from classroom observations, standardized rating scales,

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recommended practices assessment scales, and staff interviews and focus groups were analyzed for one 12-county Head Start program where PW-PBS has been implemented and positive outcomes were found (Fox et al., 2005). Although this report does not provide information on an experimental design utilized, it does indicate that fewer students were referred to outside sources for services, students were shown to follow taught behavioral expectations, staff indicated satisfaction with the process, they saw themselves as capable of supporting students at Head Start, and financial resources for mental health services were mainly utilized for prevention rather than intervention, as had generally occurred in the past (Fox et al., 2005).

Two studies have examined the social validity of implementation (Frey, Faith et al., 2006; Stormont, Lewis, & Covington-Smith, 2005) with results suggesting preschool staff believe the key features of this approach are very important. A recent investigation of opinions regarding the use of positive behavioral supports from ninety-two special and general education preschool staff from several Midwestern public school districts demonstrated that most believe their use is important (Stormont, Lewis, & Covington-Smith, 2005). Personnel completed a behavior support questionnaire prior to implementation of PW-PBS. They rated 25 behavioral support strategies for importance and feasibility of implementation on a seven-point scale where a rating of one indicated the strategy was "not at all important" or "not at all feasible" and a rating of seven indicated the strategy was "extremely important" or "totally feasible." Teachers rated most supports as more important than did instructional aides, yet all staff rated 20 of 25 as "mostly important." Regarding feasibility, most items (23 of 25) were rated as "somewhat" or "mostly feasible." Early childhood teachers appear to agree with the need

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for implementation, yet are aware of the effort implementation of PW-PBS would require.

Following four months of PW-PBS implementation in one Head Start program with the development of a PBS team, staff training on classroom management strategies to include the key features of PW-PBS, and the development of classroom action plans, satisfaction surveys and classroom observations were completed and focus group interviews were held with 25 teachers in a quasi-experimental, post-test only study (Frey, Faith et al., 2006). Seven classrooms were chosen to receive the intervention (i.e., participate in PW-PBS with university support). On a 7-point satisfaction survey with a range from "completely dissatisfied" to "completely satisfied," staff indicated overall that they were generally "most satisfied" with the strengths approach of the intervention and collaborative efforts. During focus groups, staff indicated satisfaction with the team process and teachers of students with more intense behaviors stated that they needed more support, which was to be expected as only the universal strategies for all students had been implemented through this project.

Targeting specific universal strategies. The universal strategies of PW-PBS include the teaching and practicing of expected school behaviors with feedback provided to students on their demonstration of anticipated actions, among others (Lewis & Sugai, 1999; Stormont, Lewis et al., 2007). Previously discussed investigations of interventions that incorporate the teaching of appropriate behavior and the use of behavioral supports such as prompting and praise have shown that early childhood teachers can successfully use the strategies and that student behavior does improve (Serna et al., 2000; 2003; Tankersley et al., 1996). Recent research within Head Start programs who utilize the PW-

PBS approach described earlier has assessed the level of implementation of targeted

strategy use by teaching staff (i.e., specific praise for the demonstration of appropriate

student behavior and precorrective reminders of behavioral expectations prior to expected

actions) and has examined the impact of the targeted strategies on the observed behavior

of young children.

The use of preventative behavioral techniques by 13 preschool teachers in three

Midwestern Head Start centers were tracked across the school year following three

phases of program-wide training on the key features of PW-PBS and follow-up technical

assistance to practice with teaching scripts (Stormont et al., 2006). No control group was

utilized during this study. Teachers were observed in 15-minute sessions during 97

teacher-directed activities such as small and large groups and 50 child-directed area play

sessions. Frequency counts were made of targeted adult behaviors. Positive changes in

teacher behavior were observed. Teachers significantly decreased their use of directives

and reprimands with significant decreases in mean use across the three phases of training.

Teachers also increased their use of specific praise, yet not at the statistically significant

level. In this initial study, no impact on student behavior was analyzed.

This line of research was expanded when Covington-Smith (2004) individually

trained three Head Start teachers to utilize these same positive teaching strategies during

large group activities and monitored the problematic behavior of students chosen for

observation due to their risk level for behavioral disorders. The teachers were chosen

from the original pool of subjects from the study described above (Stormont et al., 2006)

and were identified as having low levels of implementation of the targeted universal

support strategies (i.e., precorrective reminders and praise statements) and high levels of

reprimand use. One target student per classroom was selected based on high levels of problem behavior on standardized rating scales. Teacher use of strategies and student behavior were observed across several weeks during greeting circle activities utilizing a multiple baseline design. Teachers were provided ongoing technical assistance on strategy use throughout the intervention phase of the study.

Overall findings indicate that these teachers did increase their use of strategies with targeted students and the groups as a whole. Two teachers maintained the level of implementation during two monthly follow-up observations. No individual interventions were directly implemented with students. Increased strategy use by teachers was functionally related to increased on-task behavior and decreased physical aggression from students.

A further expansion of this line of research occurred with three staff members from the same Head Start program who demonstrated high rates of reprimands coupled with low rates of specific praise. Two teachers and one teaching assistant who performed teaching duties were individually trained to give a precorrective reminder of behavioral expectations at the beginning of small group activities and specific verbal feedback for appropriate behavior throughout (Stormont, Covington-Smith et al., 2007). Frequency of specific behavioral praise statements, precorrective prompts, and reprimand use were recorded with a multiple baseline across teachers design. All students in each group of seven to nine students were observed for off-task and other problem behaviors during small group activities. Actions were calculated as a rate of problem behavior for the whole group. At the end of each observation teachers were provided with feedback on their use of targeted strategies.

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Results indicate a positive relationship between increased strategy use by teachers and decreased problematic behavior by students following a short teacher training and brief daily feedback regarding their strategy use. Use of precorrective prompts for behavioral expectations at the beginning of small group activities increased dramatically for two of three teachers. As well, each increased their use of praise statements and student behavior improved. Teachers were not instructed to reduce use of reprimands and were not provided with daily feedback on their use. Rates of reprimands did not change significantly yet were lower than rates of praise statements at the end of the study.

Most documented studies of the implementation of PW-PBS have occurred in Head Start programs (Covington-Smith, 2004; Fox et al., 2005; Frey, Faith et al., 2006; Stormont, Covington-Smith, & Lewis, 2006; 2007). As discussed earlier, prevalence research has shown that over 25 percent of Head Start students demonstrate behavioral difficulties (Jones-Harden et al., 2000; Webster-Stratton & Hammond, 1998). This information, and other factors, make Head Start an ideal venue for addressing at-risk behavior through the use of positive behavior supports. Additionally, the Head Start program focuses on partnering with family members to support all students. Continued investigation of key strategies to impact student behavior in early childhood settings lends itself to preliminary study of the generalization of learned social skills into the home environment, especially when parents are trained to replicate use of the same universal strategies.

Use of Positive Behavior Support Strategies with Family Members

Unfortunately, schools do not have a history of partnering with families prior to the escalation of inappropriate and externalizing behaviors (Guerney, 1991; Webster-

Stratton & Taylor, 2001) and little research has been done on the involvement of parents in SW/PW-PBS programming, other than at the intensive, individualized levels of service (Fox et al., 2002). The application of PBS for particular children with chronic and significant behavior difficulties has involved family members for several years (Dunlap & Fox, 1999; Dunlap, Newton, Fox, Benito, & Vaughn, 2001; Harrower et al., 2000).

Recently, leaders in the field have called for the involvement of parents and other family members at all levels of PBS implementation (Hemmeter et al., 2006; Lewis, 2005). When schools implement a PW-PBS approach, they have an organized system with prospective avenues to collaborate with families and community agencies, potentially creating a system of care which can support students, teachers, and families from early childhood through graduation.

The literature regarding behavioral interventions to involve parents has shown that improved child behavior does not generalize well across settings, such as from home to school or school to home (Webster-Stratton, 1997). In schools, improved behavior in children with social, emotional, and behavioral delays has been shown when social skills instruction, modeling, and feedback are incorporated, however without intervention in all school settings and continued monitoring, learned behaviors may not be consistently demonstrated (Lewis et al., 1998; McConnell et al., 1991).

The training of parents to address problematic child behavior is a component that may be missing in school-wide programming. When parents and teachers are both provided with instruction in behavior management, outcomes of improved child behavior have been shown, both in the home and at school (Webster-Stratton et al., 2001). Applied research on school-home partnering within a system of PW-PBS could possibly illustrate

increased chances for positive behavioral change to sustain across time and generalize to the home environment.

As discussed earlier, parent training alone and without ties to the child's school environment may not lead to sustained benefits for families or children (Assemany & McIntosh, 2002). Collaborative partnerships are built with parents based on communication and a shared vision for students (Fox & Little, 2001). Family members could be taught to use what has been described as a "home-wide support system" (Jolivette, Liaupsin, Christle, & Scott, n.d.) similar to programming at school which provides the structure to teach, practice, and reinforce expected behavior in the home and other settings. Use of the PBS principles within a model of structuring the child's environment offers flexibility to fit the needs of each family (Hieneman et al., 2006) as it does for each school, be it Head Start or high school.

Antisocial behavior patterns can be diverted if early intervention is implemented at school and at home (Walker et al., 2004). Ultimately, utilizing key strategies to combat problem behavior in preschool programs for children at-risk for behavior disorders and providing consistent support across time and between environments may be the answer to maintained and generalized behavioral change.

<div align="center">Summary</div>

Integrated school-wide approaches that provide consistent classroom management strategies and individualized programming for children with conduct problems can be highly effective (Webster-Stratton & Taylor, 2001). Early education intervention that targets the acquisition of prosocial behavior for all children rather than trying to prevent misbehavior in a few appears to be an appropriate approach at this time (National

Research Council, 2000; Reid et al., 2002). Many schools and daycares, including Head Start, have begun to provide social skills instruction for all students in the building (Frey, Lingo et al., 2006; Stormont, Lewis, & Beckner, 2005).

The three-tiered model of supports for all students and staff utilized in SW-PBS for elementary and secondary schools has been adapted for early childhood programs (Fox et al., 2003; Fox et al., 2005; Stormont, Lewis, & Beckner, 2005). Implementation of PW-PBS has been demonstrated to work feasibly in the preschool setting, although empirical findings are only now being documented (Covington-Smith, 2004; Serna et al., 2000, Stormont, Covington-Smith et al., 2007).

Intervention effectiveness has been shown to be highest prior to behaviors becoming chronic or clinically significant (Tolan & McKay, 1996) and warding off such patterns is the goal for the universal level of PW-PBS, which includes the key features of defining behavior expectations and encouraging expected behavior through teaching, modeling, practice, and feedback (Fox & Little, 2001; Stormont, Lewis, & Beckner, 2005).

Walker and colleagues (2004) have suggested that early intervention for behavioral difficulties should occur in both schools and homes, with teachers and parents. Following longitudinal studies and controlled experimental trials, researchers have indicated that improving parenting practices is an effective and lasting strategy for reducing behavioral problems (Barlow et al., 2000). Some behavioral parent training programs have been well investigated with numerous independent replications (Kazdin, 1997; Webster-Stratton et al., 2004).

Although results are encouraging, especially regarding short-term gains, neither parent education and behavioral training, nor family support agencies can independently impact the magnitude of needs and challenges faced by many families (Halpern, 1993). Relevant concerns include the lack of long-term sustainment of outcomes and limited generalization of learned skills to other environments, such as schools. Research should continue into the effectiveness of parent training through studies that address generalization and maintenance effects of behavioral instruction, especially in combination with school-wide programming (DEC, 1999; Hester et al., 2004; Ialongo et al., 2001; Kamps & Tankersley, 1996).

No documented studies of SW-PBS in the public schools or PW-PBS in Head Start have included home use of universal strategies by parents as a component of overall programming. Investigation is currently relevant in order to analyze the generalization of improved behavior into the home setting, especially when parents are trained to use the same strategies as those incorporated in the school setting.

As limited empirical investigation has been reported on the impact of PW-PBS this line of research should continue. Specifically, ongoing exploration of the use of targeted universal strategies (i.e., precorrective reminders and specific feedback for appropriate behavior) with Head Start students can provide valuable information regarding appropriate programming in early childhood settings, as well as for professional development efforts with preschool staff. Infusing research-based interventions to prevent antisocial behavior in early years of schooling contributes to efforts to slow the significant behavioral concerns in elementary schools (Walker et al., 1996).

Statement of Purpose

The purpose of this investigation is two-fold. First, this study will extend investigation into Head Start teacher use of specific strategies (i.e., precorrective reminders of behavioral expectations and the use of specific verbal feedback for the demonstration of appropriate behavior) in order to further investigate if strategy use can positively impact targeted externalizing behaviors of preschool-aged children who are identified by their teachers as at-risk for behavioral concerns on screening and standardized behavior rating scales. Second, potential generalization of positively changed behavior for the same children will be examined in the home setting. Additionally, as a pilot investigation, parents will be taught to use the same two strategies in the home environment in order to examine if improved behavior can be replicated across settings.

Research Questions

Specifically, this study addressed the following research questions:

1. Can preschool teachers increase their use of specific universal positive behavior support strategies during large group activities given training and daily performance feedback?

2. If preschool teachers increase their use of specific universal positive behavior support strategies during large group activities, will targeted problem behaviors of preschool-aged children decrease and appropriate behaviors increase in the school setting?

3. If preschool teachers increase their use of specific universal positive behavior support strategies during large group activities, will targeted problem behaviors of

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preschool-aged children decrease and appropriate behaviors increase in the home setting?

4. Can parents increase their use of specific universal positive behavior support strategies during "family time" in the home given training to do so?

5. Will changes in rates of targeted strategy usage by adults and improved child behavior in the school and home setting result in decreased family stress identified by parents?

CHAPTER II

METHOD

Overview

This study investigated the impact of specific strategies (i.e., precorrective reminders and specific verbal feedback for the demonstration of appropriate behavior) on externalizing behavior of preschool-aged children who were identified by their Head Start teachers as at-risk due to behavioral concerns. Generalization of outcomes was also examined in the home environment. A single subject multiple baseline design across participants was utilized in order to examine the functional relationship between selected strategies and student behavior.

Participants and Setting

Teachers

Seven Head Start teachers from two buildings were asked to participate in this study during a staff meeting to discuss the general purpose and overall benefits of the research, as well as teacher responsibilities as outlined in the Teacher Consent Form (see Appendix A). Teacher questions were addressed, and once consents were signed, preliminary direct observation was completed on all teachers.

Rate of appropriate use of specific positive behavior support strategies was a target of this study; therefore, teachers with low implementation of these strategies were selected as study participants. Low implementation of targeted strategies was defined as limited use of specific positive verbal feedback accompanied by high rates of reprimand statements (i.e., a verbal statement indicating disapproval of a student's actions

(Sutherland, Wehby, & Yoder, 2000) with a ratio of four negative to one positive statement (Stormont, Covington-Smith et al., 2007). Data were also collected on the use of precorrective reminders for behavioral expectations at the beginning of large group.

