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An Evaluation of the Prevent-Teach-Reinforce (PTR) Model in a Community Preschool

Setting

by

Laura L. Kulikowski

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts  
Department of Child and Family Studies  
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University of South Florida

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## Table of Contents

List of Tables	iii
List of Figures	iv
Abstract	v
Introduction	1
Prevent-Teach-Reinforce (PTR)	5
Method	8
Participants and Setting	8
Child Participants	8
Teacher Participants	9
Setting	9
Materials and Equipment	11
Measures	11
Teacher Implementation Fidelity	11
Child Behavior	12
Social Validity	13
Integrity of PTR Process	14
Interobserver Agreement	15
Experimental Design and Procedures	17
Teaming and Goal Setting	17
Baseline Data Collection	19
Assessment and Intervention Planning	19
Intervention Implementation	22
Generalization	23
Evaluation	23
Results	24
Teacher Implementation Fidelity	26
Child Behavior	26
Generalization	27
Social Validity	27
Discussion	30

References	35
Appendices	41
Appendix 1 Teacher Work Style Survey	42
Appendix 2 Paraeducator Work Style Survey	43
Appendix 3 Work Style Score Comparison Sheet	44
Appendix 4 Developing Short Term Goals	45
Appendix 5 Child Behavior Data Sheet	47
Appendix 6 Functional Behavior Assessment	48
Appendix 7 Hypothesis Development Form	53
Appendix 8 PTR Checklist Intervention Checklist	54
Appendix 9 PTR Teacher Implementation Checklist	58
Appendix 10 Fidelity of PTR Implementation Checklist	59
Appendix 11 PTR Self-Evaluation: Social Validity	60
Appendix 12 Novel Rater Evaluation: Social Validity	62

**List of Tables**

Table 1: Mean Percent of Interobserver Agreement	16
Table 2: Social Validity Questionnaire Results for Teachers	28

## List of Figures

- Figure 1. Percentage of intervals for child target behaviors and percentage of teacher implementation fidelity across experimental phases, routines, and children 25

## **Abstract**

This study evaluated the use of the Prevent-Teach-Reinforce (PTR) model with two four-year-old children in a community preschool classroom. A multiple baseline design across activities was used to assess the teacher implementation of the behavior intervention strategies developed during the PTR team process and the changes in child problem behavior and engagement. Additional measures associated with the outcomes, such as researcher procedural integrity and social validity were assessed. The results suggest that the team of teachers were able to implement the PTR intervention with fidelity, which resulted in a decrease in the children's problem behavior and an increase in their engagement. The PTR process was deemed feasible and acceptable by the teaching staff, and that the child behavioral outcomes were evaluated as acceptable by naïve observers.

## **Introduction**

Challenging behaviors are being noticed in young children at alarming rates. Between 7% and 25% of preschool aged children are qualifying for a diagnosis of oppositional defiant disorder (Conroy, Dunlap, Clarke, & Alter 2005). If these young children do not receive early intervention, they are at greater risk for more severe psychiatric diagnoses, school failure, drug/alcohol abuse, and criminal activities (Coie & Dodge, 1998; Kazdin, 1993; Olweus, 1991; Tremblay, 2000). The literature consistently indicates that early appearing problem behavior in young children is the single best predictor of delinquency in adolescence, gang membership, and adult incarceration (Dishion, French, & Patterson, 1995; Reid, 1993). Young children who have persistent challenging behavior have been found to receive limited instruction and have few opportunities for learning from peers (Arnold et al., 2006). Given the consequences of challenging behavior in young children, it is imperative to prepare early childhood educators to address the children's behavioral difficulties in their programs. It is estimated that 67% of young children in the United States receive services in center-based programs (Innes, Denton, & West, 2001).

Behavioral intervention using Positive Behavior Support (PBS) as a framework has been used with preschool aged children as an effective approach for assisting families, educators, and other caregivers for addressing challenging behavior and teaching appropriate replacement behaviors of children in early childhood settings (Blair,

Umbreit, & Bos, 1999; Blair, Umbreit, Dunlap, & Jung, 2007; Duda, Dunlap, Fox, Lentini, & Clarke, 2004). Positive behavior support (PBS) is often defined as a collaborative process of developing individualized behavior support for children who have persistent problem behaviors. PBS is a multistep approach to developing effective function-based interventions to reduce problem behavior and increase appropriate behaviors (Dunlap et al., 2000). PBS gives priority to social validity and provision of child support in natural daily routines (Carr et al., 2002)

The PBS multistep approach includes developing a team that will often consist of parents, teachers, paraprofessionals, administrators, support professionals, and a behavioral consultant. The consultant facilitates the meetings, guides the team members to determine their roles with the target children, trains the team members on the PBS process, and provides coaching as necessary during implementation of intervention (Dunlap, Hieneman, Knoster, Fox, Anderson, & Albin, 2000). The PBS steps include a functional assessment and hypothesis development. During a functional assessment, structured interviews with parents and teachers and direct observations of child interactions with adults and peers in the context of natural routines are conducted to develop an understanding of the target child's challenging behavior. The functional assessment data is reviewed to hypothesize the functions of the child's behavior (O'Neill et al, 1997).

Once hypothesized functions are determined, team members collaborate to develop a behavior support plan or intervention strategies best suited to reduce the problem behavior and increase alternative or desired behavior. The final step within the PBS model is to continually monitor the implementation of intervention and determine if

alterations are necessary. At this point an evaluation can be made on the part of those involved as to the intervention's effectiveness and suitability to the specific situation.

Although studies on PBS with young children served in community early childhood programs are relatively few, results of the studies suggest that the PBS intervention could successfully be implemented by early childhood educators in collaboration with behavioral consultants, result in a reduction in the children's challenging behavior, increase in engagement in the activities and other appropriate behavior, and promote generalization of intervention to non-targeted routines (Blair et al., 1999; Blair, Fox, & Lentini, 2010; Duda et al., 2004; Stormont, Smith, & Lewis, 2007).

As it relates to social validity, when designing procedures that are to be implemented in a classroom setting Mueller, Edwards, and Trahant (2003) indicate that there is a preference for procedures that are easy to implement and have minimal disruption in ongoing instruction. They suggested that when there are different effective intervention strategies available, the teachers often pick those based on their personal preference and or how their classroom currently functions. Teachers experience burnout trying to meet classroom demands with too little support (Brouweres & Tomic, 2000), and as a result they might be unwilling to implement a new approach or intervention unless they receive support in the process of developing and implementing the intervention (Woolfolk, Rosoff, & Hoy, 1990). Furthermore, teachers may not always be able to implement the intervention with fidelity and generalize the intervention procedures to non-trained routines or activities (Hundert, 2007; Scheeler, 2006). In short, there is a need for studies to develop a feasible and acceptable behavioral intervention model that can be implemented in early childhood settings.

Although the PBS approach using the multi-step process shows promise, it would be difficult for professionals to implement the complex collaborative process of assessment and intervention in early childhood settings without practical tools. In a review of a published PBS training manual, Kincaid and his colleagues (2006) concluded that the content of the manual provided general behavioral information, but did not include all the information needed to provide best practices. The manual failed to provide a clear picture of a complete PBS process, and it was concluded that it would be difficult for practitioners and trainers to use the manual in implementing the PBS process that requires collaborative team building, problem-solving process, and develop comprehensive supports. Recent literature on the use of function-based intervention in schools has found that behavior supports for students with severe problem behaviors often show problems in the following areas (Iovannone et al., 2009): (a) logical connections between FA data and behavior support strategies; (b) clear definitions of target behaviors; (c) accurate hypotheses; (d) identification of replacement behavior; (e) measurement of teacher fidelity; (f) teacher input to the process; and (g) follow-up and evaluation. The literature indicates that current training efforts are not showing success in building the necessary skills of professionals for implementation of function-based intervention.

The current issues with the manualized intervention in schools have significant implications for adapting the function-based intervention or PBS model for early childhood settings. Within and across early childhood settings, there is a great deal of variability in program quality, training and qualification of teachers, and resources available to support the intervention model (Fox & Hemmeter, 2009). This implies that

the application of function-based or PBS intervention model should be focused on developing standardized procedures and materials that are feasible for use by professionals to address the diverse needs of early childhood settings.

### **Prevent Teach Reinforce**

The Prevent-Teach-Reinforce (PTR) model is similar to the PBS model in that it also includes a multistep process focusing on function-based intervention and team collaboration (Dunlap et al., 2009). The PTR model is a standardized, school-based consultation model that has been tested in the kindergarten thru 8<sup>th</sup> grade population by assisting teacher implementation of interventions with students who demonstrate problem behavior and behavioral and social skills outcomes for students (Iovannone et al., 2009). In addition, there is some evidence that this approach may be used as an effective process for children within the preschool aged population (Blair et al, 1999; Blair et al., 2007; Blair et al., 2010). The theoretical and conceptual foundation of the PTR model is aligned with the principles of applied behavior analysis (Carr et al., 2002) and individualized PBS (Dunlap & Carr, 2007; Sugai & Horner, 2002). The behavior support plans developed through the PTR process consist of antecedent manipulation (Prevent), teaching strategies for replacing problem behavior (Teach), and consequence manipulations (Reinforce). The model uses a five-step process (i.e., teaming, goal setting, assessment, intervention including training and coaching, and evaluation) that uses a systematic collaborative approach that helps teachers develop and implement the intervention with the assistance of behavioral consultants and a manual.

In a recent publication the authors describe the process in which school-based teams design and implement individualized behavior support plans for students with

severe behavioral challenges (Dunlap et al., 2010). PTR is currently in the process of being evaluated at two school districts for efficacy, the authors suggest that the preliminary data indicate a significant difference in those students assigned to a comparison group and those participating in PTR (Dunlap et al., 2010).

