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Teacher-Implemented Presession Pairing to Improve Classroom Behaviors in Public Schools

Rachel M. Sofarelli
University of South Florida, rsofarelli@mail.usf.edu

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Teacher-Implemented Presession Pairing to Improve Classroom Behaviors in Public Schools

by

Rachel M. Sofarelli

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Applied Behavior Analysis Department of Child and Family Services College of Behavioral and Community Sciences University of South Florida

Major Professor: Kwang-Sun Blair, PhD, BCBA-D Kimberly Crosland, PhD, BCBA-D Raymond Miltenberger, PhD, BCBA-D

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DEDICATION

I dedicate this manuscript to the memory of my mother, Anne Sofarelli, an incredible parent and role model to put others before oneself. She guided and supported me while allowing me to pave my own path in life. She encouraged me to follow my heart and pursue a career I am greatly passionate about. During her life, she touched and positively influenced so many others and I strive to do the same while carrying her in my heart. I also would like to dedicate this manuscript to my father, John Sofarelli, who continues to support and encourage me to achieve my goals academically and personally, helping make all I have dreamed of a reality. Finally, I dedicate this manuscript to my siblings, JJ and Becca Sofarelli, who stand by me through every challenge and celebrate every success. I owe every achievement to my loving family.
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ABSTRACT

Presession pairing is an antecedent intervention that has shown to decrease problem behavior of elementary school children with autism, whose problem behavior is maintained by social reinforcement. It has also shown modest increases in academic responding. However, the research on presession pairing has not examined its efficacy or acceptability in the natural classroom setting when implemented by the teacher. Therefore, this study used teacher training and a multiple baseline across participants design to test the potential efficacy of teacher-implemented presession pairing in increasing on-task behavior and reducing problem behavior of four students with problem behavior in inclusive public elementary school classrooms. The results indicated that the presession pairing successfully increased on-task behavior and decreased problem behavior for all participating students. The social validity assessment indicated that the teachers found the presession intervention contextually fit, easy to implement, and effective for all students in the classroom.
CHAPTER ONE:
INTRODUCTION

Problem behavior in school interferes with access to effective academic instruction for students with and without disabilities (Sugai, Horner, & Gresham, 2002). Children entering kindergarten with problem behavior are at a higher risk for disabilities (Montes, Lotyczewski, Halterman, & Hightower, 2012). Problem behavior typically includes a variety of maladaptive behaviors that interfere with learning and increases the probability of further problems in school or society (Morgan & Sideridis, 2013). The most common maladaptive behavior in the classroom falls under the category of externalizing behavior, including aggression, distractibility, hyperactivity, and disruptive behavior, which may lead to academic failure (Harrison, Vannest, Davis, & Reynolds, 2012; Nelson, Benner, Lane, & Smith, 2004).

During the 2013 to 2014 school year, 12.9% of students were served under the Individuals with Disabilities Education Act (U.S. DOE, 2016). According to Scholastic and the Bill & Melinda Gates Foundation (2014), 99% of teachers have students with social, emotional, or behavioral challenges in their classrooms, indicating missed instructional time for almost all students. Additionally, lower quality student-teacher relationships are correlated with early behavior problems in children, leaving them less prepared for social and emotional challenges later in school (Blacher, Howell, Lauderdale-Littin, DiGennaro Reed, & Laugeson, 2014; Eisenhower, Baker, & Blacher, 2007). Problem behavior puts students at risk for exclusion from
typical school and community placements, leading to retention and a higher dropout rate (Cortiella & Horowitz, 2014).

Since the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA), schools are required to conduct a functional behavior assessment (FBA) for students whose problem behavior interferes with the learning environment and warrants disciplinary consideration due to the fact that understanding the function of behavior is paramount in designing effective interventions for problem behavior (Lloyd, Weaver, & Staubitz, 2016). Yet, function-based interventions are developed from less than half of FBAs created for students with disabilities, according to an analysis of studies in the Journal of Applied Behavior Analysis (Gresham et al., 2004). Furthermore, ineffective non-function-based interventions are often applied, although students’ problem behavior should be addressed individually with consideration to the context in which the behavior occurs (Scott & Eber, 2003).

**Functional Analyses in Schools**

Although the IDEA does not define FBA or specify what methods should be used, there is a consensus regarding the phases for FBA. Following the indirect and observational descriptive FBAs, which are required in schools, a functional analysis (FA) is conducted based on the formulated hypotheses to confirm the variables maintaining students’ problem behavior (Mueller & Nkosi, 2007). The FA involves manipulation of the environmental variables that are potentially related to problem behavior to experimentally test the effects of these variables on the behavior (Hanley, 2012; Hanley, Iwata, & McCord, 2003). Although a FA is not a required part of FBA, research indicates it leads to effective and practical function-based interventions in schools compared to interventions developed without a FA (e.g., O’reilly, Sigafoos, Lancioni, Edrisinha, & Andrews, 2005; Wright-Gallo, Higbee, Reagon, & Davey, 2006).
Due to the difficulty and time required to repeatedly manipulate environmental variables over multiple conditions, the typical, extended analogue FA has not been recommended in schools (Sasso, Conroy, Peck-Stichter, & Fox, 2001). However, there are several variations of FA that may make it more efficient and suitable for the classroom setting when initial indirect and descriptive FBAs strongly suggest a particular maintaining function of the problem behavior, such as a single function test (Iwata & Dozier, 2008). A brief FA is suggested when there is limited control over environmental conditions, which is the case in most classrooms (Iwata & Dozier, 2008). Bloom, Iwata, Fritz, Roscoe, and Carreau (2011) developed a trial-based FA, allowing teachers to conduct the analysis in the classroom when and where the problem behavior occurs naturally.