Teachers were observed during large group activities for three consecutive days and frequency data was translated to a ratio of observed reprimands to positive statements. Four teachers were invited to participate based on their low rates of implementation of targeted strategies prior to training. All four teachers provided limited specific feedback for appropriate behavior and much higher rates of reprimands to their students. When analyzed as rate per minute, teacher one used .28 reprimands per minute (i.e., approximately one reprimand every three minutes) compared to .02 statements of positive feedback. The ratio for teacher two was .48 (i.e., one every two minutes) to .05 in favor of reprimands, for teacher three it was .17 to .02, and for teacher four it was .27 to .08

It was also noted if teachers used precorrective reminders about behavioral expectations at the beginning of each large group activity. Two teachers provided one of three possible precorrective reminders at the beginning of large group activities and the other two did not offer any precorrection to their students regarding behavioral expectations. Teacher demographics are provided in Table 1.

Following direct observation and final selection, these four teachers reported interest and willingness in implementing PW-PBS strategies in their classrooms and identified at least one student with problematic behavior. Each was asked to consider students whose noncompliance or aggression they were concerned with. These were to be students who were not receiving any special education or mental health services.

Table 1: *Teacher Demographics*

Teachers	Total Years Preschool Experience	Total time Teaching Head Start	Highest Educational Level	Race
Teacher One	3 years	2 months	MS degree in Social Work	Caucasian
Teacher Two	4 years	2 years	AA degree in Early Childhood Education	Caucasian
Teacher Three	4 years	1 ½ years	BS degree in Child Development	Caucasian
Teacher Four	1 year	1 year	BS degree in Psychology	Caucasian

Students

Once teachers were selected for study participation, each nominated up to three students from their classrooms for which they had concerns regarding externalizing behavior. Teachers contacted each student's parents individually and shared the Study Description for Parents (see Appendix B) and the Parent Consent Form (see Appendix C). Once parents had given consent, they completed the Early Screening Project (ESP) Parent Questionnaire regarding their child's behavior and teachers completed ESP Teacher Questionnaires (described in the Dependent Measures Section of this chapter; Walker, Severson, & Feil, 1995). No student names were provided to the researcher until parents gave written permission for participation in the study and completed the ESP Parent Questionnaire.

Four male students were selected for study participation using the following criteria: 1) the student's parent consented to participation in the study; 2) the child

demonstrated behaviors in the home that were concerning to parents, as evidenced by

responses on the ESP Parent Questionnaire; 3) the child was four or five years old; 4) the

student was not receiving any special education or mental health services; 5) the child

received an at-risk T Score at or above 60 on both ESP Teacher subscales (i.e.,

Aggressive Behavior Subscale and Maladaptive Behavior Subscale); and 6) the child

signed the Child Assent Form (See Appendix D) which was read to him. See Table 2 for

student characteristics and pre-intervention ESP scores, which includes concerns

documented by parents.

Table 2: *Student Characteristics and Pre-Intervention Early Screening Project Scores*

Student	*Age*	*Race*	*Year in School*	*Aggressive Behavior Scale (Teacher)*	*Maladaptive Behavior Scale (Teacher)*	*Parent ESP Concerns*
Student One	5 years	Caucasian	2nd	T Score: 80+ %tile Rank: 99th Risk: Extreme	T Score: 80+ %tile Rank: 99th Risk: Extreme	Overly active
Student Two	5 years	Caucasian	1st	T Score: 80+ %tile Rank: 99th Risk: Extreme	T Score: 77 %tile Rank: 99th Risk: Extreme	Aggression Anger Emotional
Student Three	5 years	Caucasian	1st	T Score: 80+ %tile Rank: 99th Risk: Extreme	T Score: 60 %tile Rank: 84th Risk: At Risk	Anger Aggression Tantrums Emotional
Student Four	5 years	African American	2nd	T Score: 80+ %tile Rank: 99th Risk: Extreme	T Score: 80+ %tile Rank: 99th Risk: Extreme	Fights with siblings

Intervention Setting and Generalization Environment

Four classrooms in two full-day Head Start centers in a Midwestern community served as intervention sites, and three homes served as generalized settings. Each classroom had a lead teacher and an assistant teacher, with 15 to 20 students per classroom. Children ranged from three to five years of age, with an average age of four years. Approximately 60 percent of students at these centers were African American and 35 percent were Caucasian. All teachers in these centers were female and there were two male instructional aides on staff.

In order to measure potential generalization of learned skills into the home environment, this study required that data collectors be in the homes over several weeks to observe child behavior, and that parents agree to complete pre- and post-treatment measures. Head Start teachers explained this while obtaining written consent and parents were encouraged to contact the investigator with any questions or concerns. In each case, the mother completed documentation and was present for all home observations. They ranged in age from 22 to 29 years. Two had high school diplomas, one had her Associate's Degree and the fourth was working on her Bachelor's Degree. All parents were told they had the option of withdrawing from the study at any time and this was described in the Parent Consent Form.

Teacher-directed, large group activities in the preschool setting and "family time" between parents and children in homes were observed in order to match as closely as possible the type of activity examined at school and in the home. Teacher-directed, large groups were chosen in order as standard part of each classroom's routine in order to provide for observation during a scheduled activity that was always led by the lead

teacher and occurred daily. This group activity was generally completed in the same location each day with all adults present. At times the group consisted of sit-down discussions about the day's activities, the weather and calendar, and the assignment of helper jobs. During other large group activities, the students were asked to stand and sing, dance, or complete finger plays or role-playing activities. The classroom teacher stated the expectations for the students and led the actions. School observations began when the majority of students had transitioned to the teacher-directed, large group activity and ended following the transition to a new activity.

"Family time" as observed in the home environment, was defined when the child and the mother were both in the home for the entire observation period with opportunities for social interaction. Examples included: the parent cooked dinner while the children played at the table, parents read the newspaper and children played in the family room, or parents and children read a book or played a game together. Particular activities were not prescribed by the investigator, as the expectation for parents and children to interact for structured periods of time has been identified as a potential intervention in itself for decreasing problematic behavior (Hancock, Kaiser, & Delaney, 2002). Parents were only told that the student and parent must remain in the same area during the entire observation.

<u>Independent Variable</u>

The independent variable in this study was the implementation of selected universal supports of PW-PBS in the classroom. The strategies taught to school staff, and observed during teacher-directed, large group activities, were adopted from the key features of School-wide PBS (Colvin et al., 1997; Lewis & Sugai, 1999; Lewis et al.,

1998; Nelson et al., 1996; Sutherland et al., 2000) and had previously been studied as

intervention strategies in Head Start classrooms (Covington-Smith, 2004; Stormont,

Covington-Smith et al., 2007). Supports included adult use of precorrective reminders at

the beginning of large group and specific acknowledging feedback for the demonstration

of appropriate behavior. Adult use of reprimand statements was also observed but not

specifically targeted within the intervention. Table 3 in the section on Dependent

Variables provides operational definitions for each behavior.

Teacher Training and Support

Following collection of baseline data (described later), the researcher provided

training and technical support to teachers as each was included in the study. The initial

training occurred one on one with the teacher in the Head Start classrooms at a

convenient time for staff. It lasted 90 to 120 minutes across the four classrooms and in all

cases the instructional aide was in the room when training occurred. Each teacher was

regularly reminded throughout training and intervention to refrain from discussion of the

study with other staff members. They were also informed of the importance of being the

lead teacher for each observed large group activity. The training included verbal and

written descriptions of the basic approach involved in PW-PBS as well as the use of the

specified strategies (See Appendix E). Videotaped examples of each strategy were shown

to teachers and time was provided for questions and examples to be discussed. These

examples had been previously filmed when an early childhood teacher from a different

facility demonstrated the strategies with examples and non-examples.

Teachers were trained to use a precorrective reminder for behavioral expectations

within the first five minutes of large group. They were not instructed to provide a

precorrective prompt at the end of the group activity although data was collected at this time to determine generalization of strategy use. Teachers were also trained to provide specific verbal feedback for the demonstration of on-task and compliant behavior. Teachers were instructed to use such feedback as appropriate with the target child, other students, and with the group as a whole. No suggestions for how often to provide feedback in order to observe natural use of this strategy. The use of reprimands was not discussed, although data was collected on their use in order to determine if the number of observed reprimand statements would automatically decrease as more positive strategies were employed.

Data collectors continued to observe adult and student behavior during the training phase. The investigator visited the school setting for several days at scheduled times (during natural breaks for each teacher) to discuss the targeted strategies and their observed use, and to answer any questions. Following training, limited verbal engagement occurred between the teachers and data collectors unless the teacher had a question about the strategies. Daily performance feedback was provided to teachers on their use of precorrection and feedback to students. Following each classroom observation the data collector provided written information on the occurrence or nonoccurrence of precorrective reminders and the number of reprimand and acknowledging feedback statements heard during large group on a sheet of paper in a folder in each classroom so that the teachers had immediate access to the data.

Parent Training for Replication of Behavior Change

In order to measure generalization of behavior change, data were collected on child behavior (i.e., appropriate/on-task behavior, aggression, tantruming, and property

destruction) in homes throughout baseline, teacher training, intervention, and follow-up phases of this study. Baseline and follow-up data were also collected on rate per minute of parental use of reprimands, precorrective reminders, and specific feedback for appropriate behavior.

During the follow-up phase parents were trained to use precorrective prompts and specific verbal feedback for appropriate behavior in order to determine if they could learn to use the strategies and if they would have an impact on student behavior in the home. The investigator met with parents for 45 minutes to describe the Positive Behavior Support approach used at school and to provide identical training materials that had been shared with teachers. As with teachers, no discussion was held regarding the reduction of reprimands. During a second meeting, the investigator modeled the preventive strategies with children and answered questions. Parents were asked to practice strategy use across family activities and observations were scheduled in the home.

Treatment Integrity

Ongoing observational data were collected by data collectors throughout the training period regarding teacher proficiency in implementing intervention strategies during large group activities in order to ensure that the intervention components were being correctly executed. Treatment integrity was measured as rate of specific intervention components correctly used.

<div align="center">Dependent Variables and Measures</div>

The dependent variables for this study included: duration of appropriate or on-task behavior by the student at school and at home (see operational definition in Table 3 below), teacher use of targeted strategies (see operational definitions in Table 4 below),

parent and teacher ratings of student behavior on standardized instruments, and parent

ratings of parental stress on a standardized scale.

A classroom preventive practices checklist was utilized pre- and post-intervention

to generally determine the developmental appropriateness of classrooms. Pre- and Post-

treatment assessments provided global information about the child's behavioral

difficulties and level of social skills, as well as parental concern and stress regarding the

behavior. Direct observation of adult and child behaviors provided information about the

implementation of the intervention and any reduction in problem behavior. Following is

an individual description of each measure, including the method of direct observation

utilized in this study. Appendix F provides an overview of each instrument as well as a

timeline for their use and a quick reference for the purpose for each in this study.

Inventory of Practices for Promoting Social Competence (The Center on the Social and

Emotional Foundations for Early Learning, 2003).

The checklist on classroom preventive practices from the Inventory was used as

an observational tool for this study to determine pre- and post-intervention developmental

appropriateness of each classroom setting and was filled out by the investigator. The

Inventory was created by the Center on the Social and Emotional Foundations for Early

Learning as an assessment of developmentally appropriate practices and is used to

determine training needs in the areas of 1) building positive relationships, 2) classroom

preventive practices, 3) social and emotional teaching strategies, and 4) individualized

and intensive interventions. Items included on the Inventory were informed by evidence-

based practices in early childhood settings and developmentally appropriate practice.

Skills and indicators are rated as "consistently," "occasionally," or "seldom" being used

in targeted areas such as routines, transitions, rule setting, engagement with students, and providing positive attention to children. Comments on observations are provided by the observer. When behaviors are not consistently observed, an action plan of training can be developed regarding skills of limited use or understanding.

When used as a pre-and post-intervention observational tool, Covington-Smith (2004) found that ratings on the "classroom preventive practices" checklist improved overall following teacher training and implementation of specific teaching strategies, with relevant improvement shown for skills related to the targeted teaching strategies of increased warnings at transitions and the use of praise and encouragement.

The Early Screening Project (Walker, Severson, & Feil, 1995).

The ESP Teacher Questionnaires were designed for use as a child-find tool for students who are at risk for serious externalizing or internalizing behavior challenges and was used in this study to identify students with externalizing behavior concerns. Both frequency and intensity of adjustment problems are assessed through three possible stages: (1) teacher rankings; (2) parent and teacher questionnaires; and (3) direct observation of behavior to be conducted by a consultant, counselor, or school psychologist.

For this investigation teachers completed the Aggressive Behavior scale which measured the frequency of tantrums, aggressive acts towards adults and other children, noncompliance, property destruction, and inappropriate language. They also completed the Maladaptive Behavior scale regarding interactions with other children, defiance, class disruptions, and adult-attention seeking behavior. Parents completed a Caregiver

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Questionnaire on interactions with other children, compliance, and serious behaviors such as stealing, property destruction, and biting.

Raw scores on all teacher completed scales are converted to T-scores, standard deviations, and percentile ranks. The ESP was normed by gender on 2,853 children aged 3 to 6 years from eight states (Feil, Walker, & Severson, 1996) and has been assessed for its feasibility with different cultural groups in Head Start (Feil, Walker, Severson, & Ball, 2000). When compared to other preschool measures of behavior, reliability and validity are adequate (Feil, Walker, & Severson, 1995). Interrater reliability between teacher and teacher-assistant pairs averaged across the three stages at .77. Correlations for test-retest reliability for the teacher questionnaires ranged between .74 and .90. The Aggressive Behavior and Maladaptive Behavior scales averaged a correlation of .78 on concurrent validity compared to two other standardized scales (i.e., the Behar and Conners). No documentation of predictive validity has been published to date.

Social Skills Rating System: Preschool Versions (SSRS) (Gresham & Elliot, 1990).

The parent and teacher versions of the SSRS focus on the development of social skills in the areas of cooperation, assertion, responsibility (parent only), self-control, externalizing problem behavior, and internalizing problem behavior. In this study, the SSRS was utilized as a pre- and post-intervention measure of child behavior change. The preschool version identifies at-risk students from three to eight years of age. The SSRS uses a 3-point Likert scale (0-2) and is a standardized instrument. The large, nationally representative standardization sample of over 4000 students included children from low-income and culturally diverse families. Clinical cut-off scores are provided per gender

and scores beyond 1.0 standard deviation are considered to be at-risk. The SSRS has a reliability coefficient of .82 for teachers and .73 for parents.

Beach Center Family Quality of Life Scale (FQLS) (Beach Center on Disabilities, University of Kansas, 2003).

The FQLS measures intervention effectiveness and was adapted by the researcher to be completed pre- and post-intervention as a measure of parent stress and satisfaction with life following implementation of classroom strategies and possible improved child behavior. It is also used for obtaining information about a family's needs in situations where teams are working to support a student with behavioral or other disabling disorders (Smith-Bird & Turnbull, 2005). The scale contains six subscales: Family Interaction, Parenting, Emotional Well-being, Physical/Material Well-being, and Disability-related Support. Family members rate items for importance and satisfaction level. Each subscale has been shown to be internally consistent, with a range from .80 for Emotional Well-being to .92 for Family Interaction (Turnbull, Turnbull, Poston, Beegle, Blue-Banning, Diehl et al., 2004). Test-retest reliability for each was significant at the .01 level. Regarding satisfaction level, correlations ranged from .71 for Parenting to .77 for Physical/Material Well-being. Convergent validity was shown when tested with other scales of family functioning. The scale was normed on a sample of 1197 persons from 459 families.