While the authors have developed this effective standardized method for assisting schools, grades kindergarten thru 8<sup>th</sup>, in developing behavioral interventions, it is necessary to adapt and evaluate the PTR model for use with preschool aged children exhibiting challenging behavior. It is unclear from the school-based efficacy trials whether the same individualized, team-based process will hold true for preschool settings in which younger children are served and early childhood educators have substantially lower levels of training and support than do teachers in elementary schools (Granger & Marx, 1992). PTR includes many steps that the PBS model also incorporates including teaming, behavioral assessments, intervention implementation and evaluation of that implementation. While the approaches of function-based intervention and PBS process have been used with preschool aged children and in preschool settings effectively, future research should evaluate the application of the PTR process for its feasibility in early childhood settings.

Therefore, the purpose of this study was to explore the feasibility of implementing the adapted PTR intervention model in an early childhood program. Specifically, the study addressed the following research questions:

1. Can the early childhood educators implement the behavior support strategies with fidelity and generalize those skills to another student?

2. Will the target behaviors of the children improve when the teachers implement the behavior support strategies with fidelity?
3. Will the PTR process be viewed as feasible and acceptable by program staff, and the child outcome be viewed as acceptable by naïve observers?

## Method

### Participant and Setting

The participants in the study included two children of preschool age served in a community preschool classroom and their lead and assistant teachers. The classroom teachers and center director nominated specific students based on the severity of their challenging behaviors, and each of the children had been exhibiting these challenging behaviors for longer than six months. The children's parents also expressed concerns relating to their readiness for a kindergarten program.

**Child Participants.** Mandy was a 4-year-old girl, who had attended the program for approximately two years. She lived at home with her biological parents and two sisters at the time of the study. She was the middle child. She was a typically developing child who had no known diagnoses. No communication or developmental delays had been noted for this participant. However, Mandy frequently spent time by herself and did not engage in classroom activities with peers. She raised her voice, yelled at both teachers and peers, and hit peers.

Michelle was a 4-year-old girl, who had attended the preschool program for approximately two years. She lived at home with her biological parents and older sister. She was also a typically developing child having no known diagnosis. Her communication and other developmental skills were considered normal. Michelle was a

very active child and had difficulty staying in her assigned seat, keeping her hands to herself (e.g., hitting peers), and yelling at peers and teachers.

**Teacher Participants.** The children's lead and assistant teachers participated in the study. The lead teacher, Danielle, was a 31-year-old female. She recently completed her four-year degree in elementary education at a local university. Her primary internship experience included first and second grade classrooms. She had been with this preschool program for less than eight months. This placement was Danielle's first position post graduation from her collegiate program. She had received no specific training on behavior management or classroom management strategies. During initial classroom visits, it was observed that her classroom did not follow a consistent schedule, and she did not use any form of consistent classroom management strategies. Danielle terminated her position at the school toward the end of the study.

The assistant teacher, Tanya was a 19-year-old female with a high school education. She had been an assistant teacher for over one year and with this particular preschool for five months. Tanya had not received any specific training on classroom management strategies but had expressed interest in receiving the required training to earn her Child Development Associate (CDA) certification. Her prior work experience had been a 1-1 homecare aide for a teenaged child with an autism spectrum disorder.

**Setting.** The study took place in a private community preschool that used the HighReach Learning curriculum. The HighReach Learning curriculum incorporates the latest research on early childhood, including Piaget's Constructivist Theory, Bruner's Theory of Discovery Learning, Bergen's Theory of Play, active exploration, and the most current the National Association for the Education of Young Children (NAEYC)

Developmentally Appropriate Practice Guidelines. HighReach Learning intends to create a balanced, innovative, and interest-driven curriculum for children birth to five (“HighReach Learning”, 2010). The total number of children served in the participating children’s classroom ranged from 8-11. As the school did not require attendance the number of children fluctuated depending on the day. The typical classroom schedule included planned group activities, outdoor play, lunch, quiet time, and free play.

The study took place in the children’s three classroom routines or activities: outside play, transition, and group time in which the teachers had great difficulty in gaining the student’s attention. The classroom (25ft x 25ft) contained long connecting tables, chairs, and learning centers (e.g., home living, science, reading, and writing). The outdoor playground (60ft x 20ft) contained one large swing set, two play houses, a tunnel, bicycles, and a variety of age appropriate toys.

The outside play routine was conducted in the outdoor play yard. Typical activities the children were invited to participate in included a red light/green light running game, riding wheeled toys (e.g. tricycles), and interacting with the playground equipment, which included a wooden jungle gym, house, and a train tunnel. The children were encouraged to play on the playground and interact with their peers for 15 -20 minutes twice per day, once in the morning and once in the afternoon. This study targeted the morning play time. Children were expected to share, take-turns with toys, and wait their turn without the teacher’s assistance.

Transition from outside play to group time was also targeted for intervention, which lasted approximately 10 minutes. During transition, the children were expected to

line up. No instructions or activities were provided to the children during this routine. The teachers would repeatedly say “line up” or call the children by name.

Typical activities during group time included playing games (e.g. UNO, matching), reading books, and interacting with specific materials from the curriculum (e.g. oranges – senses). The typical group activity time lasted approximately 10 minutes. The lead teacher would lead the group time while the assistant provided assistance by helping the children with activities. Occasionally the assistant teacher would lead the activities. The teachers’ classroom management consisted of using verbal reprimands, time-outs, and depriving privileges.

### **Materials and Equipment**

A PTR working manual was used to facilitate the PTR process and was provided to each team member involved. This working manual included all forms, excluding the behavior rating scales, from the published Prevent-Teach-Reinforce instruction manual by Dunlap et al. (2009). A digital video camera was used during baseline and intervention sessions to record teacher implementation of intervention and target behaviors of students. A digital voice recorder was used to record the team meetings to assess the procedural integrity of the PTR process. A task analysis checklist of the meeting components was developed and a research assistant recorded the occurrence or nonoccurrence of each step.

### **Measures**

**Teacher Implementation Fidelity.** To assess the degree to which the teachers implemented the selected intervention strategies with integrity, a task analysis was developed for intervention for each activity, and data were collected on the percentage of

steps completed correctly. Data were collected on the steps that could be heard or observed during actual implementation during the sessions. Seventy-five percent of all sessions in each activity were video recorded. Observers completed a checklist of the relevant steps by reviewing the video recordings. Observers used the checklist to see if the teachers used prevention strategies (e.g., use of clear verbal statement of what the children were expected to do, prompts with clear specific language and calm tone of voice, positive phrasing, frequent positive comments), teaching strategies (e.g., use of script stories), and reinforcement strategies (e.g., contingent praise for alternative behavior and redirection or extinction for problem behavior) during each routine or activity. A total of 12 steps (3-5 steps for each strategy) were developed (see Appendix 9 for PTR Teacher Implementation Checklist developed for Mandy) to measure the teacher implementation fidelity.

**Child Behavior.** All baseline and intervention sessions were video recorded and analyzed to determine the percentage of intervals of the target children's problem behaviors and engagement in the routines or activities. A 10-s partial interval recording system was used to collect data on child behavior. The behaviors were operationally defined during the goal setting as part of the first step of the PTR process.

For Mandy, problem behavior was defined as any occurrence of the following: (a) walking away from a planned activity (greater than 2 feet); (b) screaming or yelling which can be heard from 10 feet away; and (c) hitting or attempt to hit her peers. Mandy's engagement behavior was defined as (a) staying within 2 feet of the designated activity area; (b) using a conversational tone of voice; (c) respecting the personal space (2ft circle) of her peers; and (c) focusing eyes on the teacher or work materials when the

teacher provides instructions (see Appendix 5 for a sample target child data sheet). Definitions of Michelle's target problem behavior and engagement were the same as those of Mandy's except one extra topography of problem behavior: demanding excessive adult attention (more than 2 times per activity) by repeatedly saying the teacher's name, pulling at the teachers arms, or embracing/hugging the teachers (see Appendix 5 for a sample target child data sheet).

**Social Validity.** Measures of social validity were taken by giving the two teacher participants a 15-item questionnaire about their experience perception of acceptance and effectiveness in the PTR process following the termination of the intervention phase. The form was based on a five point Likert-type scale, which was adapted from the Treatment Acceptability Rating Form-Revised (TARF-R; Reimers & Wacker, 1988) and designed to rate their acceptability of the PTR intervention from 1 to 5, with counterbalanced questions (i.e. for some questions 1 indicates acceptability and 5 indicates an unacceptable score). The evaluation form was provided to each teacher and completed individually to avoid any crossover discussion (See Appendix 12 for the Self-Evaluation Form).

In addition to the social validity assessment by the teachers, the social validity of the PTR intervention was also assessed by two novel observers: one father of two children, one of whom was a 4-year old boy and one female early childhood educator who was unfamiliar with the target children. The father did not have any experience receiving parenting or behavior training. The teacher had been working at another community preschool in the area and had not received any training on classroom management or behavioral training. They were asked to view videotaped sessions of the

target children and teaching staff during baseline and intervention conditions and then complete a rating scale based on their impressions of the teacher's and target children's behaviors. Sessions from baseline and intervention were shown in random order. Two four-minute segments from baseline and two four-minute segments from intervention were randomly selected to review. The researcher explained the rating scales to the individuals and specified who the target child was. After viewing each videotaped session the individual then completed a rating scale about acceptability of the child and teacher behaviors. The rating scale consisted of six items, rated on a 5-point scale (see Appendix 13 for naïve observer social validation rating form).