In a review of studies on FA in public schools, Mueller, Nkosi, and Hine (2011) suggested that FAs were possible and practical in schools and that most student problem behavior was reinforced by escape. This indicates that interventions for problem behavior in schools should be designed based on FA results if possible. Research has also demonstrated successful implementation of FAs by teachers and paraprofessionals, leading to effective function-based interventions for reducing problem behavior (Bessette & Wills, 2007; Wright-Gallo et al., 2006).

**Effective Interventions for Problem Behavior in Schools**

Researchers have examined an array of behavioral interventions in the school setting, including stimulus control, instruction modification, extinction, reinforcement, punishment, and multicomponent interventions, as well as systems change programs (Martinez, Werch, & Conroy, 2016; Montgomery, Martin, Shooshtari, Stoesz, & Heinrichs, 2013). Positive and negative reinforcement contingencies using functional and non-functional reinforcers have
widely been studied and demonstrated reductions in problem behavior in schools (e.g., Slocum & Vollmer, 2015; Hulac, Benson, Nesmith, & Wollersheim Shervey, 2016).

Many effective school-based interventions involve a combination of antecedent and consequence manipulations. Functional communication training and differential reinforcement of alternative behavior interventions provide students with an alternative means of accessing a reinforcer and put the problem behavior on extinction. These procedures have been effective on their own or in conjunction with other interventions, such as self-management and response cost, in reducing problem behavior in schools (Braithwaite & Richdale, 2000; Luczynski & Hanley, 2013; Wright-Gallo et al., 2006).

Technology has enabled teachers to implement token economies to reduce problem behavior using less time and resources (Robacker, Rivera, & Warren, 2016). Video self-modeling has demonstrated effects and maintenance of teaching classroom rules and increasing on-task behavior in students with high-functioning autism (Lang et al., 2009; Schatz, Peterson, & Bellini, 2016). Several variations of group contingencies have demonstrated reductions in a wide range of problem behavior as well as increased academic engagement in the classroom (Cariveau & Kodak, 2017; McKissick, Hawkins, Lentz, Hailley, & McGuire, 2010).

Teachers have many responsibilities in the classroom and it is often difficult for them to consistently control the consequences of individual students’ behavior and implement individualized behavior plans with fidelity while providing quality academic instruction to all students (Iovannone et al., 2009). Additionally, schools emphasize positive interventions and avoid punishment procedures when possible. Therefore, it is important for teachers to understand the functions of behavior and have the ability to tailor the classroom environment to prevent as much problem behavior as possible through antecedent manipulations.
Antecedent-Based Interventions

Research has indicated the effectiveness of many antecedent-based interventions for reducing students’ problem behavior in the school setting. Some antecedent-based interventions involve altering the problematic routine or demand itself. Studies have demonstrated reductions in escape-maintained problem behavior through decreasing task duration or task difficulty (Burke, Hagan-Burke, & Sugai, 2003; Langthorne, McGille, & Oliver, 2014; Moore et al., 2005). Studies have also demonstrated reductions in problem behavior when the pace of instruction was slowed down (Hagan-Burke et al., 2015). Difficult or non-preferred tasks can be varied and interspersed with preferred activities in order to reduce problem behavior resulting from instructional demands (Roscoe, Rooker, Pence, & Longworth, 2009). Some antecedent-based interventions alter or add something to the environment to reduce the probability of problem behavior. For example, visual activity schedules reduce problem behavior, increase independence, and indicate maintenance of effects using minimal time and resources. They are also anecdotally acceptable to teachers (O’Reilly et al., 2005; Pierce, Spriggs, Gast, & Luscre, 2013).

Researchers have also attempted to satiate students prior to or during problematic routines using noncontingent delivery of the functional or tangible reinforcers. This presession satiation has been effective for automatic- or attention-maintained problem behavior, including stereotypy and disruptive behavior (Fisher, DeLeon, Rodriguez-Catter, & Keeny, 2004; Lang et al., 2010; Rispoli et al., 2011). Sprague and Thomas (1997) demonstrated increased responsiveness and decreases in problem behavior for a student when a neutralizing routine was implemented prior to the problematic instructional time in the classroom. Some students respond
well to the opportunity to choose their reinforcer before beginning a task (Kern, Mantegna, Vorndran, Bailin, & Hilt, 2001; Peterson, Lerman, & Nissen, 2016).