Direct Observation Data Collection

Trained observers collected data during baseline, teacher training, implementation, and follow-up phases of this investigation in both the school setting and in the homes of students. A pen and paper observation tool was utilized to note the

frequency of adult use of specified strategies and the presence of appropriate or targeted problem behavior by children through use of a 10-second whole interval recording instrument (See Appendix G). If on-task, or appropriate behavior was observed for the entire interval, it was marked as so. If inappropriate or problem behavior was observed at any point during the interval, the observer did not mark the interval as on-task.

Observers used cassette recorders and earphones to provide timed cues across multiple data points at 10-second intervals for 10 to 30-minute periods of time. The length of each observation was dependent upon the activity chosen by the teaching staff. Teachers were not asked to alter their large group activities in any way and some large groups were longer than others, with 80 percent of groups lasting between 10 and 20 minutes (i.e., 90 of 113 total groups across four teachers and all phases of the study).

At school, the observation period began when the class was called to large group and the majority of the group had arrived. The observation period ended after the students transitioned away from large group to another activity, providing further data collection opportunities. At home, the observation period began with an agreed upon start by data collectors as long as the child and parent were both in the setting.

Direct observation of child behavior. The targeted problem behaviors observed during this study were identified as noncompliance or off-task, property destruction, aggression, and tantruming (see Table 3 for complete operational definitions). The absence of problem behavior, or Appropriate/On-task Behavior, was also observed (see Table 3). During baseline data collection observations were made during a minimum of five large group activities and until a clear trend in adult strategy use and problematic child behavior was observed.

Throughout teacher training observations occurred each weekday for the duration of a teacher-directed large group activity. During the remainder of the intervention phase, observations occurred from one to four times per week. Probe observations were made during the same type of activity throughout the follow-up phase. Behavioral observations also occurred one to two times per week during "family time" at home.

Table 3: *Child Behavior Categories, Operational Definitions, and Specific Examples*

Behavior Category	*Operational Definitions and Specific Behavior Examples*
Appropriate/On-task Behavior	Appropriate or on-task behavior is defined as the absence of targeted problem behaviors (i.e., noncompliance, property destruction, or aggression) and compliance with adult expectations. Appropriate behavior was coded when the child was observed to comply with group and individual behavioral expectations during large group activity, without demonstrating inappropriate behavior (i.e., noncompliance, property destruction and/or verbal or physical acts) during a whole 10-second interval. At home, appropriate behavior was coded when the child complied during family routines observed. NONEXAMPLES: The teacher asks the group to sit down for a story after dancing. The child yells, 'No!" and runs across the room. During a board game with Mother and a sibling, the child loses a turn and tears up the card.
Noncompliance/Off-task Behavior	Noncompliance/off-task behavior is defined as lack of compliance with directions or task requirements. This included leaving a line or area, lack of participation in actions of a routine, refusals to speak when asked, and/or not changing a behavior (such as touching others or materials that are off-limits to the child), taking materials, or interfering with others. Noncompliance was coded when the child was observed to demonstrate such behavior at any point during a whole 10-second interval. NONEXAMPLES: The child walks down the hall with his hands behind his back after the teacher reminds the group of the expectation to not touch materials on the wall. At home, Father calls for the child to set the table and she enters the room and asks what she should do first.

Table 3 Continued

Property Destruction	Property destruction is defined as movement of, or damage to, materials or furniture without having obtained adult permission. This included actions such as throwing items in the trash, pulling work off of walls/tables/desks, and turning over furniture. Property destruction was coded when the child was observed to demonstrate such behavior at any point during a whole 10-second interval. NONEXAMPLE: When sent to sit in the safe spot, the child refrains from knocking materials off the shelves and tearing down posters.
Aggression	Aggression is defined as a verbal threat or physical attack on another person. This included times when a child's body came into contact with another person in a negative manner (e.g., hitting, kicking, biting, choking, pushing, poking, pulling hair, spitting, throwing things with directional intent, or giving a bear hug/tackle without prior permission). This also included verbal threats against another person (e.g., yelling directly at someone, whining, vocalizing intent to hurt or kill another, threats to tell on another, or sticking out a tongue at another person). Aggression was coded when the child was observed to demonstrate such verbal or physical behavior at any point during a whole 10-second interval. NONEXAMPLES: When another child takes a toy, the targeted child refrains from hitting and threatening injury.
Tantruming	Tantruming is defined as screaming, refusing to comply, refusing to move/get up, and/or crying. This may occur when given a directive or without apparent provocation. Tantruming was coded when the child was observed to demonstrate the behavior at any point during a 10-second interval. NONEXAMPLES: The group is asked to put toys away and the child does so, refraining from crying and lying on the floor. The parent is on the phone for several minutes and the child waits patiently, refraining from screaming and demanding a cookie.

Direct observation of adult behavior. During all phases of this study direct

observation of teacher strategy use was completed. Parent use of the same strategies was

observed during baseline and follow-up phases with probe observations. Precorrection

was coded as occurring or not occurring during the first five minutes of group and

frequency of verbal feedback use was measured during the same large group activities

listed above and converted to rate per minute. Frequency of reprimand use was also

observed and converted to rate per minute. Table 4 below provides definitions and

examples of each adult behavior category recorded.

Table 4: *Adult Behavior Categories, Operational Definitions, and Specific Examples*

Behavior Category	*Operational Definitions and Specific Behavior Examples*
Precorrective Reminders	Precorrection is defined as the stating and/or explaining (and possible physical practice) of an expected behavior, rule, or routine prior to expectation for an action to occur (Colvin, Sugai et al., 1993; Colvin et al., 1997). For example, prior to walking down the hall to the playground, the teacher stops the students at the classroom door and reminds them of specific expectations, such as keeping sticks on the ground on the playground. In the home setting, prior to getting into the bathtub, the parent reminds the child that water stays in the tub. Precorrection was coded as occurrence/nonoccurrence at the start of the targeted group and upon the transition from large group to another activity. This occurred within the initial 5 minutes of the targeted activity.

NONEXAMPLES: The teacher opens the classroom door and the children run down the hall and onto the playground. Mother tells the child to get ready for bed, yet does not give direct instructions, and is later angry when the child has not brushed her teeth. |

Table 4 Continued

Specific Acknowledging Feedback	Specific acknowledging feedback is defined as a positively stated verbal comment indicating approval of an action (Sutherland, Wehby, & Yoder, 2000). Observed behavior is described and paired with a general behavior expectation. These may also be linked to nonverbal gestures such as smiles, high fives, or thumbs up. Specific acknowledging feedback was coded as occurring when given after the targeted child demonstrated on-task/appropriate behavior, or when the whole group or other children demonstrated on-task/appropriate behavior. NONEXAMPLES: Children follow classroom rules, yet no adult comments on the actions. For the first time all week, the child remembers to hang up his coat, yet no one provides feedback on this improved action.
Reprimand	A reprimand is defined as a verbal comment indicating disapproval of a student's behavior or statements made with a negative or loud tone of voice (Sutherland, Wehby, & Yoder, 2000). Reprimands were coded when given to a child/ren following a demonstrated problem behavior. NONEXAMPLES: A) When the targeted child hits her sister, the parent says nothing. B) When the children are yelling and running, the teacher says, "I am looking for children who are being safe and responsible."

Social Validity Scale

Following the intervention phase, teachers and parents completed a short 5-point

Likert scale survey to measure perceived effectiveness of the intervention. Specifically,

statements addressed the efficiency and helpfulness of the training of teachers in regards

to classroom and targeted child behaviors (see Appendix H for the parent and teacher

versions).

Data Collector Training

Two graduate and two undergraduate students in special education were recruited

and trained by the researcher to collect observational data in both the school setting and

in homes. During the first training meeting, which lasted one hour, all data collectors

were provided with the operational definitions of terms, instruction on completing

observational forms, and modeling of how to complete the observation forms and use of

the interval tapes by the researcher (see Appendix I for written training materials). Data

collectors were asked to visit both Head Start centers to observe three teacher-directed,

large group activities similar to those to be targeted during the study and to practice

collecting data. This gave data collectors the opportunity to become familiar with the use

of interval tapes and to see a range of possible activity types to be observed during the

study. They were instructed to return to the next training session with any questions

regarding use of the tapes, the observation forms, activities observed, and teacher and

student behavior.

During the second training meeting one week later, classroom observations were

discussed and questions were answered. Following the initial experience of general

observation during large group activities, observers practiced data collection by watching

the same videotaped sessions of universal strategy use that teachers had been trained

with, as well as tapes that contained examples of problem and appropriate/on-task

behaviors to be measured. The researcher and observers coded together at Head Start and

with video examples until reliability of 90% was achieved.

To safeguard confidentiality, observers signed a statement agreeing to refrain

from sharing all identifying information regarding participants and research data with

others, and all documents were numerically coded and stored in locked files. Data collectors were shown how to provide teachers with daily performance feedback during the intervention and follow-up phases of the study, as was described earlier.

Interrater Reliability

Interobserver agreement was obtained for school and home observations at each phase of the study by two observers recording adult and child behaviors simultaneously during 40% of all data collection sessions. During reliability sessions, the researcher and one other data collector used the same recorder with an adaptor for an additional headphone to ensure identical detection of timed cues.

Reliability on student behavior data was computed by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. Reliability on adult use of strategies was determined by dividing the smaller number of recorded instances by the larger number of recorded instances to obtain the coefficient of agreement. No additional training and practice were needed, as interrater agreement never fell below 90 percent (see Results).

<u>Design</u>

A single subject multiple baseline design (Kazdin, 1982) was used to evaluate the functional relationship between the intervention and student behavior. This design was chosen to ensure consistent evaluation of changes in the dependent variable (i.e., student behavior) as intervention was implemented across subject dyads. Data were collected through direct observation of adult and child behavior using a 10-second whole interval recording system across the following phases: baseline, teacher training, intervention, and follow-up.

In order to evaluate generalization of potential improved student behavior to the home environment a multiple baseline design was also utilized. Parental strategy use during baseline and follow-up phases and child behavior during all phases of the study were observed during 10-second whole intervals.

Baseline Phase

During baseline parents completed the FQLS and the SSRS described earlier and teachers completed the SSRS. Observational data was gathered during at least five observations in the classroom for adult and child behaviors. It is suggested by Kazdin (1982) that a minimum of 3 to 5 data points is essential during baseline as the functions of this phase are to describe the present level of behavior prior to the start of the intervention and to predict the level of performance if intervention is not provided.

One to two probe observations per week occurred in homes during this phase with one observation made of parental use of targeted management strategies. When intervention began in classroom one with teacher training, weekly probe baseline observations continued in each of the other three classrooms and in homes. The baseline phase was completed across the first four weeks of this study.

Teacher Training and Intervention Phase

After adult use of targeted strategies and baseline performance of child behaviors reached stable trends (i.e., 4 to 1 ratio of negative to positive statements with limited use of precorrective reminders from adults and documented displays of problem behavior from students), training began with teacher one, while the baseline condition continued in the home of student one and in the school setting, and in homes of remaining participants.

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For each teacher/student dyad, the teacher was trained on the use of the targeted strategies as described above.

Daily classroom observations were made during teacher-directed, large group activities three to four times per week and home observations occurred one to two times per week. When a clear pattern was observed with intervention data for teacher one (i.e., improving trend toward use of precorrective reminders at the beginning of large group with a consistent change to a positive to negative ratio of teacher comments), training began with teacher two. This sequence began with teacher one during week two of the study and continued until all four classrooms had received the intervention (through week nine).

Follow-up and Generalization Phase

Upon completion of the intervention phase, follow-up observational data were collected in classrooms. This occurred across seven weeks (from week eight to week 14 of the study). For teachers one and two there were only two follow-up observations each across one week as the Head Start building closed for the summer. Seven observations occurred in the classroom of teacher three across six weeks. For teacher four there were five follow-up observations made in four weeks. Generalization probe observations continued throughout the investigation in homes in order to determine a functional relationship between increased use of positive management strategies with improved child behavior in the school setting and child behavior in the home environment.

Each teacher completed a Post-SSRS and Post-ESP Questionnaires on the children. Parents completed a Post-SSRS, Post-FQLS, and the Post-ESP Parent

Questionnaire. A measure of teacher and parent perceptions regarding intervention usefulness (i.e., social validity) was also completed.

During this phase the investigator completed the classroom preventive practices checklist of the Inventory of Practices for Promoting Social Competence as an observational tool of developmental appropriateness in each classroom following teacher training and intervention.

CHAPTER III

RESULTS

Overview

Results from the investigation are presented in this chapter. Observational data regarding teacher and student behavior were collected and plotted daily and data analysis was completed to assess the functional relationship between increased use of specific positive behavior support strategies and the problem behavior demonstrated by targeted students at school. In addition, data were analyzed to determine if improved child behavior generalized from the intervention setting (i.e., school) to the home environment.

As described in the section to follow, daily data were plotted on a graph for each student and visual analysis procedures were used to assess for variations in trend, level, and variability within and across all phases (Tawney & Gast, 1984). Within each condition, the level, trend, and stability of performance were evaluated. In addition, simple descriptive analysis (e.g., within-phase median and range) was conducted. Pre- and post-treatment scores on measures of teacher and parent rated behavioral symptoms were also compared using descriptive statistics. Results are also presented regarding social validity, performance feedback, and interrater reliability.

Results by Research Question

Question One: Can preschool teachers increase their use of specific universal positive behavior support strategies during large group activities given training and daily performance feedback?

In general, all four Head Start teachers increased use of universal positive behavior supports given training and on-going feedback regarding specific strategies. Detailed outcomes of classroom ratings and observational analysis are provided below.

Pre- and Post-Observations of Classroom Preventive Practices

The Inventory of Practices for Promoting Social Competence was utilized as a measurement of developmental appropriateness of classroom practices prior to and following the intervention phase of this study, and was completed by the researcher during classroom observations which occurred throughout the school day and averaged a total of three hours per teacher. Overall, all four teachers demonstrated increased use of preventive strategies, including those which teachers were trained to use in this study (i.e., verbal feedback and precorrective reminders with transitions). It should be noted that other preventive practices, such as following scheduled routines and promoting ongoing engagement were not discussed with teachers during this study, however all four teachers improved on these subscales following intervention. Scores for the pre- and post-measures are provided in Table 5. When desired skills were observed, teachers were rated with higher points.

Table 5: *Pre-and Post-Intervention Scores on the Inventory of Practices for Promoting Social Competence: Classroom Preventive Practices*

	Teacher One		Teacher Two		Teacher Three		Teacher Four	
SUBSCALE	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
Schedules and routines	12/15	14/15	11/15	15/15	11/15	13/15	11/15	14/15
Transitions	6/12	8/12	5/12	10/12	5/12	10/12	5/12	11/12
Rules and consequences	16/27	19/27	13/27	21/27	13/27	22/27	13/27	26/27
Promoting engagement	24/33	30/33	21/33	30/33	17/33	29/33	23/33	33/33
Monitoring and attention	5/6	5/6	3/6	6/6	3/6	5/6	3/6	6/6
Positive feedback	19/24	21/24	14/24	21/24	12/24	22/24	9/24	23/24
Total points	82/117	97/117	69/117	103/117	61/117	101/117	54/117	10/117
Percentage of possible points	70%	83%	57%	88%	52%	86%	46%	94%

Teacher Use of Precorrective Reminders.