**Integrity of PTR Process.** To assess the degree to which the components of the PTR process were implemented with integrity as planned, data were collected by two independent data collectors on the implementation of PTR steps. Each session of the researcher with team members and teachers was audio recorded. Observers used the PTR integrity checklist (see Appendix 10 for procedural integrity check list) to see if the researcher addressed all steps necessary during each team meeting.

During the first team meeting the researcher was to provide a welcome statement, introduction of the team members, provide an overview of the process with meeting goals, use and explain the teaming worksheets and explain the baseline data process and timeline. During second meeting the researcher was to use and explain the functional behavior assessment checklist and summary table, review the baseline data and hypothesis and finally to use and explain the PTR intervention checklist. During the third meeting the researcher and team were to develop the intervention plan, made and explained the training checklist and took fidelity of the teacher's implementation. During

the final meeting the researcher was to discuss the intervention data and request teachers to complete the social validity measures. Percentage of procedural integrity was computed by dividing the number of steps addressed by the total number of steps in each session. The results indicated that the researcher completed all steps at 100% during each meeting.

### **Interobserver Agreement**

Interobserver agreements (IOAs) were assessed for implementation fidelity, child target behaviors, and procedural integrity measures. IOA for implementation fidelity was conducted for 35% of the sessions. IOA was measured by having two observers independently watch the video-recorded sessions and record if the teachers were using each of the intervention steps or the child target behavior occurred during each interval. Both observers were master's students in the Applied Behavior Analysis Program. An agreement of the occurrence of an intervention step was defined as both observers recording that the step was either not completed (no) or completed (yes) during the activity. IOA was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. The mean IOA for teacher implementation fidelity was 100%.

IOA for children's target behaviors was calculated for 35% of baseline and intervention sessions. To conduct IOA, two observers (researcher and a graduate student in the ABA master's program) independently viewed videos of target children's interactions with adult and peers for occurrences of the target behaviors. An agreement of the occurrence of a target behavior was defined as both observers recording that a target behavior occurred within the same interval. IOA was calculated by dividing the

number of agreements by the number of agreements plus disagreements and multiplying by 100. IOA for teacher implementation fidelity was an average of 100%. IOA for child behaviors was an average of 91.23% (range of 75 to 100%). Table 1 shows the IOAs across phases, participants, and target behaviors.

Table 1. *Mean percent of interobserver agreement.*

Phases	Lead	Assistant	Mandy		Michelle	
	Teacher	Teacher	PB	EB	PB	EB
Baseline	100	100	98 (93-100)	98 (93-100)	93 (75- 100)	93 (75-100)
Intervention	100	100	100	100	100	100

*Note.* Mean (range). PB: problem behavior and EB: Engagement behavior

IOA for measures of procedural integrity was also conducted for 100% of the sessions. IOA was measured by having two observers independently listen to the audio-recorded sessions and record if each PTR step occurred during meetings. Agreement and disagreement over the occurrence of a PTR component in each step was scored. IOA was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. IOA for researcher procedural integrity was 100%.

## **Experimental Design and Procedures**

A concurrent multiple baseline design across activities (e.g., group time, playground, transitions) with an assessment of teacher generalization of intervention strategies to another child was used to assess the PTR intervention's effect on the teacher and child target behaviors (Kazdin, 1982). Baseline data on the challenging behaviors that each target child exhibited, as well as data on the target child's engagement behaviors were gathered until levels of these behaviors stabilized. The team building, goal setting, functional assessment, intervention development and implementation and then the final evaluation were completed over the course of this study.

### **Teaming and Goal Setting.**

An initial meeting was conducted to implement the PTR Steps 1 and 2 (Teaming and Goal Setting), which lasted approximately 34 minutes. Before the initial team meeting, the researcher made three classroom visits to gather initial information on the current classroom practice and target children's behavior. During these observations it was noted that the classroom did not follow specific schedules, the teachers were both new to the classroom and had not worked together for very long and many of the children in this class could have benefitted from individual behavior interventions or overall better classroom management strategies.

At the meeting the PTR intervention team for Mandy was formed. Mandy's team included both of her classroom teachers and the researcher. During this meeting, the researcher provided an overview of the PTR process, an explanation of the materials provided from the published PTR manual. The teachers completed Work Style Survey and the goal setting form in collaboration with team members and then participated in a discussion of the timeline for baseline data collection and the next PTR steps to be implemented was conducted.

The lead teacher completed a work style survey (see Appendix 1 for the Teacher Work Style Survey), which provided information on her work beliefs and information on how and what she expects from paraeducators. The assistant teacher completed the paraeducator work style survey (see Appendix 2 for the Paraeducator Work Style Survey). A review of both educators' answers was conducted (see Appendix 3 for compiled answer sheet). The purpose of completing these work style surveys was to help the team members develop a communication regarding their work styles. Both teachers participated in a discussion regarding areas they had in common including their preference for a written work schedule, both preferred explicit directions, and taking on challenges. They also discussed their differences, which include morning vs. afternoon person, beliefs on the flexibility of a work schedule, and preferences on touching other's things.

The team completed the goal-setting form for Mandy's broad behavioral and engagement goals and were clearly defined so that each goal was observable, measurable and would provide the most impact in the child's life (see Appendix 4 for the completed Goal-Setting Form for Mandy). During this time, the teachers were also encouraged to

develop goals for Michelle. The teacher's broad goals for both children included that they would actively participate in all scheduled activities. The goals for decrease included walking away from a planned activity and decrease placing demands on, yelling, hitting, or touching her peers. In order to decrease these challenging behaviors the teachers determined that the children should stay within 2 feet of the designated activity area, use a conversational tone of voice, eyes would be focused on the teacher and/or work materials, and they would respect the personal space (2ft circle) of their peers.

### **Baseline Data Collection.**

Following the initial meeting, baseline data on the teacher implementation of steps within behavior support strategies and target children's problem behavior and engagement were gathered across routines until the levels of these behaviors showed an increasing/decreasing trend or became stable. Baseline sessions consisted of usual activities (i.e. group time, transitions, and playground) and instructional procedures. Whenever a child engages in problem behavior, the teachers continued with their current management strategies (i.e. call the child's name, yell, reprimand, or time-out). Baseline data was collected daily, 5-10 minutes in duration (an average time for each routine). Duration of data collection during transition routine occasionally lasted less than 10 minutes.

### **Assessment and Intervention Planning.**

During the second team meeting, the team members participated in the PTR Step 3 (Assessment) and Step 4 (Intervention Planning). The meeting lasted approximately one hour (35 minutes for assessment and 25 minutes for intervention planning). They completed the functional assessment forms (FBA), and developed hypotheses based on

their findings. The FBA provided situations or circumstances that increase the occurrence of challenging behaviors during the targeted three routines or activities. Based on the FBA results, the teachers hypothesized that when the teachers placed demands and/or the activity required interactions with peers, Mandy would engage in problem behavior to delay demands or to get attention from both her peers and teachers. During group and play time, Mandy often engaged in off-task behavior and aggression which resulted in teacher reprimand. When teachers demanded Mandy to complete tasks during group time and transition, her prolonged problem behavior delayed the task demands. It was found that the classroom teachers rarely provided positive reinforcement contingent upon Mandy's engagement in appropriate engagement and interaction. (See Appendix 6 for the Functional Behavior Assessment Forms and Appendix 7 for the Hypothesis Development Forms).

Upon the completion of the assessment, the team participated in the PTR Step 4 (Intervention Planning). They selected strategies from each of the Prevent-Teach-Reinforce menus. Although providing choices and curricular modifications were discussed, the strategies selected by the teachers focused on adult verbal behavior (e.g., use of clear verbal statement of what the children were expected to do, prompts with clear specific language and calm tone of voice, positive phrasing, and frequent positive comments). The strategies were perceived as being easy to implement and would accommodate the competing demands on teaching staff, considering recourses available to implement the plan. A total of four steps were developed within the prevention component: (1) preparing the child for activity for transition by providing a clear statement of what they were expected to; (2) going over to the child and provide verbal

prompt to initiate the activity or routine, using clear language; (3) reminding the child of the routine expectations using positive phrasing; and (4) providing frequent positive comments on the child's engagement in the activities or routine (see PTR Teacher Implementation Checklist in Appendix 9 for specific definitions of each step).

The teachers selected the use of script stories for teach component of intervention in collaboration with the researcher. They determined that the use of script stories would be an easy way to teach the skills they wanted them to learn. Four different script stories were used which focused on teaching personal space, how to ask for help, talking about emotions, and following rules in school. The stories were to be read daily to students at the beginning of group activity time, and the teachers prompted individual children to use the skills learned through the stories during each target routine. The teachers required a prompt by the researcher via cell phone text to read the stories daily. A total of five steps were developed for the social script strategy: (1) reading the first story, (2) asking the children if there were any questions, (3) reviewing a second story, (4) asking the children if there were any questions, and (5) thanking the children for reading the stories together. Data were included in the group routine scores.

Finally, the reinforcement intervention selected was to increase the ratio of positive to negative responses and withdraw reinforcement for problem behavior. During the selection the teachers recognized that they rarely made positive comments to the children including Mandy during any of the daily routines. Three steps were developed for the reinforcement component: (1) providing verbal complement upon the child's engagement and initiation or attempt to comply with directions; (2) reminding of class rules or routine expectations upon the child's attempts to use the problem behavior; and

(3) being calm, temporally withholding the activity or attention while ignoring problem behavior.

### **Intervention Implementation.**

The researcher provided a 45-minute training to teachers (including written instructions, modeling, rehearsal and feedback) on the specific skills selected in the intervention. The length of the training was determined by the interventions selected and the steps determined through the task analysis. If a teacher did not show they could implement the intervention procedures with greater than 80% accuracy during their first two sessions an additional coaching session would have been provided, however this was not necessary during this study. Both the lead and assistant teachers participated in implementing the intervention strategies. As shown in the graphical data in Results, the lead teacher implemented the intervention during the first target routine, outside play. The staff were able to implement the intervention during the outside play routine in only two sessions due to the heat and possible risks to the children. Implementation of the intervention by the lead teacher was discontinued toward the end of intervention phase due to termination of her employment at the program. Data on the lead teacher implementation fidelity during transition and group times and during the generalization sessions were collected in only one session.

During the intervention phase, the researcher provided feedback on the teachers' implementation of intervention steps and reviewed child progress data with the teachers on a daily basis after each routine. The researcher provided them with a checklist of strategies displayed correctly or missed during that routine. The feedback meetings were approximately 5 minutes.

**Generalization.**

Upon completion of each PTR step, the teachers were encouraged to implement the PTR process with non-target child, Michelle. They defined Michelle's target behaviors, assessed Michelle's behavior using the functional assessment checklist provided and developed hypotheses, and developed and implemented intervention strategies. The teachers chose group time as the target routine for Michelle. As described in the target behaviors and intervention development sections, the behavioral goals and intervention strategies developed for Michelle were almost the same as those developed for Mandy due to the similar problem behaviors and their functions. The researcher reviewed the hypotheses and strategies developed for Michelle by the teachers, but did not provide any coaching or feedback to the teachers during intervention. Generalization data were collected throughout the experimental phases to investigate teachers' use of the intervention strategies with Michelle.

**Evaluation.**

After each teacher was able to implement the selected interventions with 80% or greater accuracy and the children's behavior's trend was in the desired direction, the researcher faded all feedback. The team members held a final meeting for implementing the PTR Step 5 to review the intervention results and make decisions about future steps. The teachers also completed social validity forms at that time. The meeting lasted less than 10 minutes.

## Results

Figure 1 presents data on the use of PTR strategies by teachers across target routines for child participant Mandy and generalization assessment with Michelle in one routine. During baseline sessions, teachers only used a few of the PTR intervention strategies, after receiving training on the strategies they increased their use of PTR strategies to above 80% across all activities with Mandy and effectively used the selected strategies with Michelle. The data shows that Mandy's challenging behavior was consistently at high levels and engagement at low levels during baseline, and upon intervention those behaviors clearly reversed. Michelle's challenging behaviors were variable during baseline and upon intervention her engagement increased and challenging behaviors decreased. The data show evidence that teachers generalized their use of PTR strategies to the untrained child in a group routine.

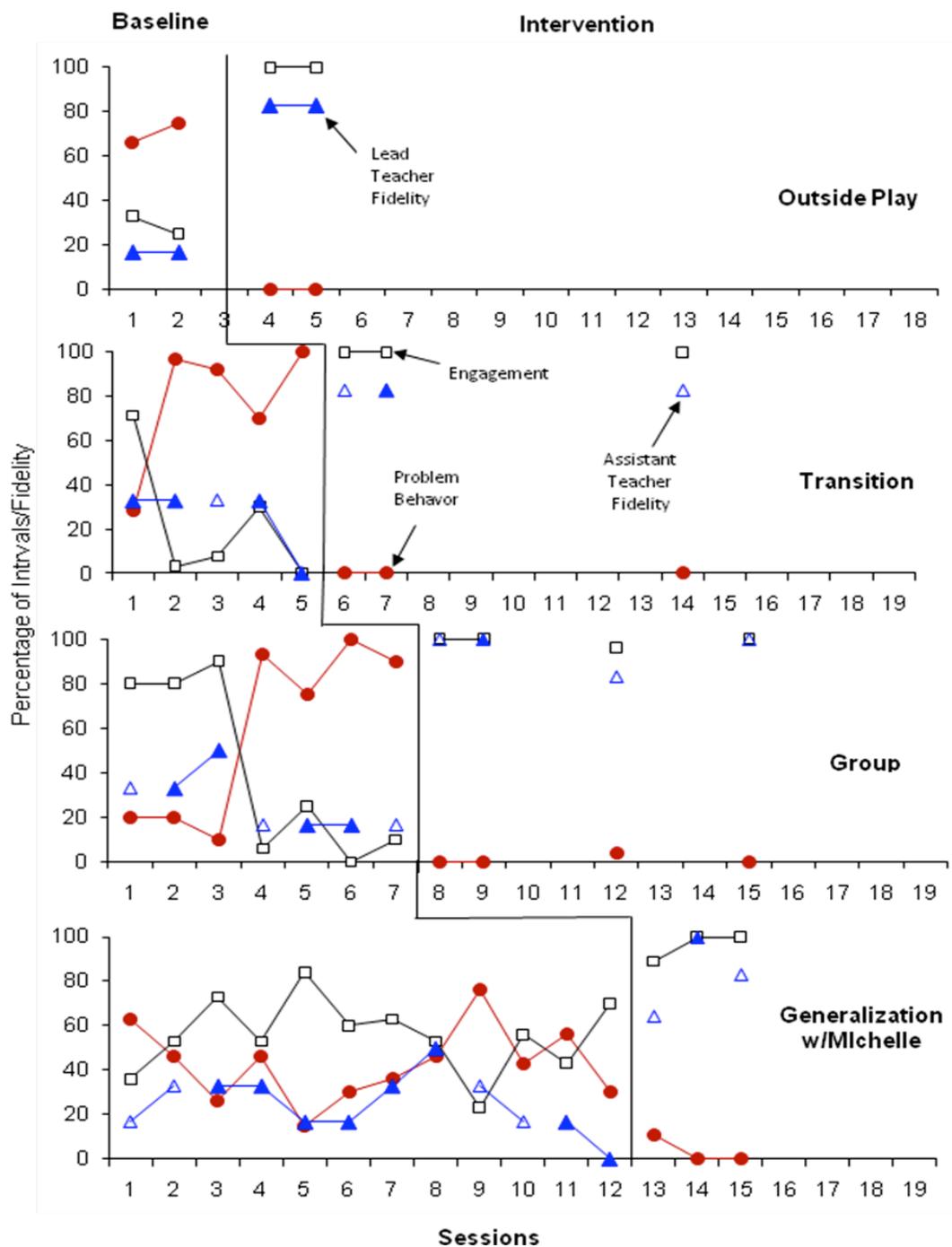


Figure 1. Percentage of intervals for child target behaviors and percentage of teacher implementation fidelity across experimental phases

### **Teacher Implementation Fidelity.**

During baseline the teachers' use of intervention steps averaged 16.7% in the outside play routine. During intervention the average use of the intervention steps increased to 83%. During the transition routine the teachers used 26.4% (range of 0 to 33%) of the steps in baseline. During intervention their implementation of the steps increased to 83%. During the group routine the teachers used an average of 26.1% (range 16.7 to 50%) of the intervention steps in baseline. The average use of the intervention steps increased to 95% (range 83 to 100%) during intervention.

### **Child Behavior.**

During baseline Mandy's challenging behavior averaged 70.5% (range of 66 to 75%) of intervals while engagement was 29% (range of 25 to 33%) during the outside play routine. During the intervention phase her challenging behavior immediately decreased to 0% and her engagement increased to 100% of intervals. During baseline the Mandy's challenging behavior averaged 77.4% (range of 28.6 to 100%) of intervals while engagement was 22.5% (range of 0 to 71.4%) during the transitions routine. During the intervention phase her challenging behavior decreased to 0% and her engagement increased to 10% of intervals. During the group time, Mandy's challenging behavior averaged 58.3% (range of 10 to 100%) of intervals while engagement was 41.6% (range of 0 to 90%) in baseline. During the intervention phase her challenging behavior decreased to 1% (range of 0 to 4%) and her engagement increased to 96.3% (range of 96 to 100%) of intervals. Mandy's problem behavior was virtually terminated in all target routines as soon as the intervention was implemented and remained stable throughout the

intervention sessions. Her engagement behavior showed a marked increase in the levels and was stable across sessions.

### **Generalization.**

Generalization data showed that during group activities, both teachers implemented the intervention with fidelity for Michelle. As shown in Figure 1, the teachers used 25% (range of 0 to 50%) of the intervention strategies in baseline, and their use of strategies increased to an average of 82% (range of 64 to 100%) in intervention during the group routine.

Michelle's challenging behavior was 42.8% (range of 15 to 76%) of intervals during baseline. However, her problem behavior decreased to 3.6% (range of 0 to 11%) during intervention. Her engagement behaviors increased from 55.6% (range of 23 to 84%) during baseline to 96.3% (range of 89 to x100%) during intervention.

### **Social Validity.**

During the last team meeting the teachers were asked to complete a social validity questionnaire. The ratings on the social validity rating scale by the two teachers showed that the levels of teacher acceptability of the intervention were high. The overall ratings of acceptability and satisfaction with the PTR intervention process were relatively high, with a mean of 3.7 (range = 3-5) by lead teacher and 4.5 (range = 3-5) by assistant teacher. The ratings by the assistant teacher were higher than the ratings by the lead teacher. As shown in Table 2 Both teachers responded that they were very willing to carry out the behavior plan and change the routines in order to carry out the plan. Both teachers responded neutrally to there being disadvantages to following the plan and their observing any undesirable side effects as a result of the behavior plan. The lead teacher

responded that the behavior plan was somewhat effective in reducing problem behaviors, she was somewhat likely to continue implementation of the procedures, the interventions were somewhat effective in teaching the child appropriate behaviors, and that the goal of the intervention somewhat fit with the team's goal for improvement of the child's behavior. The assistant teacher felt more strongly in the positive sense for each of the lead teacher's responses.