In order to analyze teachers' use of precorrective reminders for expected actions and behaviors across all phases of data collection, percentages were calculated for the number of times precorrection occurred within the first five minutes of observed large group activities. All four teachers increased their use of precorrective reminders at a considerable rate as teacher training was provided. Teacher one gave no precorrective prompts during baseline (0 of 5 observations), however increased her use of precorrection to 74% of 19 observations during the teacher training and intervention phase. Teacher two also used no precorrection during baseline (0 of 5 observations) and increased to

100% of 16 possible precorrective prompts during the training and intervention phase. Teacher three provided precorrection during 1 of 5 baseline observations (20%) and during 17 of 17 large groups during training and intervention. Teacher four increased her precorrection use from 17% during baseline observations (1 of 6) to 89% during the training and intervention phase (17 of 19 large groups). In all four cases, strategy use was maintained or improved during the follow-up phase of data collection at 100 percent of opportunities (range of 2 to 7 observations).

Although use of precorrective prompts at the transition away from large group was not discussed with teachers throughout the study, data was collected to determine if teachers would generalize their use of this strategy. Teacher one had provided no precorrective prompts for the next activity during baseline. She increased use only slightly to 16% (3 of 19 transitions) during training and intervention, and provided no precorrection during two follow-up observations. During baseline, teacher two gave precorrective prompts 3 of 5 times (60% of transitions away from group) and improved usage to 100% during teacher training and intervention as well as two observations during the follow-up phase. Teacher three increased from no use of precorrection during baseline to 88% during training and intervention (15 of 17 transitions away from group) and 100% during seven follow-up observations. Teacher four used no precorrection during baseline followed by an increase to 58% during training and intervention (11 of 19) and a decrease to 40% during follow-up (2 of 5 transitions).

Observational Data: Teacher Feedback

For each teacher use of feedback to students was plotted daily to determine a functional relationship between strategy use by teachers and occurrence of problem

behavior in children. Teacher strategy use was recorded during 10-second intervals and was later converted to rate per minute. Visual analysis for changes within and across phases of data collection during baseline and teacher training and intervention was used. Rates of adult behavior change were also examined for maintenance following teacher training and intervention.

Throughout teacher training and intervention all four teachers increased their use of positive feedback for appropriate behavior to both the targeted students and others in the classroom (see Figure 1) and decreased their use of reprimands (see Figure 2). Specific outcomes are discussed further by teacher.

Teacher One. During baseline a moderate rate of teacher reprimands was displayed per minute with a slightly decreasing trend (range of .13 to .24 reprimands per minute with a mean of .18; see Figure 2). Reprimand use was variable during teacher training yet continued to decrease throughout intervention (range-.00 to .15; mean-.03). Teacher use of specific feedback to any student was nonexistent during baseline (see Figure 1). Following teacher training there were level changes in teacher use of specific feedback for appropriate behavior to the targeted student (range-.00 to.23; mean-.05), although some variability in use was noted throughout intervention, and higher levels of feedback were provided to the whole group or other students (range-.00 to.46; mean-.10) than to the targeted student. Only two follow-up observations were made in this classroom as the school year ended. No reprimands were heard while the mean rate of specific feedback to both the targeted student and other children continued to improve (target student: range-.06 to .10; mean-.08; whole group or other students: range-.10 to.13; mean-.12).
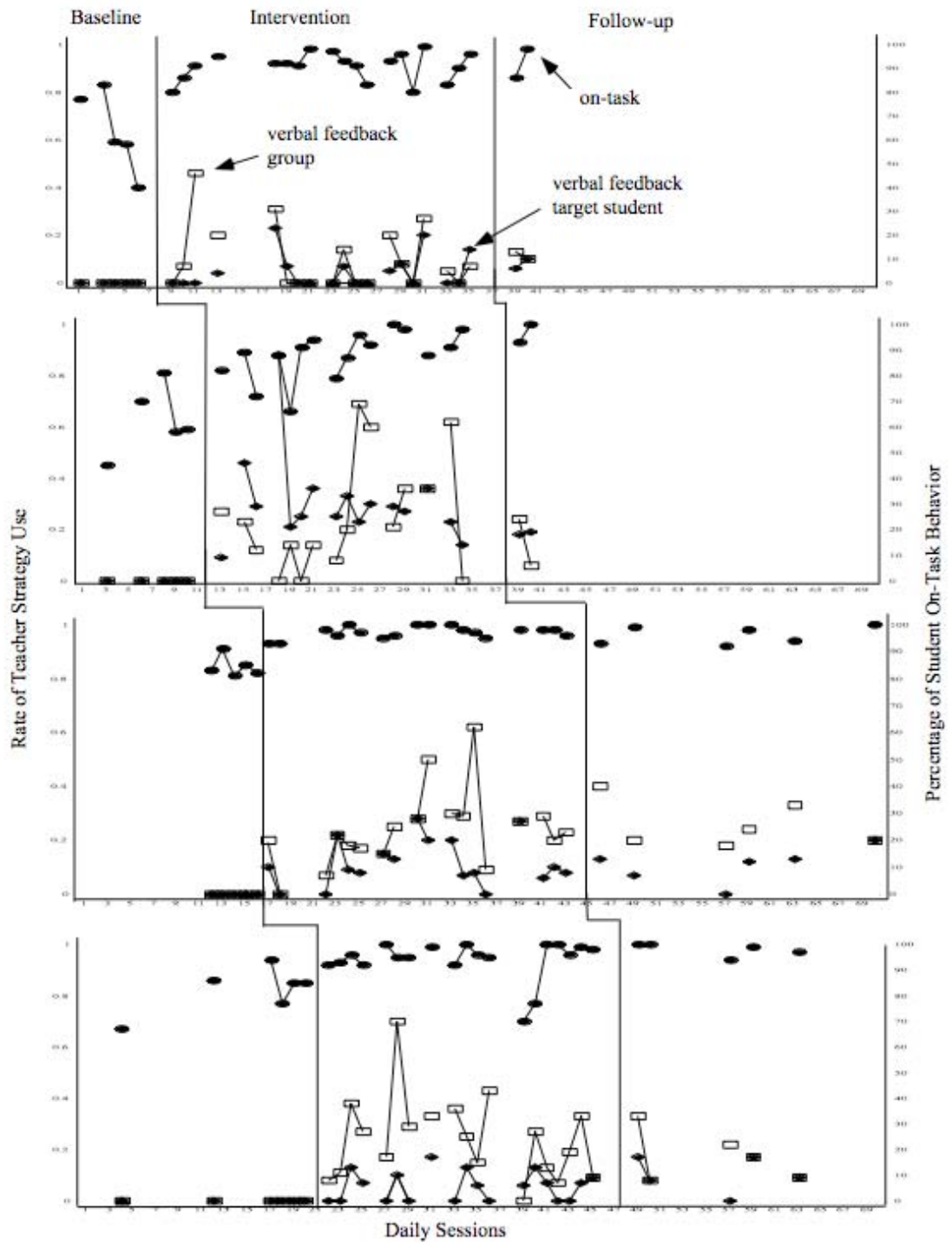
Figure One: *Rates of Teachers' Specific Feedback to the Targeted Student, Specific Feedback to Other Children or the Group, and Percentages of Students' On-Task Behavior*

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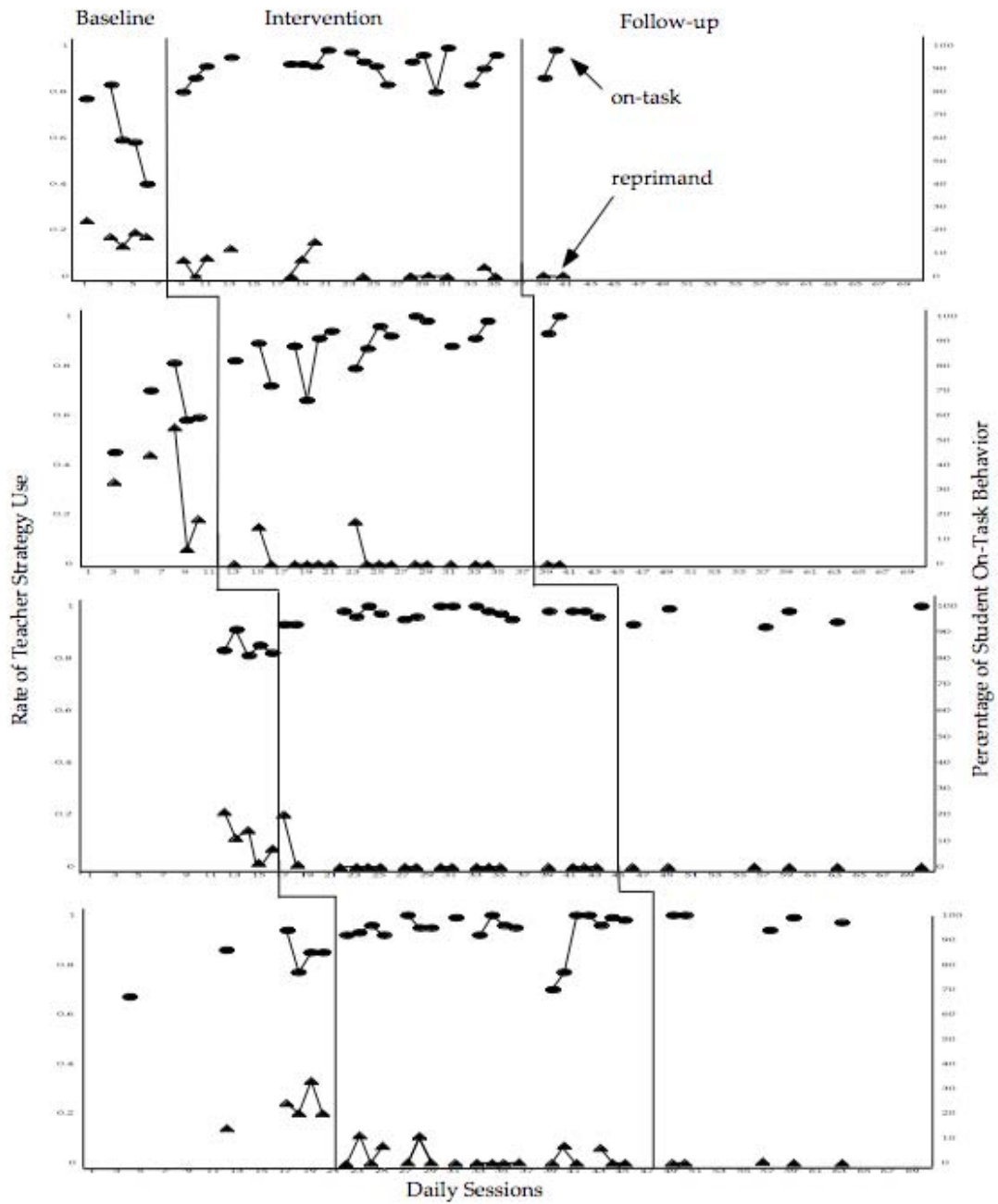
Figure Two: *Rates of Teachers' Reprimand Use and Percentages of Students' On-Task Behavior*

Teacher Two. Teacher use of reprimands was initially increasingly elevated, and then dropped to a moderate rate prior to teacher training (range of .06 to .55 reprimands per minute with a mean of .31; see Figure 2). A clear level change in reprimand use was seen during teacher training and intervention, with few reprimands directed toward students (range-.00 to .17; mean-.02). No use of any specific positive feedback for appropriate behavior was documented during baseline (see Figure 1). Rapid and increasing level changes in the use of specific feedback to the targeted student (range-.09 to .88; mean-.31) and to other children (range-.00 to .69, mean-.25) were observed, with much variability in feedback given to other children or the group. During two follow up observations, no reprimands were heard and specific feedback was used at a lower level than during intervention, however the rates were still moderate and stable for feedback to all student (targeted child: range-.18 to .19; mean-.19; whole group or others: range-.06 to .24; mean-.15).

Teacher Three. No specific positive feedback to students was observed during baseline and reprimand use was at a moderate, yet variable rate (range-.00 to .21, mean-.11). During the intervention phase there was a clear level change in reprimands with evidence of use on only one day during teacher training and then none during intervention (range-.00 to .20, mean-.01; see Figure 2). There were increasing trends in the use of specific feedback to the targeted student (range-.00 to .28, mean-.12) and to other children (range-.00 to .62, mean-.24; see Figure 1), with some variability in both and an overall higher use of feedback to other students or the group as a whole. Six weeks of follow-up observations occurred with no teacher use of reprimands and

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maintained levels of specific feedback to both the targeted student (range-.00 to .20, mean-.11) and other children (range-.18 to .40, mean-.26).

Teacher Four. During baseline, teacher levels of feedback were at zero with an increasing trend in use of reprimands (range-.00 to .33, mean-.19). Once the intervention was introduced there was a clear level change in reprimand use to a very low and stable average rate (range-.00 to .11, mean-.02; See Figure 2). Teacher use of specific feedback toward the targeted student increased with some variability (range-.00 to .17, mean-.06), although the more significant level change occurred in feedback to other children or the group as a whole, albeit with variability in use (range-.00 to.70, mean-.24; see Figure 1). Follow-up probes were taken for four weeks and no reprimands were observed. The mean rate of specific feedback to the targeted student increased (range-.00 to .17, mean-.10) and variability continued to be noted with feedback to the student and others (range-.08 to .33, mean-.18).

Treatment Integrity

Observational data were collected throughout the training period and intervention regarding implementation of strategies during large group activities. Treatment integrity was assured when all four teachers increased their use of precorrection and specific verbal feedback, as specifically defined and observed throughout this study. These changes indicate that participants were altering their behavior as expected.

Question Two: If preschool teachers increase their use of specific universal positive behavior support strategies during large group activities, will targeted problem behaviors of preschool-aged children decrease and appropriate behaviors increase in the school setting?

In general, all four students' behavior improved throughout intervention and maintained during the follow-up phase of this study. Specifically, observations of student behavior during large group activities revealed improvement. Scores on pre-and post-intervention behavior scales completed by both teachers and parents indicated global improvements in student behavior.

Observational Data: Student Behavior

For each student school behavior was plotted daily to determine a functional relationship between strategy use by teachers and occurrence of problem behavior in children. Percentages of intervals of problematic and appropriate child behavior were calculated by totaling each interval containing a targeted behavior, dividing by the total number of intervals, and multiplying by 100. Visual analysis for changes within and across phases of data collection during baseline and teacher training and intervention was used. Percentage of intervals of child behavior change was also examined for maintenance following teacher training and intervention.

As teacher use of positive verbal feedback increased and use of reprimands decreased, the on-task behavior of all four students improved during large group activities (see Figures 1 and 2). These results were maintained during the follow-up phase of this study. Limited aggression, tantruming, and property destruction was observed during any phase with all four students. Specific outcomes are discussed further by student.

Student One. During baseline, there was a clear decreasing trend in percentage of on-task student behavior (range-40% to 83% of intervals, mean-63%) and only one incident of aggression (i.e., pushing a peer) was observed. A clear increasing trend in on-

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task student behavior is evident during intervention (range-80% to 99%, mean-91%; see Figures 1 and 2). No incidences of student aggression, tantruming, or physical destruction were observed following baseline. During two follow-up observations student one maintained a high level of on-task behavior (range-86% to 98%, mean-92%).