Table 2. *Social validity questionnaire results for teachers.*

	Head Teacher	Assistant Teacher
1. Given the child's behavior problems, how acceptable did you find the PTR behavior plan?	5	5
2. How willing were you to carry out this behavior plan?	5	5
*3. To what extent were there disadvantages to following the behavior plan?	3	3
*4. How much time was needed each day for you to carry out the behavior plan?	3	4
5. To what extent do you think the behavior plan was effective in reducing problem behaviors?	4	5
6. Do you feel that following this plan will result in permanent improvements in the child's behavior?	3	5
*7. How disruptive was it to carry out the behavior plan?	3	4
8. How much did/do you like the procedures used in the behavior plan?	3	5
9. How likely is it that you will continue to implement the procedures in the plan after this research is terminated?	4	5
*10. To what extent did you observe undesirable side effects as a result of the behavior plan?	3	3
*11. How much discomfort did the child experience during the behavior plan?	3	4

12. How willing were you to change routines in order to carry out the behavior plan?	5	5
13. How well did carrying out the plan fit into your current routines?	4	5
14. How effective was the intervention in terms of teaching the child appropriate behavior?	4	5
15. How well did the goal of the intervention fit with the team's goal for improvement of the child's behavior?	4	5

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Note: \*Reverse score items (i.e., 2 becomes 4)

The social validity ratings by naïve observers (a father of a preschool aged child and an early childhood educator) showed that both naïve observers rated the participating children's behaviors as relatively being unacceptable and the teachers appeared to be having a difficult time in the routines. However, they responded that during intervention the children's behaviors were relatively acceptable and the teachers appeared to be comfortable in the routine, and that the children were participating in the routine appropriately. The parent also felt that the teachers were comfortable, using practical procedures, and their strategies appeared to be working. Overall ratings by the teacher were 1.6 for transition and 2.5 for outside play in baseline, the ratings were 3.6 for transition and 5.0 for outside play in intervention. The ratings by the parent were 2.5 for both routines in baseline and 3.6 for transition and 4.7 for outside play in intervention.

## Discussion

The purpose of this study was to examine the feasibility of implementing the PTR intervention with two preschool aged children in a local community preschool classroom. As anticipated this study provided the expected results. The teachers of the participating children were able to implement the PTR intervention with fidelity, which resulted in improvement in the target children's target engagement and problem behaviors. The PTR process was evaluated as feasible and acceptable by the teachers, and that the child behavioral outcomes and teacher's use of the strategies were evaluated as acceptable by naïve observers. In addition, there was some evidence that the teachers generalized the PTR intervention to an additional child (Michelle), creating the collateral effects of intervention with the Michelle. Both Mandy and Michelle were able to successfully engage in activities, following teacher directions; significant changes in their behavior over time were noticeable.

The data from this study have extended the current PTR evaluation by Dunlap et al. (2010) in elementary schools by using the PTR process with preschool aged children. This study allowed for application and evaluation of the PTR model in a preschool setting. The findings from the current study support the use of function-based intervention and Positive Behavior Support (PBS) in the community early childhood settings (Blair et al., 1999; Blair et al., 2010; Duda et al., 2004; McLaren & Nelson,

2009). During baseline, it was noted that the participating teachers rarely implemented the intervention strategies but did demonstrate high levels of implementation of the multi-component intervention strategies.

A variable that affects the process and outcome of function-based or PBS intervention is the teacher skills required to conduct functional behavioral assessment (FBA) and design and implement multi-component intervention strategies (Conroy et al., 2007; Conroy, Clark, Fox, & Gable, 2000), which are the key components of PTR intervention. Prior literature suggested that even the school based consultants had difficulty linking FBA to intervention (Conroy et al., 2007; Van Acker, 2005). Considering the early childhood educators in community early childhood settings have substantially lower levels of training and support to address challenging behavior in young children (Hemmeter, Fox, Jack, & Broyles, 2007), this study suggests that it is essential to provide training to early childhood educators in the process of selecting appropriate prevention, teaching, and reinforce strategies based on FBA results (Blair et al., 1999; 2010; Schepis, Ownbey, Parsons, & Reid, 2000). In this study, it was emphasized to provide the teaching staff with training and coaching during intervention as a critical element to enhance teacher skills and to ensure teacher implementation fidelity as well as generalization (Blair et al., 2010; Casey & McWilliam, 2008).

An encouraging result of the study was the successful implementation of the intervention by both teachers who served the participating children in the classroom. Their consistent implementation of the intervention across target routines resulted in significant improvement of the children's target behaviors. Their active involvement in all aspects of the PTR process to address the children's challenging behavior contributed

to immediate change in the children's behavior. However, toward the end of study, the lead teacher who had more training background and teaching experience left the program in pursuit of a position in a public school setting. The program director also resigned her position to assume a teaching role in the public school system. Both children in this study were subjected to many staff changes in their eight months prior to the study and that continued throughout the course of the study.

Considering the high staff-turn over and limited resources in community early childhood settings to implement interventions, this study suggests that the behavior support team develop intervention steps that are effective and easily implementable by early childhood educators who have diverse training backgrounds. When the intervention steps are easy to implement, the new staff will be able to implement the intervention without extensive training. The teachers in the study selected interventions that they indicated were the easiest to implement including the use of clear specific instructions and increasing their levels of reinforcement for the children's appropriate behavior. Prior to the interventions teacher would call the children by name but not provide them with direction after they gained attention from the child and they also spent a great deal of time focused on the challenging behaviors and little attention to the appropriate behaviors. However, it is important to recognize that while every function of both children's challenging behavior was not specifically addressed, the teachers were still able to select intervention strategies that worked in this case. For example, one of the functions of Mandy's problem behavior was found to be delaying task demands, but the strategies of modifying tasks to reduce task demands or providing negative reinforcement contingent upon completion of task were not included in the intervention strategies.

Although the researcher or another behavior analyst might not initially select the intervention strategies chosen by the teachers, the strategies selected by the teachers were valued, considering they were the persons implementing the strategies. To ensure successful implementation of intervention strategies, it was considered important to select strategies that would encourage teacher buy-in.

While this study appears effective for the two students and teachers it is not without its limitations. First, the study was conducted in a private preschool setting and the parents did not participate as part of the team. Often we find that children in daycare settings do not have attendance requirements like that of the school system and parents may not be able to take time off of work to participate in five meetings. Second, we were unable to obtain maintenance and follow-up data due to time constraints. Both Mandy and Michelle had a variety of absences during the summer program, which resulted in the limited data collection during intervention across routines. Intervention phases should have been extended in order to collect more data to show the maintenance of the PTR intervention without the researcher involvement. In addition, follow-up data could have been collected to demonstrate long-term outcomes of the intervention. Third, due to the absences, including a complete replication across routines with Michelle was not possible to assess teacher generalization.

Another possibility for inclusion in future studies would be the use of technology to include parents in the PTR process. With online video ability and telephone communication, each of the team meetings conducted in this study could have easily included parents.

In summary, the results of the present study provide positive results that early childhood teachers in a community preschool setting can implement the PTR model with children of preschool age. This extension of the original PTR evaluation is promising, not only because it adds to the use of PTR, but also because it is an effective way for teachers to learn how to help young children in their classrooms.

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## Appendices

## Appendix 1

### Teacher Work Style Survey

**Directions:** Circle the number that indicates your level of agreement / disagreement with each statement.

	Disagree					Agree
	1	2	3	4	5	N/A
1. I supervise paraeducators closely.	1	2	3	4	5	N/A
2. I like a flexible work schedule. ....	1	2	3	4	5	N/A
3. I let paraeducators know exactly what is expected.....	1	2	3	4	5	N/A
4. I provide (or at least determine) all the materials that will be used	1	2	3	4	5	N/A
5. I provide a written work schedule.....	1	2	3	4	5	N/A
6. I expect the paraeducator to think ahead to the next task. ....	1	2	3	4	5	N/A
7. I determine the instructional methods that will be used	1	2	3	4	5	N/A
8. I encourage the paraeducator to try new activities independently.	1	2	3	4	5	N/A
9. I give explicit directions for each task	1	2	3	4	5	N/A
10. I always do several things at one time.	1	2	3	4	5	N/A
11. I like working with paraeducators that willingly take on new challenges	1	2	3	4	5	N/A
12. I like taking care of details.	1	2	3	4	5	N/A
13. I require the paraeducator to be very punctual	1	2	3	4	5	N/A
14. I like to get frequent feedback on how I can improve as a supervisor	1	2	3	4	5	N/A
15. I like to bring problems out in the open	1	2	3	4	5	N/A
16. I like to give frequent performance feedback to the paraeducator	1	2	3	4	5	N/A
17. I like to discuss activities that do not go well	1	2	3	4	5	N/A
18. I like working with other adults	1	2	3	4	5	N/A
19. I encourage paraeducators to think for themselves	1	2	3	4	5	N/A
20. I am a morning person	1	2	3	4	5	N/A
21. I speak slowly and softly	1	2	3	4	5	N/A
22. I work best alone with little immediate interaction	1	2	3	4	5	N/A
23. I need a quiet place to work without distractions	1	2	3	4	5	N/A
24. I prefer that no one else touches my things	1	2	3	4	5	N/A
25. I prefer to work from a written plan	1	2	3	4	5	N/A