Student Two. Baseline data indicated an increasing trend in on-task student behavior, although during the last two baseline observations on-task behavior dropped to just below 60% (range-45% to 81%, mean-63%) and no incidences of negative behavior were observed throughout the study. On-task behavior improved throughout intervention (range-66% to 100%, mean-88%), with some variability observed as this teacher adjusted her use of specific feedback to the targeted student (see Figures 1 and 2). On-task behavior continued to improve during follow-up probes (range-93% to 100%, mean-97%).

Student Three. No serious behavior incidences by the student were observed throughout the study and the percentage of intervals with on-task behavior was high during baseline (range-81% to 91%, mean-84%). Even though this data did not illustrate that the student struggled behaviorally during large group activities, the teacher had identified him as being at-risk for aggressive and maladaptive behavior. His on-task behavior increased and was very high and stable throughout intervention (range-93% to 100%, mean-97%; see Figures 1 and 2). On-task student behavior remained high and stable during follow-up observations (range-92% to 100%, mean-96%).

Student Four. An increasing trend which leveled off was observed in student on-task behavior (range-67% to 94%, mean-82%) during baseline. Minimal observations of aggression were made across all phases of data collection for this student (i.e., one

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incident during baseline and two during intervention). The percentage of intervals of student on-task behavior continued to increase, and remained high and stable except for two days when the teacher reported the student's younger sister was home sick (range-70% of 100%, mean-94%). Student on-task behavior continued to improve during the follow-up phase with a stable level as is demonstrated in Figures 1 and 2 (range-94% to 100%, mean-98%).

Pre- and Post-Intervention Teacher Ratings of Problem Behavior

Social skills checklists and behavior questionnaires completed by teachers were analyzed to determine changes in student behavior between pre- and post-intervention administration. Specifically, ratings were examined for changes from the at-risk category to the normal range of behavior, and for increased levels of demonstrated social skills.

Early Screening Project results. ESP questionnaires were initially filled out by the teachers to determine at-risk behaviors of concern for the children and then again at the end of this study to assess improvement of child behavior on a standardized measure. A T Score of 60 or higher on either of the ESP Teacher Questionnaires indicates potential risk for serious behavioral challenges regarding aggression or maladaptive behavior. For three of the four students, teachers rated both aggression and maladaptive behavior as having improved (see Table 6 for the pre- and post-intervention results).

Table 6: *Pre- and Post-Intervention ESP-Teacher Results*

Student	Aggression Total Score		Aggression T Score		Aggression Percentile Rank		Maladaptive Behavior Total Score		Maladaptive Behavior T Score		Maladaptive Percentile Rank	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
Student One	26	14	80+	57	99th+	77th	33	17	80+	56	99th	70th
Student Two	24	16	80+	63	99th+	89th	29	22	77	64	99th+	89th
Student Three	24	25	80+	80+	99th+	99th+	20	19	60	58	84th	79th
Student Four	30	16	80+	63	99th+	89th	36	23	80+	65	99th+	93rd

Following intervention, teacher one rated student one as having improved from "extreme risk" to "no risk" on aggression and maladaptive behavior. Student two improved from "extreme risk" to "at risk" on both subscales. Student three remained at "extreme risk" for aggression and improved from "at risk" to "no risk" for maladaptive behavior. Student four improved from "extreme risk" to "at risk" for aggression and from "extreme risk" to "high risk" on maladaptive behavior.

Social Skills Rating System results. The preschool teacher version of the SSRS was completed pre-and post-intervention as a measure of student problem behavior in school in order to assess improvement of behavior following intervention. On the social skills subscale a standard score at or above 85 indicates the student has adequate social skills for his age level. For this subscale there is a standard error of measurement of seven at the 95th% confidence level. A score above 115 on the problem behavior subscale

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indicates the student demonstrates more behavioral concerns than other boys his age. The

standard error of measurement is three. All four students were rated as having improved

social skills and three of the four had improved behavior. See Table 7 for the pre- and

post-intervention results. Overall ratings for problem behavior and social skills are

provided.

Table 7: *Pre- and Post-Intervention SSRS-Teacher Results*

Student	Social Skills Total Score		Percentile Rank		Standard Score		Problem Behavior Total Score		Percentile Rank		Standard Score	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
Student One	40	53	63	91	105	120	12	7	91	68	120	107
Student Two	38	42	58	68	103	107	10	5	84	50	115	100
Student Three	31	35	37	50	95	100	9	10	81	84	113	115
Student Four	30	40	34	63	94	105	12	5	91	50	120	100

Note. Social skills SEM-7; Problem behavior SEM-3; 95% confidence level.

Student one had average social skills and more problem behavior than boys his

age prior to the intervention. Following the study he was rated as having more social

skills than others his age and average levels of problem behavior. Student two was rated

with improved, although still within the average range social skills and problem behavior.

Student three maintained average, yet improved social skills and average, however higher

levels of problem behavior. Student four improved from fewer to average social skills

and more to average problem behavior.

Overall, findings from observational data analysis and rating scales indicate that there was a functional relationship between increased use of targeted positive behavior support strategies by Head Start teachers and the improved on-task behavior among the four subjects. In addition, as teachers increased their use of positive supports, the rate of reprimand use decreased without training to do so. Follow-up observations indicate maintained levels of changed behavior for both teachers and students.

Question three: If preschool teachers increase their use of specific universal positive behavior support strategies in schools, will targeted problem behaviors of preschool-aged children decrease and appropriate behaviors increase in the home setting?

In order to determine if outcomes observed at school generalized to the home environment, children were observed one to two times per week during "family time" in the home. All four parents had signed consent to complete these observations, although one family encountered an emergency and only two baseline observations occurred in the home. Another family chose not to follow through with the study in the home environment after two baseline observations. Although both of these mothers had documented concerns with behavior, their children demonstrated reasonably high levels of appropriate behavior in the home during baseline (student three: range-87% to 93%, mean-90%; student four: range-97% to 98%, mean-97.5%).

In the other two homes observations of "family time" occurred throughout the intervention phase. A large majority of observations were of children playing with siblings and other children while parents monitored them. At times mothers engaged in fixing meals, watching television, or reading the newspaper. As teacher one and teacher two increased their use of positive feedback and precorrective prompts (as discussed

earlier), the appropriate behavior of both student one and student two improved in the home. Appropriate behavior in the home (i.e., absence of problem behaviors of noncompliance, tantruming, aggression, or property destruction) of student one was observed to be 85% of intervals during two baseline observations (range-83% to 88%). During intervention at school, appropriate behavior at home increased to an average of 93% across nine observations (range-81% to 100%). For student two appropriate behavior ranged from 83% to 90% of intervals across three baseline observations (mean-86%) and increased to an average of 94% across nine observations during teacher intervention (range-83% to100%).

Pre- and Post-Intervention Parent Ratings of Problem Behavior

Social skills checklists and behavior questionnaires completed by parents were also analyzed to determine changes between pre- and post-intervention administration. Specifically, ratings were examined for changes from the at-risk category to the typical range of behavior and for increased levels of demonstrated social skills.

Early Screening Project Parent Questionnaire results. The ESP Parent Questionnaire was completed pre-intervention to gather information about parental concerns of child behavior and was filled out by three mothers at the end of this study for comparison purposes. As previously shared in Table 2, student one's mother was originally concerned by his activity level. Following the study, she continued to stress that he was overly active, but commented that he was better able to speak in a conversational tone instead of screaming. Student two was described as having difficulties with aggression and anger prior to the study. Following school intervention, his mother reported similar concerns, although stated that the behaviors were less severe.

Student three was angry and emotional and would tantrum and become aggressive according to his mother prior to the study. His mother did not complete the questionnaire following intervention. Student four fought with his siblings prior to intervention. Following the study he was rated as much more gentle and appropriate with other children.

Social Skills Rating System results. The preschool parent version of the SSRS was completed pre-and post-intervention as a measure of student problem behavior at home in order to assess improvement of behavior following intervention. As with the teacher version, a standard score at or above 85 on the social skills subscale indicates the child has adequate social skills for his age level. A score above 115 on the problem behavior subscale indicates the child demonstrate more problematic behavior than other boys his age. One parent did not complete the SSRS following intervention. Two of the other three students were rated as having improved social skills and all three had improved behavior. See Table 8 for the pre- and post-intervention results. Overall ratings for problem behavior and social skills are provided.

Table 8: *Pre- and Post-Intervention SSRS-Parent Results*

Student	Social Skills Total Score		Percentile Rank		Standard Score		Problem Behavior Total Score		Percentile Rank		Standard Score	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
Student One	54	57	70	81	108	113	8	4	68	18	107	86
Student Two	55	51	73	55	109	102	15	7	>98	55	135	102
Student Three	29	-	2	-	70	-	12	-	96	-	126	-
Student Four	68	74	97	>98	129	>130	1	0	<16	<16	<85	<85

Note. Social skills SEM-10; Problem behavior SEM-3; 95% confidence level.
 Dashes indicate the information was not gathered.

Student one had average social skills and problem behavior in the home prior to intervention. Following the study he was again rated as having average social skills and behavior problems, however the scores were improved. Following intervention, student two was rated with lower, although still within the average range social skills. His problem behavior improved from more than other boys his age to the average range. Student three was rated with fewer social skills and more problematic behavior than boys his age prior to the intervention. His mother did not complete the SSRS following the study. Student four improved both in social skills and problem behavior, although he already had more social skills and fewer behavior problems than did his peers.

Question four: Can parents increase their use of specific universal positive behavior support strategies during "family time" in the home given training to do so?

Following intervention at Head Start, one parent was interested in being trained on the use of precorrective reminders and specific feedback for appropriate behavior. The

investigator initially met with student two's mother for 45 minutes while the student was not home to describe the Positive Behavior Support approach used at her son's school and to provide her with identical training materials that were shared with teachers. As with teachers, no discussion was held regarding the reduction of reprimands. During the second meeting, the investigator modeled the preventive strategies with the student and siblings and the mother asked clarifying questions. She was asked to practice strategy use across family activities. The mother reported by phone that she was pleased with her use of the strategies and observations were scheduled in the home.

During the baseline phase of this study two observations had been made of this mother's use of reprimands, precorrection, and specific feedback. She demonstrated moderate use of reprimands (range-.00 to .27, mean-.14), and no use of precorrection or specific feedback for appropriate behavior during baseline. Reprimand use decreased (range-.00 to .10, mean-.03) and feedback use increased (range-.10 to .30, mean-.22) considerably throughout the home intervention (four observations). She used precorrection at the beginning of a family activity one of four times during intervention, and commented that this strategy would take awhile to master as it "felt foreign." As previously discussed, student two demonstrated increasing on-task behavior at home from baseline to school intervention (percentage of intervals with on-task behavior at baseline: range-83% to 90%, mean-86%; during school intervention: range-83% to 100%, mean-94%). His on-task behavior at home continued to improve with implementation of strategies by his mother (range-95% to 100%, mean-98%). No data could be collected of school behavior during this effort, as Head Start had dismissed for the summer.

Question five: Will changes in rates of targeted strategy usage by adults and improved child behavior in the school and home setting result in decreased family stress identified by parents?

For three families, pre- and post-administrations of the Beach Center Family Quality of Life Scale were compared to determine improvement in family interactions, parenting, emotional well-being, and physical well-being. Higher scores for each subscale and total score indicate improved quality of life. As is shown in Table 9, overall ratings went down for two families, indicating decreased quality of life as measured by this scale.

Table 9: *Pre- and Post-Intervention Ratings on the Family Quality of Life Scale*

Student	Family Interaction (of 30 pts)		Parenting (of 30 pts)		Physical/ Material Well-Being (of 25 pts)		Emotional Well- Being (of 20 pts)		Available Supports (of 20 pts)		Total Points/ Percentages (of 125 pts)	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
Student One	25	21	22	24	22	23	12	11	18	17	99 79%	96 77%
Student Two	30	30	28	29	24	25	16	20	20	20	118 94%	124 99%
Student Three	16	-	12	-	14	-	12	-	16	-	70 56%	- -
Student Four	28	26	29	24	24	20	16	16	20	16	117 94%	102 82%

Note. Dashes indicate the information was not gathered.

The only family to receive post-intervention training on how to use the targeted strategies was that of student two. His mother completed the post-measure during the

training. These are the only overall scores that were higher following intervention, although the pre-measure scores were quite high as well. Student three's mother did not complete the FQLS following intervention. Student one's mother expressed concern with her family's interactions and emotional well-being in particular. Student four's mother identified emotional well-being as her biggest concern and her overall score decreased considerably following intervention.

<center>Social Validity</center>

Parent and teacher completion of social validity scales were analyzed to determine perceptions regarding effectiveness of the intervention utilized in this study. Questionnaire results are summarized below by informant and a sample of the scales can be found in Appendix H.

Preschool Teachers.

Teachers were asked to rate six questions on a five-point scale that ranged from "strongly disagree" (1 point) to "strongly agree" (5 points). All four teachers strongly agreed that the strategies were easy to implement and did not require too much of their time, they will continue to use the strategies in their large group activities, and they will use them in other classroom settings. All teachers somewhat or strongly agreed that the training was helpful to learn new strategies for managing their rooms (mean-4.5/5 points), the strategies helped with behavioral difficulties during large group (mean-4.75/5 points), and they feel use of the strategies made an impact on the target students (mean-4.5/5 points). One teacher commented that she noticed a large difference in the targeted student's behavior in that "he behaves appropriately and smiles when she comments on his actions." She also noted that the other children in her class have responded to both

strategies. "Reminding them of behavior expectations for large group has taught them what to do and they do it!"

Parents

Mothers were asked to rate four questions regarding participation in this investigation. Student three's mother did not return the social validity questionnaire. One parent, who allowed only two observations in the home neither agreed nor disagreed with the statement "Observations in my home did not interrupt our family time (take too much time or interfere with things we needed to do)." Mothers from the two homes who participated throughout the study somewhat to strongly agreed that observations did not interfere with their family time (mean-4.5/5 points) and that they wanted to be trained to use the strategies at home (mean-4/5 points). All three mothers reported being completely comfortable participating in the research study (mean-5/5 points). They somewhat agreed that strategy use at school helped child behavior at home (mean-4/5 points).

<u>Interrater Reliability</u>

Interrater reliability was gathered across baseline, intervention, and follow-up phases during school and home observations for this research study. Overall, interrater reliability for homes and schools ranged from 90% to 100% with a mean of 97.24% across 40% of 136 total observations.

At school, a total of 108 observations were conducted across all four teachers. Reliability data were collected for 36% of these sessions with an agreement level ranging from 90% to 100% and an average of 97.44% (i.e., 96% for baseline, 98% for intervention, and 99% for follow-up). Twenty-eight observations occurred in the four homes and reliability data were taken for 57% of these. Reliability agreement ranged

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from 92% to 100% with an average of 97% (i.e., 95% for baseline, 98% for intervention, and 98% for follow-up).

CHAPTER IV

DISCUSSION

<u>Overview</u>

The purpose of this study was to examine the impact of targeted universal

Positive Behavior Support strategies (i.e., precorrective reminders at the beginning and

end of large group activities and specific verbal feedback for the demonstration of

appropriate behavior) on externalizing behavior of preschool-aged students who were

identified by their Head Start teachers as at-risk due to behavior concerns. Specifically,

this study investigated a) if preschool teachers would improve their use of targeted

strategies during large group activities once provided with initial training on the strategies

and while receiving ongoing feedback on their use; b) the relationship between teacher

implementation of the intervention and the behavior of target students; c) if behavior of

target students improved in the home once teachers implemented the strategies at school;

and finally, d) if the intervention positively affected family stress levels as reported by

parents.

To date, most of the literature on the application of PW-PBS in early childhood

programs has been descriptive in nature. This study extends the limited empirical

knowledgebase of the use of universal strategies of PBS with preschool-aged children. It

builds upon previous evidence demonstrating that Head Start teachers believe the use of

universal supports is very important (Frey, Faith et al., 2006; Stormont, Lewis, &

Covington-Smith, 2005), that rates of specific verbal praise among Head Start staff can

be increased through such intervention (Covington-Smith, 2004; Stormont et al., 2006;

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Stormont, Covington-Smith et al., 2007), and that on-task behaviors of preschool-aged children can be increased with this approach (Covington-Smith, 2004; Fox et al., 2005; Stormont, Covington-Smith et al., 2007).

Overall, outcomes of this study included improved student on-task behavior when preschool teachers incorporated the use of precorrective prompts at the beginning of large group and specific acknowledging feedback, indicating a relationship between teacher and student behavior. Teachers indicated that this was an easy intervention to incorporate and that they would use the strategies at other times of the day than just during large group activities. With no direct intervention with students who had been identified as having potential behavior problems, appropriate and on-task behavior increased and maintained throughout the intervention and follow-up phases of this study.

Potential generalization of positively changed behavior for the same children was also examined in homes during teacher intervention. In the two homes where observations were made throughout the study, student behavior improved as teachers continued to utilize the universal support strategies at school. These two mothers somewhat agreed that they felt the school intervention helped with behavior difficulties at home. Following the school intervention the same universal strategies were consistently applied in the home setting by one mother across a short period of time. As she provided specific verbal feedback for appropriate behavior, the student continued to improve behaviorally in the home. These results should be viewed with caution as observations in only two homes and training with only one parent do not provide enough information to empirically state that the intervention alone produced these outcomes.

Outcomes for this study are organized and discussed by research question below. Limitations of the study, as well as implications for practice and recommendations for future research are then presented.

Can preschool teachers increase their use of specific universal Positive Behavior Support strategies during large group activities given training and daily performance feedback? Outcomes indicate that these Head Start teachers could be taught to use specific universal behavior support strategies and maintained their use given daily performance feedback. Following one training session and four daily meetings between the teacher and investigator to discuss refinement of strategy use, all four teachers successfully and quickly altered their instructional behaviors. These results corroborate recent literature demonstrating that specific strategies that are targeted within the PW-PBS approach can be implemented in early childhood settings (Fox et al., 2003; Fox et al., 2005; Fox & Little, 2001; Frey, Faith et al., 2006; Frey, Lingo et al., 2006; Stormont et al., 2006; Stormont, Lewis, & Beckner, 2005; Stormont, Lewis, & Covington-Smith, 2005). This study also supports more specific research in this area related to use of precorrective prompts and specific verbal feedback by Head Start teachers with students who are at-risk for behavioral difficulties (Covington-Smith, 2004; Stormont et al., 2006; Stormont, Covington-Smith et al., 2007).

As was also seen by Covington-Smith (2004), teachers improved overall on demonstration of classroom preventive practices when rated pre- and post-intervention by the researcher with the Inventory of Practices for Promoting Social Competence. As a group, teachers spent more time teaching what expected behaviors and actions for large group were, explaining rules, and reminding students of the classroom routines following

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intervention. Perhaps they realized in order to precorrect for appropriate behavior, they needed to think through this information. Teachers also spent time talking with students more regularly than during baseline, which was a natural extension of their focus on providing positive feedback to students. When teachers are required to spend less time addressing problem behavior and keeping students on task they are potentially able to spend more time on academic instruction.

Throughout teacher training and intervention, data collectors provided written feedback after each observation on teacher use of targeted strategies. Specifically, teachers were informed of whether they had provided a precorrective reminder of expected behaviors and actions within the first five minutes of large group and were told how many times they provided specific acknowledging feedback to the targeted student and to others or the group as a whole. Data collectors also reported the number of reprimands provided, even though reduction in negative statements was not discussed as a goal with teachers during training. It should be noted that, unlike Stormont and colleagues (2007), who measured reprimand use throughout their study while providing feedback on precorrection and praise only and observed moderate changes, in this study teachers were given daily performance feedback on use of all strategies to include reprimands and reprimand use dropped to a nearly nonexistent level for all four teachers.

The present study builds upon previous studies indicating that the provision of regular feedback to teachers on intervention implementation, especially that which is data-based, improves ongoing use of targeted strategies (Noell, Witt, LaFleur, Mortenson, Ranier, & LeVelle, 2000; Noell et al., 2005). In a randomized trial to analyze the essential features of follow-up feedback after intervention, performance feedback

where the teacher was provided with graphic displays of both student behavior change and intervention implementation was statistically superior to conditions where teachers and consultants met to discuss the intervention and ask and answer questions (Noell et al, 2005). In a study similar to the present investigation, Stormont and colleagues (2007) also provided Head Start teachers with daily numerical information about their use of specified strategies for which they had been trained to use.

In the present study, the provision of written performance feedback data to teachers following observations often led to conversations between teachers and the researcher regarding specific strategies. At times, teachers asked for clarification on strategy use or commented on how the strategies were impacting the target students and classrooms. Interestingly, the teacher with the highest level of education (i.e., master's degree in social work) often questioned the researcher about particular incidences where she believed she had provided specific feedback for appropriate behavior and others where she felt she had not given reprimands. Following these discussions, there were often obvious changes made in her behavior to demonstrate the strategies with precision. The teacher with the lowest level of education (i.e., associates degree in early childhood education) requested several meetings to further discuss and practice her use of the strategies.

Observational data was also collected during the transition away from large group, and no performance feedback was provided, to determine if teachers would generalize use of precorrective prompts to other portions of the school day. Even though when later surveyed, all four teachers stated that they would continue to use the strategies and in other classroom settings, observation revealed that this did not occur consistently

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during the transition away from large group. This result is to be expected as it has been

shown that teachers do not likely generalize accurate implementation practices without

ongoing written feedback (Noell, Duhon, Gatti, & Connell, 2002).

This study adds to the literature base on use of two universal PBS strategies in

school settings (e.g., Colvin, Kameenui et al., 1993; Mayer, 1995; Walker et al., 1996).

Further, the present study supports empirical research demonstrating that Head Start

teachers can incorporate PBS strategies in early childhood settings (Covington-Smith,

2004; Fox et al., 2005; Frey, Faith et al., 2006; Stormont, Lewis, & Covington-Smith,

2005; Stormont et al., 2006; Stormont, Covington-Smith et al., 2007).

If preschool teachers increase their use of specific universal positive behavior

support strategies during large group activities, will targeted problem behaviors of

preschool-aged children decrease and appropriate behaviors increase in the school

setting? There has been documentation of several classroom intervention programs that

positively impact the at-risk behavior of young children in early childhood settings such

as Head Start (e.g., Golly et al., 1998; Serna et al., 2000; Serna et al., 2003; Walker et al.,

1998; Webster-Stratton et al., 2001; 2004). The present study further demonstrates this

and extends the more specific research on the implementation of specific positive

strategies at Head Start. Observational data revealed that as all four teachers increased

their use of targeted strategies in the classroom, the on-task behavior of each student

improved, and actually maintained or continued to improve through the follow-up phase.

It should be noted that during this investigation the two targeted strategies (i.e.,

precorrection and acknowledging feedback) were incorporated by teachers

simultaneously, therefore it is not possible to analyze for separate outcomes per strategy.

As well, data was collected on the reduction of reprimands during large group. This too occurred while the more positive strategies were being implemented and it is not possible to indicate which, if any strategy had the most impact on student behavior.

Outcomes from direct observation during large group were supported by the results of pre- and post-intervention administration of the Teacher-SSRS and the Teacher ESP Questionnaires. For all four students, teacher ratings on the SSRS indicated positive changes in social skills from pre- to post-intervention, although only scores for student one and four surpassed the standard error of measure confidence band at the 95th% level. Three of four had improved behavior, with students one, two, and four dramatically surpassing the standard error of measure confidence band. One student's problem behavior score increased by one point (i.e., increase in the standard score of two points although still within the standard error of measure confidence band), yet remained in the average range for a male of his age. All four students were rated as having average social skills and problem behavior following intervention.

On the ESP Teacher Questionnaires, teachers rated three of four students as improving on both aggressive and maladaptive behavior scales following intervention, with students one and two changing from extremely at-risk to having limited risk. Similar to the SSRS results, student three was rated as having slightly higher levels of aggressive behavior following intervention, although his maladaptive behavior dropped from at-risk to no risk, possibly indicating that he could be on task yet at times aggressive. Student four interestingly had the highest overall percentage of on-task behavior as determined through observation, and social skills and problem behavior improved on the SSRS,

however he was rated by his teacher as continuing to have high levels of maladaptive behavior following intervention.

Overall, findings from observational data analysis and rating scales indicate that there was a relationship between increased use of targeted Positive Behavior Support strategies by Head Start teachers and the improved on-task behavior for the four students. In addition, as teachers increased their use of positive supports, the rate of reprimands decreased without training to do so. Follow-up observations indicate maintained levels of changed behavior for both teachers and students. Although, as mentioned earlier, it is not possible to determine which strategy implemented by teachers had the most impact on student behavior, it can be inferred that the use of targeted universal PBS strategies impacted student behavior. These outcomes further support previous investigation demonstrating similar effects (Covington-Smith, 2004; Stormont, Covington-Smith et al., 2007).

If preschool teachers increase their use of specific universal positive behavior support strategies in schools, will targeted problem behaviors of preschool-aged children decrease and appropriate behaviors increase in the home setting? Overall, the findings from observational data and rating scales for two students indicate that as Head Start teachers increased their use of targeted PBS strategies in the school, on-task behavior of these preschool-aged boys improved in the home. Mean percentages of intervals of observed on-task behavior were above 80% for both students during baseline data collection and improved to 93% for student one and 94% for student two during teacher intervention. Descriptive information from the ESP Parent Questionnaire indicated that both parents felt child behavior improved in the home, and this was supported by SSRS-

Parent results which showed both students had improved behavior following the intervention that was well beyond the standard error of measure confidence band at the 95th % level. These results were surprising as it was not anticipated that the impact of such a limited intervention during large group activities at school would generalize to the home environment without undergoing intervention in the home as well.

On the Social Validity Scale completed by both parents following school intervention, each indicated that they somewhat agreed strategy use at school helped child behavior at home. A factor that may have in some way impacted the results was that students saw the researcher and other data collectors at both school and in homes, which may have triggered the thought to behave better. As well, parents may have indicated to children that their behavior needed to improve as they knew the researcher was a behavior consultant who was working to identify support strategies for teachers.

Can parents increase their use of specific universal positive behavior support strategies during "family time" in the home given training to do so?

Only one parent participated in training in the home and no observations could be made of school behavior during this intervention as, unfortunately school ended before intervention could be implemented in the homes of students one and two. In the Head Start center that was in session throughout the summer, one parent failed to complete the study and a second parent completed post-intervention questionnaires only. Family risk factors have been known to keep parents from participating in interventions (Webster-Stratton & Hammond, 1997) and both of these mothers indicated that there were extenuating circumstances that interfered with their participation. Likewise, student one's mother indicated at the beginning of the study and again on the social validity

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questionnaire that she was interested in learning strategies to use at home, although when approached to begin home implementation of the intervention she declined, stating that her family would be too busy during the summer. No conclusions can be made regarding parental use of these targeted strategies in the home setting at this time, although anecdotal reports from one family are promising.

Student two's mother was trained to use the strategies and practiced their use with her family prior to observational data collection. Baseline information had been collected on her use of precorrection, specific acknowledging feedback, and reprimands. As with teachers, a reduction in negative interactions was not discussed as a goal with this mother. Regardless, her mean use of reprimands decreased and positive feedback increased considerably across four observations. She used precorrection during only one of four observations and reported that this strategy "felt foreign" to her.

Will changes in rates of targeted strategy usage by adults and improved child behavior in the school and home setting result in decreased family stress identified by parents? Three of four mothers completed post-intervention Family Quality of Life Scales to determine stress levels regarding family interactions, parenting, emotional well-being, and physical well-being. Overall ratings went down for two families, indicating decreased quality of life as measured by this scale. Student one's mother reported slightly decreased satisfaction with family interactions, emotional well-being, and available supports, although when these scores were discussed with her, she was surprised and indicated nothing had changed. Student four's mother rated all areas as having decreased except for emotional well-being. She was a college student with three children and later reported that school was very hard at the time. It is assumed that a limited intervention

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such as this one can not impact the stress levels or quality of life of families on a large scale.

Student two's mother was the only parent to later participate in training regarding the targeted strategies. She completed the FQLS during the home training and her overall scores improved following intervention. She indicated higher levels of satisfaction with her parenting, physical and material well-being, and emotional well-being. When asked about her answers following all observations, this mother reported that she "felt like a stronger parent having been given some new strategies to try."

<u>Limitations</u>

It is important to address the limitations specific to this research. The first pertains to external validity. Participants for this study were all teachers, students, or mothers involved with Head Start. It is not possible to assume replicable procedures or to generalize results to other early childhood settings. The involvement of fathers, the inclusion of male teachers, or the study of female students may have led to different findings.

In addition, generalization may not be possible to students with observed high levels of problem behavior. In this study teachers were asked to identify students for whom they had behavioral concerns and the pre-intervention scores on the ESP Teacher Questionnaires in particular indicated high levels of concern for all four students. In each case limited or no aggressive or destructive behaviors were observed during large group, even during baseline. Two students had relatively high levels of on-task behavior during baseline (i.e., above 80% of observed intervals). Perhaps further investigation should

occur during more specific periods of the school day that teachers isolate as most troublesome.

A potential limitation could have been that instructional aides from each of the four classrooms attended initial training on strategies as requested by classroom teachers, who indicated that they were looking for new classroom management strategies for use in their classrooms. Although it is certainly positive that teachers wanted staff in their classrooms to understand information shared, instructional aide use of strategies was not observed or documented in any way. It is possible that they did utilize the strategies throughout the day, which may have had an overall effect on child behavior and potentially the study results.

During training, data collectors were asked to visit the actual Head Start classrooms and practice observation procedures during large group times and with teacher subjects to familiarize themselves with activities to be observed and to become fluent with the observation tools. This may have caused observer bias as data collectors could have begun observations with preconceived notions about the teachers, classrooms, Head Start in general, and of potential student subjects, although interrater reliability agreements were high indicating that any bias would have been consistent across the researcher and four data collectors.

Barriers to providing intervention for parents have been identified in the literature and include getting key adults to participate (Assemany & McIntosh, 2002). In this study, parents were informed that data collectors would be in their homes to observe one or two times per week for up to 16 weeks. Even though they each agreed to this, only two mothers were consistently at home during scheduled meetings and after missing several

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appointments, one mother returned no phone calls or written messages. The fourth mother verbally refused continued observation in the home, stating that she was interested yet unable to be involved due to scheduling. She did agree to complete post-intervention questionnaires. It was therefore difficult to analyze the results for research question three regarding the generalization of changed student behavior for all families.