## Appendix 2

### Paraeducator Work Style Survey

**Directions:** Circle the number that indicates your level of agreement / disagreement with each statement.

	Disagree					Agree
1. I like to be supervised closely.....	1	2	3	4	5	N/A
2. I like a flexible work schedule.....	1	2	3	4	5	N/A
3. I like to know exactly what is expected.....	1	2	3	4	5	N/A
4. I prefer to decide which materials to use.....	1	2	3	4	5	N/A
5. I like having a written work schedule.....	1	2	3	4	5	N/A
6. I need time to think ahead on the next task.....	1	2	3	4	5	N/A
7. I like to determine the instructional methods I use.....	1	2	3	4	5	N/A
8. I like to try new activities independently.....	1	2	3	4	5	N/A
9. I like to be told how to do each task.....	1	2	3	4	5	N/A
10. I like to do several things at one time.....	1	2	3	4	5	N/A
11. I like to take on challenges and new situations.....	1	2	3	4	5	N/A
12. I like taking care of details.....	1	2	3	4	5	N/A
13. I like to be very punctual.....	1	2	3	4	5	N/A
14. I like to give frequent feedback on how I prefer to be supervised...1	2	3	4	5	N/A	
15. I like to bring problems out in the open.....	1	2	3	4	5	N/A
16. I like to get frequent feedback on my performance.....	1	2	3	4	5	N/A
17. I like to discuss when activities do not go well.....	1	2	3	4	5	N/A
18. I like working with other adults.....	1	2	3	4	5	N/A
19. I like to think things through for myself.....	1	2	3	4	5	N/A
20. I am a morning person.....	1	2	3	4	5	N/A
21. I like to speak slowly and softly.....	1	2	3	4	5	N/A
22. I like to work alone with little immediate interaction.....	1	2	3	4	5	N/A
23. I need a quiet place to work without distractions.....	1	2	3	4	5	N/A
24. I prefer that no one else touches my things.....	1	2	3	4	5	N/A
25. I prefer to work from a written plan.....	1	2	3	4	5	N/A

## Appendix 3

## Work Style Score Comparison Sheet

Disagree		Agree		<u>Item Content</u>	Disagree		Agree								
1	2	3	4		5	1	2	3	4	5					
1	2	3	4	5	N/A	.....	1.	Closeness of supervision	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	2.	Flexibility of work schedule	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	3.	Preciseness of expectations	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	4.	Decisions on which materials to use	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	5.	Written work schedule	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	6.	Time to think ahead on the next task	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	7.	Decisions on instructional methods	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	8.	Trying new activities independently	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	9.	Specifying how to do each task	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	10.	Doing several things at one time	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	11.	Taking on challenges	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	12.	Taking care of details	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	13.	Punctuality	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	14.	Giving /getting feedback on supervision	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	15.	Dealing with problems out in the open	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	16.	Giving / getting frequent feedback	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	17.	Discussing activities that do not go well	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	18.	Working with other adults	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	19.	Thinking things through for myself	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	20.	I am a morning person	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	21.	Speak slowly and softly	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	22.	Working alone - little interaction	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	23.	Quiet place to work / no distractions	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	24.	Touching others' things	.....	1	2	3	4	5	N/A
1	2	3	4	5	N/A	.....	25.	Working from a written plan	.....	1	2	3	4	5	N/A

## Appendix 4

## Developing Short Term Goals

Short-Term Goals for Mandy

	Behavioral	Social	Academic
Broad	Mandy will actively participate in all scheduled activities appropriately.	Mandy will interact with peers in an appropriate manner.	Academic goals have not been specified for Mandy during this project.
Decrease	Mandy will decrease her walking away from a planned activity and yelling.	Mandy will decrease placing demands on, yelling, hitting, or touching her peers.	NA
Increase	Mandy will stay within 2 feet of the designated activity area, use a conversational tone of voice, and eyes focused on the teacher and/or work materials.	Mandy will increase use of a conversational tone of voice, respecting the personal space (2ft circle) of her peers.	NA

## Developing Short Term Goals

### Short-Term Goals for Michelle

	<b>Behavioral</b>	<b>Social</b>	<b>Academic</b>
<b>Broad</b>	Michelle will actively participate in all scheduled activities appropriately.	Michelle will interact with peers in an appropriate manner.	Academic goals have not been specified for Michelle during this project.
<b>Decrease</b>	Michelle will decrease her walking away from a planned activity and yelling.	Michelle will decrease placing demands on, yelling, hitting, or touching her peers and demanding excessive adult attention (more than 2 times per activity).	NA
<b>Increase</b>	Michelle will stay within 2 feet of the designated activity area, use a conversational tone of voice, and eyes focused on the teacher and/or work materials.	Michelle will increase use of a conversational tone of voice, respecting the personal space (2ft circle) of her peers, and request attention from adults only 1 time per activity.	NA

## Appendix 5

## Child Behavior Data Sheet

## Child Behavior Interval Recording Sheet

Child's Name \_\_\_\_\_ Date \_\_\_\_\_  
 Observer's Name \_\_\_\_\_ Behavior \_\_\_\_\_  
 Activity \_\_\_\_\_

Start Time \_\_\_\_ Stop Time \_\_\_\_ Total Time \_\_\_\_\_

(Code: + occurrence; - nonoccurrence)

1 min						2 min						3 min					
10 "																	
4 min						5 min						6 min					
10 "																	
7 min						8 min						9 min					
10 "																	
10 min																	
10 "	10 "	10 "	10 "	10 "	10 "												

Number of Occurrences \_\_\_\_\_ Percentage of Occurrences \_\_\_\_\_% Overall IOA \_\_\_\_\_%  
 Nonoccurrence IOA \_\_\_\_\_%

Number of Nonoccurrences \_\_\_\_\_  
 Percentage of Nonoccurrences \_\_\_\_\_%  
 Occurrence IOA \_\_\_\_\_

## Appendix 6

## FUNCTIONAL BEHAVIOR ASSESSMENT

*Directions:*

Your team selected both problem behavior(s) and pro-social or academic behaviors to be targeted for the PTR Intervention. The behaviors targeted were written in measurable terms. Complete one PTR Assessment form for **each problem behavior targeted** (not the pro-social or academic behaviors).

Answer each PTR assessment question by selecting or writing the response(s) that best describe events related to the problem behavior specified. The responses you provide will give your team valuable information to help understand the circumstances contributing to the problem behavior and will lead to selecting more effective PTR interventions.

## PTR ASSESSMENT: Prevent Component

1a. Are there *times of the school day* when problem behavior is *most likely* to occur? If yes, what are they?

Morning     Before meals     During meals     After meals     Arrival  
 Afternoon     Dismissal

Other: \_\_\_\_\_

1b. Are there *times of the school day* when problem behavior is *least likely* to occur? If yes, what are they?

Morning     Before meals     During meals     After meals     Arrival  
 Afternoon     Dismissal

Other: \_\_\_\_\_

2a. Are there *specific activities* when problem behavior is *very likely* to occur? If yes, what are they?

<input type="checkbox"/> Reading/LA	<input type="checkbox"/> Writing	<input type="checkbox"/> Math	<input type="checkbox"/> Science
<input type="checkbox"/> Independent work	<input type="checkbox"/> Small group work	<input type="checkbox"/> Large group work	<input type="checkbox"/> Riding the bus
<input type="checkbox"/> One-on-one	<input type="checkbox"/> Computer	<input type="checkbox"/> Recess	<input type="checkbox"/> Lunch
<input type="checkbox"/> Free time	<input type="checkbox"/> Peer/cooperative work	<input type="checkbox"/> Centers	<input type="checkbox"/> Discussions/Q&A
<input type="checkbox"/> Worksheets, seatwork		<input type="checkbox"/> Specials (specify) _____	<input type="checkbox"/> Transitions (specify) _____

Other: \_\_\_\_\_

2b. Are there *specific activities* that cooperative and prosocial behavior is *very likely* to occur? What are they?

- |   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> Reading/LA           | <input type="checkbox"/> Writing               | <input type="checkbox"/> Math                     | <input type="checkbox"/> Science                     |
| <input type="checkbox"/> Independent work     | <input type="checkbox"/> Small group work      | <input type="checkbox"/> Large group work         | <input type="checkbox"/> Riding the bus              |
| <input type="checkbox"/> One-on-one           | <input type="checkbox"/> Computer              | <input type="checkbox"/> Recess                   | <input type="checkbox"/> Lunch                       |
| <input type="checkbox"/> Free time            | <input type="checkbox"/> Peer/cooperative work | <input type="checkbox"/> Centers                  | <input type="checkbox"/> Discussions/Q&A             |
| <input type="checkbox"/> Worksheets, seatwork |  | <input type="checkbox"/> Specials (specify) _____ | <input type="checkbox"/> Transitions (specify) _____ |

Other: \_\_\_\_\_

3a. Are there *specific classmates or adults* whose proximity is associated with a high likelihood of problem behavior? If so, who are they?

- |  |                |  |
|--|----------------|--|
| <input type="checkbox"/> Peers               | Specify: _____ | <input type="checkbox"/> Bus driver          |
| <input type="checkbox"/> Teacher(s)          | Specify: _____ | <input type="checkbox"/> Parent              |
| <input type="checkbox"/> Paraprofessional(s) | Specify: _____ | <input type="checkbox"/> Other family member |
| <input type="checkbox"/> Other school staff  | Specify: _____ | (Specify) _____                              |

Other: \_\_\_\_\_

3b. Are there *specific classmates or adults* whose proximity is associated with a high likelihood of cooperative and prosocial behavior? If so, who are they?