As discussed earlier, dropout rates for parents involved in intervention have been shown to be quite high (Schumann et al, 1998; Webster-Stratton, 1990). In this study half of the four mothers did not allow data collectors to complete home observations. Training on the use of specific strategies could be done at the school and observations could be completed in community settings if parents indicate unwillingness to have others in their homes. A third mother did not participate in the training on targeted strategies after indicating that she was interested in doing so. She had allowed data collectors to be in her home two times per week for eight weeks. If training had occurred at an earlier point in the study, she may have been willing to participate. Perhaps parents could provide insight into what types of support are most viable.

Finally, even though a relationship between teacher and student behavior can be assumed with the intervention applied in this study, it is not possible to separate out the effect of precorrection or acknowledging feedback on outcomes. Also, even though teachers were not asked to reduce the use of reprimands, this was a natural occurrence for all four teachers. The change in ratio to higher levels of positive feedback to lower levels of negative reprimands may have played a large part in the positive results.

Implications for Practice

The current investigation offers several useful contributions for practice. First, for students who are identified by their parents and teachers as at-risk for potential behavioral problems, training concerned parties to utilize preventive measures and teach children appropriate behavior may positively impact their potential negative trajectories toward future problems.

Head Start and other early childhood agencies could find these strategies to be relatively simple to implement. As was shown in this study and previously by Covington-Smith (2004) and Stormont and colleagues (2007), the training time necessary to incorporate these strategies is short and easily applied in situations where staff may not have advanced training in behavior management. Also, minimal feedback is necessary on performance of the intervention for success to be documented, even for teachers who have not received prior instruction on this approach and are identified as low implementers of the strategies. Noell and colleagues (2000) demonstrated that following daily feedback to ensure intervention is being implemented successfully, the frequency of contact can be reduced somewhat while still maintaining implementation fidelity. This is important to consider when addressing the practical necessities for the consultant who potentially has many interventions in place across settings at any given time.

Current results and those found by Covington-Smith (2004) indicate that the implementation of these strategies may positively affect overall classroom management as demonstrated by increased scores on the Inventory of Practices for Promoting Social Competence. The reduction of reprimand use by all four teachers, even though it was not suggested during teacher training, may be a positive result. Teachers benefit from

learning strategies to support young children in their classrooms, those with and without identified behavioral concerns, and report they find this intervention to be an easy and cost-efficient approach to implement. Perhaps when educators implement preventative measures they can spend less time responding to inappropriate behavior and focus their efforts on interacting with students.

For Head Start as an agency, classroom implementation of such strategies within a program-wide adoption of the PBS approach with all students allows for more judicious use of scarce funding and ensures that more costly behavioral supports are spared for students who do not respond to preventive measures and require more intensive supports.

The intervention as applied in this study encourages collaborative relationships between school and home, as is mandated for Head Start (DHHS, 2001), and provides support to teachers regarding behavior, which is increasingly becoming a high priority to Head Start as a whole (Yoshikawa & Knitzer, 1997). A benefit for society is the potential for reduction of school failure and criminal behavior in this small sample of children.

<p style="text-align:center">Recommendations for Future Research</p>

As the approach taken in this study with the population observed is in part a replication of previous investigations (Covington-Smith, 2004; Stormont et al., 2006; Stormont, Covington-Smith et al., 2007) it is appropriate to hypothesize that use of these strategies with at-risk preschoolers is a viable intervention. Future studies should also investigate their use within the application of PW-PBS for larger groups of students (i.e., whole classrooms), with potential for analyzing the impact on discipline conditions in entire preschool buildings. Further analysis should also address the impact of the individual strategies on student behavior. In this study, reprimand use decreased for each

teacher even though they were not asked to do so. Finding out what level of importance this plays on the success of the intervention is relevant at this time.

Another factor from this study that should continue to be examined with teachers of all education and experience levels is the effect of varying performance feedback. Observed data was provided in a written format to all four teachers in this study. In order to determine its importance, the study should be replicated by providing different types and amounts of feedback to subjects (i.e., verbal discussion versus written documentation of data, graphic data representation versus only numbers of behaviors observed, a combination of feedback types, or providing some subjects with no feedback following initial training).

Finally, as early childhood as a discipline encourages the partnership between school and home (DEC, 1999; DHHS, 2001; Dunlap et al., 2001), behavioral training programs have documented the compounded effect of including teachers and parents in intervention (Walker et al., 1998; Webster-Stratton et al., 2001; 2004). Increasingly, more early childhood programs are using PW-PBS in their agencies (Fox & Little, 2001; Frey et al, 2006; Stormont et al, 2005), empirical investigation of parental training in the use of universal PBS supports within an established system of PW-PBS is currently relevant.

<div align="center">Conclusion</div>

Prevention of problem behavior in young children is seen as a significant issue at this time and efforts should be made to intervene in both the school and home environments of these students (Walker et al., 2004). Ideally, a systemic approach that addresses both environments could provide the support needed to curb negative patterns

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of antisocial behavior and provide teachers and parents the tools needed to help keep children on the right track (Dunlap et al., 2006).

The purpose of this research was to consider the impact of teacher use of targeted universal strategies on the behavior of young children during large group activities and in their homes. The findings of this study indicated that when Head Start teachers increased their use of precorrective prompts and specific acknowledging feedback while decreasing the number of reprimands given to students, preschool students displayed higher levels of appropriate and on-task behavior during large group activities. In addition, for two children observed in the home throughout intervention, parents report improved behavior and observational data supported these claims. In one home, child behavior continued to improve when the mother began using the same strategies that the teacher employed in the classroom.

The current research adds to the literature on the implementation of the Program-wide Positive Behavior Support approach in preschool settings by demonstrating that teacher use of universal PBS strategies can impact behavior of students who are identified as potentially at-risk for behavioral difficulties. This study further extends past investigation into the use of these same targeted strategies in elementary schools (Colvin, Sugai et al., 1993; Colvin et al., 1997; Lewis et al., 1998; Nelson et al., 1996; Sutherland et al., 2000) and recently in Head Start programs (Covington-Smith, 2004; Stormont et al., 2006; Stormont, Covington-Smith et al., 2007).

Besides the incorporation of the research-based use of targeted strategies in school settings, written performance feedback was utilized in this study. Results support previous research in that when data-based information about teacher behavior is shared

on a regular basis, interventions are implemented for longer periods of time and with

fidelity (Noell et al., 2005).

APPENDICES

APPENDIX A

Teacher Consent Form

Department of Early Childhood & Elementary Education

University of Missouri- Columbia

December 3, 2007

303 Townsend Hall
Columbia, MO 65211
Phone (573) 882-3741
Fax (573) 884-0520

Dear Head Start Teacher,

You are being asked to participate in a research study designed to help children be more successful in school and to develop teaching strategies to identify and remediate potential learning and behavior difficulties. The program is a joint effort between the Head Start program and the University of Missouri. The program will run approximately 16 weeks and involves the following activities:

1) The investigator will observe you in your classroom across several days for short periods of time as a method to select appropriate participants for this study.
2) If you are selected as a potential participant, you will complete behavior checklists in order to identify children who demonstrate at-risk behavior.
3) Once a student in your classroom has been selected for participation in the study, you will complete a social skills questionnaire about the child. These two questionnaires should not take more than 45 minutes to complete and you will be asked to complete them again after the study.
4) You will participate in training with support regarding research-based behavior management strategies:
    o The investigator will meet with you at Head Start during a convenient time to describe the basic approach and provide instruction in the use of the specified strategies. It may take between 90 and 120 minutes.
    o You will be expected to introduce the approach to all students in your class.
    o The investigator will observe your use of the strategies during 4 large group activities and will schedule a visit with you on each of 5 days for a short period of time (during a natural break for you) to discuss the practice of these strategies and to answer questions.
5) University consultants will observe you and the child participant in the preschool classroom 1 to 4 times each week, for 15 to 20 minutes during large group activities. During the observations, the observers will not direct you or the child in any way.

Confidentiality is assured during the project. Your name will not appear on any data collected throughout the project. In addition, you are free to request that data not be collected by University staff. If you choose not to be observed, it will not affect your relationship with the University of Missouri-Columbia in any way. There are no anticipated risks associated with participating in the described project; however, if you experience any problems through participation, you are free to withdraw from the study at any time. The benefits of participating include improved school performance for children and increased understanding of research-based management strategies for teaching staff.

If you have any questions or would like further information please contact: Becky Beckner at 573-214-3950, ext. 25315 or Dr. Tim Lewis at 573-882-8531. If you have questions concerning your rights as a research subject contact: Research Compliance Office, University of Missouri (573-882-8595).
I agree to participate in this study, and to be observed during implementation of the project as described above. I further understand that agreeing to be observed by University staff is voluntary and that I may request data collection to cease at any time.

_____   _____
        (Participant signature)   (Date)
Teachers - keep a copy of this letter for your records; return the signed form to the investigator.

APPENDIX B

Study Description for Parents

Study Description for Parents

Becky Beckner, who is a Behavior Consultant with Columbia Public Schools, has trained our staff on how to address problem behavior in our classroom and has helped us with supporting many children over the years. She is working on her dissertation at the University of Missouri-Columbia and is going to do some research at our Center.

To begin with, she would like us to complete the Early Screening Project that looks at children's social skills. This is a set of questionnaires that we would fill out and there is a parent questionnaire I would like you to fill out today.

Then, we will select four students to participate further in the study, with your written permission. Your child will not have to do anything different! As the teacher, I will be taught some new strategies for working with all of the children and then Becky and some data collectors will watch me and your child over a few weeks.

Becky and the data collectors will also need to watch your child at your house over a few weeks, too. They will not be working with you or your child during this time.

If you are interested, there may be an opportunity for Becky to teach you these same strategies for use at home at the end of the study.

The **Parent Consent Form** tells you more about the study and exactly what the expectations would be. If you agree to this, and your child is selected as one of the four Becky will observe, your child will be asked to sign the **Children's Verbal Assent Form to Participate in a Research Study**.

If you have any questions about the study, and would like to talk to Becky before signing the consent so that I can fill out the Early Screening Project on your child, Becky can be reached at 214-3950, extension 25325.
Thank you!

APPENDIX C

Parent Consent Form

Department of Early Childhood & Elementary Education

University of Missouri- Columbia

303 Townsend Hall
Columbia, MO 65211
Phone (573) 882-3741
Fax (573) 884-0520

December 3, 2007

Dear Parent(s) or Guardian,

Your child has been selected by his teacher to participate in a program to help children be more successful in school and to develop teaching strategies to identify and address potential learning and behavior difficulties. The program is a joint effort between your child's Head Start program and the University of Missouri. The program will run approximately 16 weeks and involves the following activities:

1) Your child's teacher will complete several questionnaires about your child's social skills before the study begins, and then again after the study is over.
2) You will complete three questionnaires about your child before the study begins and then again afterwards. They should not take more than one hour to complete each time.
3) University consultants will observe your child in the preschool classroom 1 to 4 times each week, for 15 to 20 minutes during large group activities. During the observations, the observers will not direct your child in any way.
4) University consultants will observe you and your child in your home 1 to 3 times each week, for 15 to 20 minutes during regular family routines. During the observations, the observers will not direct your child in any way.
   *One observation early on in the study will be of interactions between you and your child.
   *Most observations will be of your child only.
   *At the end of the study, one more observation will be done of the interactions between you and your child.
5) Once the teacher is trained on how to use new strategies with children in the classroom, you might be asked to learn the same strategies. If so, the investigator would come to your home and train you and provide support on how to use the strategies. If this happens, your use of the strategies will also be observed.

Confidentiality is assured during the project. Your child's name will not appear on any data collected throughout the project. In addition, you and/or your child are free to request that data not be collected by University staff. If you choose not to have your child observed, it will not affect your child's schooling or your relationship with Head Start in any way. There are no anticipated risks associated with participating in the described project; however, if you or your child experiences any problems through participation, you are free to withdraw your child from the study at any time. The benefits of participating include improved school performance.

If you have any questions or would like further information please contact: Becky Beckner at 573-214-3950, ext. 25315 or Dr. Tim Lewis at 573-882-8531. If you have questions concerning your child's rights as a research subject contact: Research Compliance Office, University of Missouri (573-882-8595).

I agree to participate in this study, and for my child, _____
to be observed during implementation of the project as described above. I further understand that allowing my child to be observed by University staff is voluntary and that I may request data collection to cease at any time.

_____   _____
(Parent/guardian signature)   (Date)

Parents - keep a copy of this letter for your records; return the signed form to your child's teacher.

APPENDIX D

Child Assent Form

Children's Verbal Assent Form to Participate in a Research Study

Script for Child Verbal Assent

There will be some new adults in the classroom and at your home over the next few weeks. These people are just watching what things are like at school and home and writing down what they see. They will not ask you to do anything.

You will see them during large group at school and at home for a small amount of time and not every day.

Your teacher and parent are helping us with a study by allowing us to watch you. It will help your teacher. If you have any questions about the study, you can ask your parent or teacher. They can ask us if they do not know the answer.

All you need to do is act like you always do at school and at home.

Your parent has signed a paper saying it is okay to do this study. If you do not wish to be in this study at any time, we can sit down and talk about that. If you think of questions after I leave today, you should ask one of your parents to give me a call so that I can try and answer any questions you have. My phone number is 214-3950.

Are you okay with this? ___ Yes   ___ No

_____   _____
Participant's Name   Date

_____   _____
Study Representative   Date

APPENDIX E

Teacher Training Written Materials

<u>Teacher Training</u>

What is Positive Behavior Support?

Program-wide Positive Behavior Support (PW-PBS) is a preventative approach taken by preschool staff in order to teach appropriate school behavior and to provide a continuum of supports to students who are at-risk for, or who demonstrate chronic behavioral concerns (Lewis & Sugai, 1999; Stormont, Lewis, & Beckner, 2005). PW-PBS is a proactive, system-wide intervention approach which offers specific instruction and ongoing support to teaching staff and flexibility to match the program's philosophy.

Universal supports are utilized by adults with all children in the school setting in order to enhance the learning environment (Walker, Colvin, & Ramsey, 1995). Targeted, evidence-based strategies include: defining, teaching, and practice of consistent behavior expectations in the classroom; precorrection for expected behaviors; and specific feedback on demonstrated behaviors (Nelson, Colvin, & Smith, 1996).

Teaching and Practice of Expectations and Routines
        The direct teaching of expectations and routines includes the discussion and visual displays of what actions are to be taken by children during common school routines, modeling of such behavior, and the physical practice of expected behaviors by students. For example, the teacher announces to the group that they should "use walking feet to be safe in the classroom." The group could list reasons for this action and adults or children could model what using walking feet looks like. Finally, students could practice walking across the classroom using walking feet.

Precorrection
        Precorrection is the stating and/or explaining of an expected behavior, rule, or routine prior to expectation for action to occur (Colvin, Sugai, & Patching, 1993; Colvin, Sugai, Good, & Lee, 1997). Through the use of such planned statements, the goal is to prevent potential problem behaviors from occurring. For example, prior to walking down the hall to the playground, the teacher would stop the students at the classroom door and remind them of specific expectations, such as leaving sticks on the ground on the playground.

Specific Acknowledging Feedback
        Specific acknowledging feedback, or praise, is a positively stated verbal comment indicating approval of an action (Sutherland, Wehby, & Yoder, 2000). Observed behavior is described and paired with the general behavior expectation. These may also be linked to nonverbal gestures such as smiles, high fives, or a thumbs up. An example is: "You are being safe; you are using your walking feet."

Questions:

Initial Meeting:
Discussion of PBS and specific strategies;
Questions and concerns;
Talk about importance of not sharing about the intervention;
Talk about importance of being the teacher in charge of the large group activity;
Explain that data collectors will provide performance feedback (provide folder);
Watch videotapes of examples and nonexamples of precorrection and specific
    acknowledging feedback.

Five Days:
Create classroom materials, if desired;
Use strategies with all students;
Data collectors will observe during large group activities, just as they have been doing;
Share performance feedback after each observation.

Five Visits:
The Investigator will visit the center each day during the teacher's break time to discuss
    the use of strategies, answer questions, and offer feedback.
Remind about not sharing information with others.
Remind about being the lead for large group.
Remind that the data collector will share performance feedback after each observation.

APPENDIX F

Dependent Measures, Purpose and Timeline of Use

Dependent Measures, Purpose and Timeline of Use

Phase of Study	Measure	Purpose of the Measure
Pre- and Post-Intervention (Gate Two)	*The Early Screening Project* (Walker, Severson, & Feil, 1995)	Gate One was completed by teachers to rank three 4-5 year old students with the highest levels of externalizing behavior concerns in the classroom in order to select potential subjects. Gate Two questionnaires were filled out by the teachers to determine at-risk status (T Score at or above 60) for the children. This created a pool of potential student subjects from each of the four classrooms. Gate Two questionnaires were filled out post-intervention by the teachers to assess improvement of child behavior on a standardized measure.
Pre- and Post-Intervention	*ESP Parent Questionnaire* (Walker, Severson, & Feil, 1995)	The Parent Questionnaire was completed by each subject's parent for final determination of study participation. This measure provided a brief assessment of whether the specific behaviors rated as concerning to the teacher were also identified by parents. The researcher used this information in situations where there was more than one possible subject from each classroom as a method of choosing the teacher/student dyad of best fit. The Parent Questionnaire was filled out post-intervention to assess improvement of child behavior.
During Baseline and Post-Intervention	*The Inventory of Practices for Promoting Social Competence* (The Center on the Social and Emotional Foundations for Early Learning, 2003)	The Inventory checklist was used pre-and post-intervention as a measure of developmental appropriateness for each classroom setting.

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During Baseline and Post-Intervention	*Social Skills Rating System: Preschool Version (SSRS)-Parent and Teacher* (Gresham & Elliot, 1990)	The Parent and Teacher versions of the SSRS were completed pre-and post-intervention as measures of problem behavior in children in order to assess improvement of behavior.
During Baseline and Post-Intervention	*Beach Center Family Quality of Life Scale (FQLS)* (Beach Center on Disabilities, University of Kansas, 2003)	The FQLS was completed pre- and post-intervention as a measure of parent stress and satisfaction with life to determine improved status following intervention.
During All Phases	*Direct Observation of Child Behavior*	Targeted child behaviors were observed in the school setting and in the generalization environment (home) during baseline, teacher training, intervention, and follow-up to determine improvement in behavior with implementation of the intervention.
During All Phases	*Direct Observation of Adult Behavior*	Teacher use of targeted strategies was observed during baseline, teacher training, intervention, and follow-up phases to determine a functional relationship between strategy use and child behavior. Parent use of the targeted management strategies was observed in homes during baseline and again during follow-up as generalization of improved child behavior was assessed. It was important to determine if changes in parent behavior may have influenced changes in child behavior.
Following the Study	*Social Validity Scale Intervention Questionnaire-Teacher and Parent*	Post-intervention, teachers and parents filled out a short 5-point Likert-type scale to measure perceived effectiveness of the intervention.

APPENDIX G

Direct Observation of Child and Adult Behavior Tool
with Scoring Sheet and Operational Definitions

Direct Observation Form

CHILD BEHAVIORS

On-Task or Appropriate Behavior: The child participates as is verbally directed through group or individual instructions.

On-task/Appropriate behavior is coded when the child is observed to comply with group or individual behavioral expectations during the targeted group activity, while refraining from off-task behavior, property destruction, and verbal or physical aggressive acts during a **whole** 10-second interval.

At home, appropriate behavior is coded when the child complies with adult expectations during family routines observed.

NONEXAMPLES: A) The teacher tells the group they will dance to two songs and then sit down for a story. The child yells, 'No!" and runs across the room. B) During a board game with Mother and a sibling, the child draws a 'lose a turn' card and tears it up.

EXAMPLES: A) The group is asked to sit crisscross for a story and eyes on the teacher, and the child complies. B) Father tells the child she cannot have a cookie and she says "Okay" and goes back to playing, refraining from yelling, hitting, knocking dishes off the table, etc.

Off-Task Behavior: Lack of obedience with an expected action. This includes actions such as leaving a line or area, lack of participation in actions of a routine, refusals to speak when asked, and/or not changing a behavior (such as touching others or materials that are off-limits to the child), taking materials, or interfering with others.

Off-task behavior is coded when the child is observed to demonstrate such behavior at **any point** during a 10-second interval.

NONEXAMPLES: A) The child walks down the hall with his hands behind his back after the teacher reminds the group of the expectation to not touch materials on the wall. B) At home, Father calls for the child to set the table and she enters the room and asks what she should do first.

EXAMPLES: A) The teacher asks the group to sit down for a story after dancing. The child yells, 'No!" and runs across the room. B) Father asks the child to help set the table and she screams, "No!" and flops on the floor, crying.

Property Destruction: Movement of, or damage to, materials or furniture without having obtained adult permission. This includes actions such as throwing items not belonging to the child in the trash, pulling work off of walls/tables/desks, and turning over furniture.

Property destruction is coded when the child is observed to demonstrate such behavior at **any point** during a 10-second interval.

NONEXAMPLES: A) When sent to sit in the safe spot, the child refrains from knocking materials off the shelves and tearing down posters. B) Father tells the child she cannot have a cookie and she refrains from yelling, hitting, knocking dishes off the table, etc.

EXAMPLES: A) The teacher carries the child to the safe spot and she grabs materials off the desk as they go by. B) The child throws her brother's truck across the room, breaking it.

Aggression: A verbal threat, intimidating body language, or a physical attack on another person. This includes times when a child's body comes into contact with another person in a negative manner (e.g., hitting, kicking, biting, choking, pushing, poking, pulling hair, spitting, throwing things with directional intent, or giving a bear hug/tackle without prior permission). This also includes verbal threats against another person (e.g., yelling directly at someone, whining, vocalizing intent to hurt or kill another, threats to tell on another, or sticking out a tongue at another person) or raising a fist as if to hit, glaring, or sticking out a tongue at another person.

Aggression is coded when the child is observed to demonstrate such verbal or physical behavior at **any point** during a 10-second interval.

NONEXAMPLES: A) When a peer takes a toy, the targeted child refrains from hitting and threatening injury. B) When carried up to bed, the child refrains from hitting Mother.

EXAMPLES: A) The child pushes a peer down the slide. B) The child's brother grabs her candy and she hits him on the arm.

Tantruming: Screaming, refusing to comply, refusing to move/get up, and/or crying. This may occur when given a directive or without apparent provocation.

Tantruming is coded when the child is observed to demonstrate the behavior at **any point** during a 10-second interval.

NONEXAMPLES: A) The group is asked to put toys away and the child does so, refraining from crying and lying on the floor. B) The parent is on the phone for several minutes and the child waits patiently, refraining from screaming and demanding a cookie.

EXAMPLES: A) The child walks away from group, and when called back, screams and flops on the floor, refusing to get up when requested. B) Mother states that it is time for a bath and the child runs to her room crying and screaming.

ADULT STRATEGIES

Precorrection: The adult verbal teaching/explaining (and possible physical practice) of behavioral expectations to be demonstrated by children. This must occur within the **initial 5 minutes** of the targeted activity. There are no researcher specified expectations. These will be described by the adult to the children.

Precorrection is coded as occurrence/nonoccurrence at the start of the targeted group and upon the transition from group to another activity.

EXAMPLE: After the children have sat down for group, the teacher tells them they need to remain crisscross with hands in their lap, eyes on the teacher, and voices quiet until called on.

NONEXAMPLE: The teacher says, "Let's go to the playground" and opens the classroom door. The children run, loudly down the hall and onto the playground.

Specific Acknowledging Feedback: A positively stated verbal comment indicating approval of an action. Observed behavior is described and paired with a general behavior expectation. These may also be linked to nonverbal gestures such as smiles, high fives, or a thumbs up. Specific acknowledging feedback does not include general statements such as, "Good job" or "Wow!"

Specific acknowledging feedback is coded as occurring when given after the targeted child demonstrates on-task/appropriate behavior, or when the whole group or other children demonstrates on-task/appropriate behavior.

EXAMPLES: A) "Children, you are all being safe; you are using your walking feet." B) "Amy, thank you for sharing blocks with your friend; that was very kind."

NONEXAMPLES: A) Children follow classroom rules, and the adult comments by saying "Super!". B) For the first time all week, the targeted child keeps her hands to herself in line and the teacher does not say anything.

Reprimand: A verbal comment indicating disapproval of a student's behavior or statements made with a negative or loud tone of voice.

Reprimands are coded when the given to a child/ren following a demonstrated behavior.

EXAMPLES: A) "Hey, what did I tell you?" B) "Get down now!"

NONEXAMPLES: A) When the targeted child hits her sister, the parent says nothing. B) When the children are yelling and running, the teacher says, "I am looking for children who are being safe and responsible."

Student: _____ Teacher: _____ Date: _____

Observer: _____ Setting: Home / School

Activity:_____

Time Start: _____Time End: _____

Precorrection: specific statements that explain to the children exactly what they are to do before starting a task at large group (or family time). This must happen within the first 5 minutes of the activity. ___ Yes   ___ No

10-second Intervals

	1	2	3	4	5	6
1	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
2	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
3	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
4	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
5	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
6	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
7	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
8	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
9	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
10	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
11	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
12	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
13	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X

14	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
15	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
16	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
17	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
18	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
19	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
20	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
21	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
22	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
23	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
24	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
25	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
26	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
27	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
28	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
29	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X
30	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X	+ -- X

Precorrection: specific statements that explain to the children exactly what they are to do before transitioning to the next activity. This must happen prior to the group leaving the large group area (or home activity). ___ Yes   ___ No

<u>**CHILD BEHAVIORS:**</u>
+ = On task behavior, performing as teacher (or parent) verbally directed in precorrection (for **entire** 10-second interval)

-- = Off task behavior, not performing as the teacher (or parent) verbally directed (observed at **any point** during the 10-second interval)

X = Verbal or Physical Aggressive acts, Tantruming, or Property Destruction; as defined per child--determined at initial selection for the study: _____ (observed at **any point** during the 10-second interval)

<u>**ADULT STRATEGY USE:**</u>
Circled interval = specific verbal feedback given to the **targeted child** for demonstration of appropriate behavior

X through the interval = specific verbal feedback given to the whole group or other children for demonstration of appropriate behavior
/ through the interval = reprimand given to any child or children

<u>**Child Behaviors**</u>
Total number of intervals: _____

Number of intervals of on task behavior: /
Percent of intervals of on task behavior: %

Number of intervals of off task behavior: /
Percent of intervals of off task behavior: %

Number of intervals of aggression, tantruming, or property destruction: /
Percent of intervals of aggression, tantruming, or property destruction: %

****
<u>**Adult Strategy Use**</u>
Length of observation: _____ minutes

Feedback to targeted child-- Total # of occurrences:
          Rate per minute:

 Feedback to other child/ren-- Total # of occurrences:
          Rate per minute:

Reprimands: Total # of occurrences:
          Rate per minute:

Precorrection: For large group- ___ Yes   ___ No
                        For transition-   ___ Yes   ___ No

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APPENDIX H

Social Validity Scale
Intervention Questionnaire-Parent and Teacher

Social Validity Scale
Intervention Questionnaire-Parent

Please circle the number that indicates your agreement with the following statements regarding the intervention completed in the classroom and the observations in your home.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

1. Observations in my home did not interrupt our family time (take too much time or interfere with things we needed to do).

    1   2   3   4   5

2. I felt comfortable while participating in this research study.

    1   2   3   4   5

3. The strategies used at school during this project helped with my child's behavior at home.

    1   2   3   4   5

4. I would like to be trained on how to use the strategies at home.

    1   2   3   4   5

Social Validity Scale
Intervention Questionnaire-Teacher

Please circle the number that indicates your agreement with the following statements regarding the intervention completed in your classroom.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

1. The teacher training I received was helpful in that I learned to use new strategies for managing my classroom.

    1   2   3   4   5

2. The strategies were easy to implement and did not require too much of my time.

    1   2   3   4   5

3. The strategies helped with behavioral difficulties in my large group setting.

    1   2   3   4   5

4. I will continue to use these strategies in my large group activities.

    1   2   3   4   5

5. I feel that the use of these strategies has made an impact on the behavior of the children selected to participate in the study.

    1   2   3   4   5

6. I will use these strategies in other classroom settings (e.g. small group, lunch).

    1   2   3   4   5

APPENDIX I

Data Collector Training Materials

Data Collector Training

First meeting:
1. Have data collectors sign the Confidentiality Statement.
2. Discuss compensation, timesheets (turn in for training too), and availability.
3. Provide operational definitions of child behaviors and adult strategy use to observe (from Observation Tool).
4. Describe teacher-directed, large group activities and family time in homes (below).
5. Discuss examples and nonexamples of all.
6. Provide the data collection tool and discuss how to complete.
7. Model completion of the data collection sheet (headphones, pen on interval, 2 observers during 1/3 of sessions in baseline, intervention, and follow up phases for interrater reliability-90%).
8. Share the interval tapes and how to use them.
9. Provide folder of data sheets, headphones, recorder, tape, batteries
10. Instruct data collectors to complete 3 observations of large group activities in the Head Start Centers over the next week to practice using the interval tapes and to get a feel for the types of activities observed. Data collectors were instructed to return to the next training session with any questions regarding use of the tapes, the observation forms, activities observed, and teacher and student behavior.
11. Schedule 2nd training time.

Second meeting:
1. Discuss school observations.
2. Use videotapes to practice data collection-
   a. Examples of precorrection, reprimands, and specific acknowledging feedback
   b. Nonexamples of precorrection, reprimands, and specific acknowledging feedback
   c. Videotapes of appropriate behavior and inappropriate behavior (noncompliance, aggression, tantruming, and property destruction).
3. Code together to 90% reliability (schedule further sessions if necessary).
4. Explain and show Performance Feedback Sheet/Folders.
5. Create a data collection schedule for study phases.

DEFINITIONS OF OBSERVATION PERIODS

<u>**Teacher-directed, large group**</u> – an activity that occurs daily and is a standard part of each classroom's routine. This group activity is completed in the same location each day and is led by the teacher (participant). At times large group consists of sit-down discussions about the day's activities, the weather/calendar, and the assignment of helper jobs. During other large group activities, the students are asked to stand and sing, dance, or complete finger plays/short plays. The classroom teacher states the expectations for the students and leads the actions.
Observation begins AFTER the transition to the teacher-directed, large group activity and ends following the transition to a new activity. These observations will typically last between 15 and 20 minutes each day.

<u>**Family time**</u> - as observed in the home environment is defined as the child and at least one parent are both in the home for the entire observation period.
Examples include: the parent cooks dinner while the children play at the table, parents read the newspaper and children play in the family room, or parents and children read a book or play a game together.
Particular activities are not prescribed by the investigator.

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