- |  |                |  |
|--|----------------|--|
| <input type="checkbox"/> Peers               | Specify: _____ | <input type="checkbox"/> Bus driver          |
| <input type="checkbox"/> Teacher(s)          | Specify: _____ | <input type="checkbox"/> Parent              |
| <input type="checkbox"/> Paraprofessional(s) | Specify: _____ | <input type="checkbox"/> Other family member |
| <input type="checkbox"/> Other school staff  | Specify: _____ | (Specify) _____                              |

Other: \_\_\_\_\_

4. Are there *specific circumstances* that are associated with a high likelihood of problem behavior?

- |  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> Request to start task     | <input type="checkbox"/> Task too difficult                   | <input type="checkbox"/> Transition                      | <input type="checkbox"/> Student is alone                       |
| <input type="checkbox"/> Being told work is wrong  | <input type="checkbox"/> Task too long                        | <input type="checkbox"/> End of preferred activity       | <input type="checkbox"/> Unstructured time                      |
| <input type="checkbox"/> Reprimand or correction   | <input type="checkbox"/> Task is boring                       | <input type="checkbox"/> Removal of preferred item       | <input type="checkbox"/> 'Down' time (no task specified)        |
| <input type="checkbox"/> Told "no"                 | <input type="checkbox"/> Task is repetitive (same task daily) | <input type="checkbox"/> Start of non-preferred activity | <input type="checkbox"/> Teacher is attending to other students |
| <input type="checkbox"/> Seated near specific peer | <input type="checkbox"/> Novel task                           |  |   |
| <input type="checkbox"/> Peer teasing or comments  |   |  |   |
| <input type="checkbox"/> Change in schedule        |   |  |   |

Other: \_\_\_\_\_

5. Are there conditions in the *physical environment* that are associated with a high likelihood of problem behavior? For example, too warm or too cold, too crowded, too much noise, too chaotic, weather conditions....

Yes (specify) \_\_\_\_\_  
 No

6. Are there circumstances *unrelated to the school setting* that occur on some days and not other days that may make problem behavior more likely?

<input type="checkbox"/> Illness	<input type="checkbox"/> No medication	<input type="checkbox"/> Drug/alcohol	<input type="checkbox"/> Home
<input type="checkbox"/> Allergies	<input type="checkbox"/> Change in medication	abuse	conflict
<input type="checkbox"/> Physical condition	<input type="checkbox"/> Hunger	<input type="checkbox"/> Bus conflict	<input type="checkbox"/> Sleep
<input type="checkbox"/> Hormones or	<input type="checkbox"/> Parties or social event	<input type="checkbox"/> Fatigue	deprivation
menstrual cycle	<input type="checkbox"/> Change in diet	<input type="checkbox"/> Change in routine	<input type="checkbox"/> Stayed with
		<input type="checkbox"/> Parent not home	non-custodial
			parent

Other: \_\_\_\_\_

Any other comments not addressed in the *Prevent Component*:

#### PTR ASSESSMENTS: Teach Component

1. Does the *problem behavior* seem to be exhibited in order to *gain attention from peers*?

Yes *List the specific peers:* \_\_\_\_\_  
 No

2. Does the *problem behavior* seem to be exhibited in order to *gain attention from adults*? If so, are there particular adults whose attention is solicited?

Yes *List the specific adults:* \_\_\_\_\_  
 No

3. Does the *problem behavior* seem to be exhibited in order to *obtain objects* (toys or games, materials, food) from peers or adults?

Yes *List the specific objects:* \_\_\_\_\_  
 No

4. Does the *problem behavior* seem to be exhibited in order to *delay a transition* from a preferred activity to a non-preferred activity?

Yes *List the specific transitions:* \_\_\_\_\_  
 No

5. Does the *problem behavior* seem to be exhibited in order to *terminate or delay* a non-preferred (difficult, boring, repetitive) task or activity?

Yes *List the specific non-preferred tasks or activities:* \_\_\_\_\_  
 No

6. Does the *problem behavior* seem to be exhibited in order to ***get away from*** a nonpreferred classmate or adult?

Yes *List the specific peers or adults* \_\_\_\_\_

No

7. What ***social skills(s)*** could the student learn in order to reduce the likelihood of the *problem behavior* occurring in the future?

<input type="checkbox"/> Peer interaction	<input type="checkbox"/> Sharing objects	<input type="checkbox"/> Taking turns
<input type="checkbox"/> Play skills	<input type="checkbox"/> Sharing attention	<input type="checkbox"/> Losing gracefully
<input type="checkbox"/> Getting attention appropriately	<input type="checkbox"/> Conversation skills	<input type="checkbox"/> Waiting for reinforcement
<input type="checkbox"/> Joint or shared attention	<input type="checkbox"/> Making pro-social statements	<input type="checkbox"/> Accepting differences

Others: \_\_\_\_\_

8. What ***problem-solving skill(s)*** could the student learn in order to reduce the likelihood of the problem behavior occurring in the future?

<input type="checkbox"/> Recognizing need for help	<input type="checkbox"/> Note-taking strategies	<input type="checkbox"/> Staying engaged
<input type="checkbox"/> Asking for help	<input type="checkbox"/> Assignment management	<input type="checkbox"/> Working independently
<input type="checkbox"/> Using visual supports to work independently	<input type="checkbox"/> Working with a peer	<input type="checkbox"/> Making an outline
<input type="checkbox"/> Ignoring peers	<input type="checkbox"/> Move ahead to easier items then go back to difficult items	<input type="checkbox"/> Self-management
<input type="checkbox"/> Graphic organizers		<input type="checkbox"/> Making choices from several appropriate options

Others: \_\_\_\_\_

9. What ***communication skill(s)*** could the student learn in order to reduce the likelihood of the problem behavior occurring in the future?

<input type="checkbox"/> Asking for a break	<input type="checkbox"/> Raising hand for attention	<input type="checkbox"/> Asking for help
<input type="checkbox"/> Expressing emotions (frustration, anger, hurt)	<input type="checkbox"/> Requesting wants	<input type="checkbox"/> Commenting
<input type="checkbox"/> Requesting information	<input type="checkbox"/> Rejecting	<input type="checkbox"/> Responding to others
	<input type="checkbox"/> Active listening	

Others: \_\_\_\_\_

Any other comments not addressed in the ***Teach Component***:

### PTR ASSESSMENT: Reinforce Component

1. What ***consequence(s)*** usually follow the student's *problem behavior*?

<input type="checkbox"/> Sent to time-out	<input type="checkbox"/> Gave personal space	<input type="checkbox"/> Verbal reprimand
<input type="checkbox"/> Chair time-out	<input type="checkbox"/> Sent to behavior specialist/counselor	<input type="checkbox"/> Stated rules
<input type="checkbox"/> Head down	<input type="checkbox"/> Assistance given	<input type="checkbox"/> Physical prompt
<input type="checkbox"/> Sent to office	<input type="checkbox"/> Verbal redirect	<input type="checkbox"/> Peer reaction
<input type="checkbox"/> Sent home	<input type="checkbox"/> Delay in activity	<input type="checkbox"/> Physical restraint



## Appendix 7

**HYPOTHESIS DEVELOPMENT FORM**  
Prevent-Teach-Reinforce Assessment Information

Student:   Mandy   Date:   8/2010  

Prevention Data	Teaching Data	Reinforcement Data
Demands Peer cooperative work Recess Transitions Certain teachers present	Attention from adults Delay transition Terminate or delay task Recognize need for help Stay engaged Expressing emotions	Chair time out Calming/soothing Assistance given Verbal reprimand

**Possible Hypotheses for Problem and Appropriate Behavior**

When....	She will.....	As a result, he/she .....
Demands are placed When peer cooperative work When transitions occur	Cry, yell, walk away, hit peers	Gets attention from adults, delay in activity, and attention from peers

**HYPOTHESIS DEVELOPMENT FORM**  
Prevent-Teach-Reinforce Assessment Information

Student:   Michelle   Date:   8/2010  

Prevention Data	Teaching Data	Reinforcement Data
Demands Large/small group work Independent work	Attention from adults Delay transition Terminate or delay task Get attention appropriately Stay engaged Working independently	Sent to time out Delay in activity Physical prompt Removal of reinforcers Assistance given Verbal reprimand Activity changed/terminated

**Possible Hypotheses for Problem and Appropriate Behavior**

When....	She will.....	As a result, he/she .....
Demands are placed Or is required to work	Cry, yell, walk away, hit peers	Gets attention from adults, delay in activity, and attention from peers

## Appendix 8

### Prevent-Teach-Reinforce Interventions Checklist Instructions

**Instructions:** *Review your hypothesis statement.*

- 1) Select the interventions that match the information in your hypotheses. Please select **at least two interventions** but **no more than four** in each category (prevent, teach, reinforce). **The asterisked interventions are required and must be selected.**
- 2) Rank order the selected interventions by placing a “1” in the box next to the most highly preferred, a “2” next to the second highest preferred, etc.

**Example Hypothesis:** When presented with a demand involving a non-preferred and difficult task, Joey will scream loudly to avoid the task and to get assistance.

Prevention	Teach	Reinforce
1 Providing choices	1 *Replacement behaviors (functional or desired)	2 *Reinforce replacement behavior (functional or desired)
<input type="checkbox"/> Transition supports	2 Specific academic skills	<input type="checkbox"/> Increase noncontingent reinforcement
3 Environmental supports	<input type="checkbox"/> Problem solving strategies	1 Discontinue reinforcement of problem behavior
2 Curricular modifications	<input type="checkbox"/> General coping strategies	<input type="checkbox"/> Group contingencies (peers, teachers)

### PTR Interventions Checklist

Student: \_\_\_\_\_ Date: \_\_\_\_\_ Behavior: \_\_\_\_\_

Completed by: \_\_\_\_\_

Hypothesis: \_\_\_\_\_

Prevention Interventions	Teaching Interventions	Reinforcement Interventions
<input type="checkbox"/> Providing Choices	<b>**Replacement Behavior</b> <input type="checkbox"/> Functional <input type="checkbox"/> Desired or Pro-Social	<b>**Reinforce Replacement Behavior</b> <input type="checkbox"/> Functional <input type="checkbox"/> Desired or Pro-Social
<input type="checkbox"/> Transition Supports	<input type="checkbox"/> Specific Academic Skills	<input type="checkbox"/> Increase Non-Contingent Reinforcement
<input type="checkbox"/> Environmental Supports	<input type="checkbox"/> Problem Solving Strategies	<input type="checkbox"/> Discontinue Reinforcement of Problem Behavior
<input type="checkbox"/> Curricular Modification (eliminating triggers)	<input type="checkbox"/> General Coping Strategies	<input type="checkbox"/> Group Contingencies (peer, teacher)
<input type="checkbox"/> Adult Verbal Behavior (just be nice)	<input type="checkbox"/> Specific Social Skills	<input type="checkbox"/> Increase Ratio of + to – Responses
<input type="checkbox"/> Classroom Management	<input type="checkbox"/> Teacher Pleasing Behaviors	<input type="checkbox"/> Home to School Reinforcement System
<input type="checkbox"/> Setting Event Modification	<input type="checkbox"/> Learning Skills Strategies	<input type="checkbox"/> Establish Crisis Intervention
<input type="checkbox"/> Opportunity for Pro-Social Behavior (peer support)	<input type="checkbox"/> Self Management (self monitoring)	
<input type="checkbox"/> Peer Modeling	<input type="checkbox"/> Delayed Gratification	
	<input type="checkbox"/> Independent Responding	
	<input type="checkbox"/> Increased Engaged Time	

**\*\*All** asterisked interventions need to be selected and included in the student's PTR Intervention Plan

### Intervention Plan

Student: Mandy

Teacher: \_\_\_\_\_

**Hypothesis: When demands are placed on Mandy or she is required to participate in a group activity or transitions, she will exhibit challenging behaviors in order to gain access to attention from her peers and teachers and will also delay the task.**

#### PREVENT Interventions

Intervention Type	Specific Strategy	Needed/Who
Prevent: Adult Verbal Behavior	The teachers will use a calm tone of voice, use clear specific language, use positive phrasing, and increase comments instead of demands only.	All teachers

#### TEACH Interventions

Intervention Type	Specific Strategy	Needed/Who
Teach: desired or pro-social Specific Social Skills	The teachers will use script stories to discuss the specific social skills of asking for help and the use of appropriate emotions.	All teachers and peers

#### REINFORCE Interventions

Intervention Type	Specific Strategy	Needed/Who
Reinforce: Functional Increase ratio of + to – responses	The teachers will increase their use of positive comments and reinforcing comments to the Mandy and will use the ratio of 4:1.	All teachers

### Intervention Plan

Student: Michelle

Teacher: \_\_\_\_\_

**Hypothesis: When demands are placed on Michelle or she is required to participate in a group activity or transitions, she will exhibit challenging behaviors in order to gain access to attention from her peers and teachers and will also delay the task.**

#### PREVENT Interventions

Intervention Type	Specific Strategy	Needed/Who
Prevent: Adult Verbal Behavior	The teachers will use a calm tone of voice, use clear specific language, use positive phrasing, and increase comments instead of demands only.	All teachers

#### TEACH Interventions

Intervention Type	Specific Strategy	Needed/Who
Teach: desired or pro-social Specific Social Skills	The teachers will use script stories to discuss the specific social skills of respecting personal space and how to follow rules.	All teachers and peers

#### REINFORCE Interventions

Intervention Type	Specific Strategy	Needed/Who
Reinforce: Functional Increase ratio of + to – responses	The teachers will increase their use of positive comments and reinforcing comments to the Michelle and will use the ratio of 4:1.	All teachers

## Appendix 9

## PTR Teacher Implementation Checklist

Date of Training: \_\_\_\_\_

Student: Mandy

Teacher/Teacher Assistant: \_\_\_\_\_

Consultant: LK

Task Analysis of Intervention	Did the Implementer Complete the step?	
<b>PREVENT</b>		
1. Prepare the child for activity or transition by providing a clear verbal statement of what they were expected to do (transition – line up, hands on hips, bubble in mouth) (group – sit in this seat, use your paper, draw a picture of “x”) (playground – choose an activity to play with Susie, let me know if you need help)	Yes	No
2. Go over to the child and provide verbal prompt to initiate the activity or routine using clear language (e.g., "First, clean-up, then play") and calm tone of voice.	Yes	No
3. Remind the child of the routine expectations using positive phrasing (e.g., “Use quiet voices” rather than “Don’t yell”)	Yes	No
<b>TEACH – 1 Time Daily</b>		
1. Review the “asking for help” story	Yes	No
2. Ask Mandy if she has any questions	Yes	No
3. Review the emotions story	Yes	No
4. Ask Mandy if she has any questions	Yes	No
5. Thank Mandy for reading the stories together	Yes	No
<b>REINFORCE</b>		
1. Upon the child's engagement, initiation or attempt to comply with directions, provide verbal complements.	Yes	No
2. If the child attempts to use the problem behavior to obtain toys from a peer or refuses to follow directions, remind of class rules or routine expectations and provide alternatives; praise for choosing an alternative.	Yes	No
3. If the child continues to engage in the problem behavior, be calm about the problem behavior; temporally withhold the activity or attention while ignoring problem behavior.	Yes	No

## Appendix 10

### Fidelity of PTR Steps Implementation Checklist

Date of Meeting: \_\_\_\_\_ Student: \_\_\_\_\_  
 Teacher/Teacher Assistant: \_\_\_\_\_ Consultant: \_\_\_\_\_

**Interventions:** Prevent –  
 Teach –  
 Reinforcer -

**Instructions:** (1) Place an 'x' in each cell that coincides with the activities completed during the meeting (e.g., discussion, role-play, etc.) (2) Answer yes or no if the consultant effectively demonstrates each step of the intervention. (3) Obtain integrity score.

Task Analysis of PTR Meetings	Researcher Conducted Task	
<b>Meeting 1</b>		
1. Welcome and introduction of team	Yes	No
2. Overview of process and meeting goals	Yes	No
3. Explains and uses teaming worksheets	Yes	No
4. Explains and sets time for baseline data	Yes	No
<b>Meeting 2</b>		
1. Explains and uses FBA checklist	Yes	No
2. Explains and uses FBA summary table	Yes	No
3. Goes over baseline data and hypothesis	Yes	No
4. Explains and uses PTR intervention checklist	Yes	No
5. Develops Intervention plan	Yes	No
6. Makes and explains training checklist	Yes	No
8. Takes fidelity of implementation data	Yes	No
<b>Meeting 3</b>		
1. Discusses intervention data	Yes	No
2. Explains and uses self-evaluation social validity measure	Yes	No
Total Number of Correct Steps		
Percentage of Correct Steps		

**Appendix 11****PTR Self-Evaluation: Social Validity**

Directions: Please score each item by circling the number that best indicates how you feel about the PTR intervention(s).

1. Given the child's behavior problems, how acceptable did you find the PTR behavior plan?

1	2	3	4	5
Not acceptable		Neutral		Very acceptable

2. How willing were you to carry out this behavior plan?

1	2	3	4	5
Not willing		Neutral		Very willing

3. To what extent were there disadvantages to following the behavior plan?

1	2	3	4	5
No disadvantages		Neutral		Many disadvantages

4. How much time was needed each day for you to carry out the behavior plan?

1	2	3	4	5
Little time		Some time		Much time

5. To what extent do you think the behavior plan was effective in reducing problem behaviors?

1	2	3	4	5
Not effective		Somewhat effective		Very effective

6. Do you feel that following this plan will result in permanent improvements in the child's behavior?

1	2	3	4	5
Unlikely		Possibly		Very likely

7. How disruptive was it to carry out the behavior plan?

1	2	3	4	5
Not at all disruptive		Slightly disruptive		Very disruptive

8. How much did/do you like the procedures used in the behavior plan?

1	2	3	4	5
---	---	---	---	---

9. How likely is it that you will continue to implement the procedures in the plan after this research is terminated?

1	2	3	4	5
Unlikely		Somewhat Likely		Very likely

10. To what extent did you observe undesirable side effects as a result of the behavior plan?

1	2	3	4	5
No side effects		Neutral		Definite side effects

11. How much discomfort did the child experience during the behavior plan?

1	2	3	4	5
Little discomfort		Some discomfort		Significant discomfort

12. How willing were you to change routines in order to carry out the behavior plan?

1	2	3	4	5
Not willing		Somewhat willing		Very willing

13. How well did carrying out the plan fit into your current routines?

1	2	3	4	5
Not at all		Somewhat		Very well

14. How effective was the intervention in terms of teaching the child appropriate behavior?

1	2	3	4	5
Not effective		Somewhat effective		Very effective

15. How well did the goal of the intervention fit with the team's goal for improvement of the child's behavior?

1	2	3	4	5
Not at all		Somewhat		Very well

Other comments:

---

**Appendix 12****Novel Rater Evaluation: Social Validity**

Directions: Please score each item by circling the number that indicates how you feel about the teacher and child behavior.

1. The child's behavior is acceptable in this routine.

1	2	3	4	5
No		Somewhat	Yes	

2. The child is participating in the routine appropriately.

1	2	3	4	5
No		Somewhat	Yes	

3. The child appears comfortable with how the routine is going.

1	2	3	4	5
No		Somewhat	Yes	

4. The strategies used by the teacher(s) are working in this routine.

1	2	3	4	5
No		Somewhat	Yes	

5. The teacher appears comfortable with how the routine is going.

1	2	3	4	5
No		Somewhat	Yes	

6. The strategies used by the teacher are practical for preschoolers.

1	2	3	4	5
No		Somewhat	Yes	