**Issues.** Though antecedent-based interventions reduce certain problem behavior in classrooms, some may not always be practical or possible for teachers to implement. For example, reducing task duration or difficulty may interfere with the required course sequence and schedule. Reducing the pace of instruction for students in a general education classroom may also be impossible due to these requirements. Additionally, choice interventions are only effective for about half of the students studied, so additional interventions may be necessary (Kern et al., 2001; Peterson et al., 2016; Sansoti, 2009). A major criticism of antecedent-based interventions in the field is the lack of manipulation of consequences, which may lead to less substantial reductions in problem behavior (Heyvaert, Saenen, Campbell, Maes, & Onghena, 2014). However, controlling and maintaining consistent consequences in the classroom is difficult for teachers and staff, and antecedent-based interventions allow teachers to prevent some of the problem behavior in advance, using less time and resources (Koegel, Matos-Freden, Lang, & Koegel, 2012).

**Social validity and contextual fit.** It is extremely important to involve key players during planning, especially in schools, to ensure that the intervention is acceptable and fits into the ongoing routine and environment. Moes and Frea (2002) indicated increased intervention effects after changing procedures to fit within the pre-existing routines. This contextualization also increased perception and social validity of the intervention. Benazzi, Horner, and Good (2006) found that school-based behavior plans were most effective and contextually fit when developed by a team of key players, including teachers, staff, and a behavior specialist. This will facilitate more reliable and consistent implementation and therefore result in larger decreases in
problem behavior. Given that teacher resistance to intervention implementation has been a major barrier to success in reducing students’ problem behavior in school (Gay, 2016), interventions are needed that are effective in reducing problem behavior, contextually fit to the classroom setting, and acceptable and practical for teachers to implement without requiring excessive time or resources. Furthermore, it is paramount to provide teachers with ample training and resources to set them up for successful implementation of interventions.

**Presession Pairing**

Presession pairing is an antecedent-based intervention during which the implementer engages in a highly-preferred activity with the student exhibiting escape- or attention-maintained problem behavior immediately preceding the problematic demand situation. This intervention has been shown effective as part of a multi-component treatment package involving other antecedent manipulations (Carr et al., 1999; Kemp & Carr, 1995; McLaughlin & Carr, 2005). It is simple and quick to implement, which may increase social validity and contextual fit, providing an effective behavioral intervention for teachers (Taylor & Fisher, 2010). Research on similar procedures, despite a different intervention name, has indicated reductions in externalizing problem behavior in young students (Vancraeyveldt, Verschueren, Van Craeyevelt, Wouters, & Colpin, 2015).

Kelly, Axe, Allen, & Maguire (2015) utilized brief FAs (Wilder, Masuda, & O’Conner, 2001) following previously obtained descriptive assessments to determine that the function of three students’ problem behavior during instructional time was escape or attention and escape. Parent and teacher interviews followed by brief free-operant preference assessments indicated between two and four of students’ most preferred items or activities. One student required a paired-choice preference assessment to determine preferred items. The presession pairing
intervention involved the researcher giving the student a choice of the preferred items at the beginning of each session. The researcher then engaged with the student in the chosen item or activity for 2 to 4 min, depending on if the activity had a natural end. Problem behavior and accurate academic responding were then measured during an academic demand situation immediately following the intervention.

The authors reported that presession pairing reduced attention- and/or escape-maintained problem behavior in elementary school students during academic demands. They also indicated modest increases in academic responding following the intervention. The pairing session took minimal time and resources and was accepted by and socially valid to teachers, administrators, and participants. However, the intervention was conducted in an analogue setting by the researcher, so ease of implementation and generalization of effects to the classroom and teacher are unknown. The mechanism accounting for the change in behavior is also unknown. Kelly et al. (2015) provided a few possibilities, including that presession pairing may establish the implementer as a conditioned reinforcer or that it may act as a neutralizing routine to reduce the establishing operation for problem behavior. Research has demonstrated reductions in problem behavior following neutralizing routines in the home (Horner, Day, & Day, 1997). Research has also indicated the important role of establishing operations in escape-maintained problem behavior of students and suggests the effectiveness of antecedent-based manipulations like presession pairing to prevent problem behavior in the classroom (Carbone, Morgenstern, Zecchin-Tirri, & Kolberg, 2010; McGill, 1999). Regardless of the effective mechanism, Kelly et al. demonstrated that presession pairing successfully reduced problem behavior during academic demands for three students whose problem behavior functioned as gaining access to attention.
and/or escaping from task demands. However, more research is needed to replicate the findings or to examine its efficacy for reducing problem behavior in the classroom.

The previous literature on presession pairing focused on researcher implementation in an analogue setting. Further research should test the ease of implementation of the intervention by teachers in the natural classroom setting to examine its effectiveness, generalization, and maintenance. Additionally, presession pairing has only been implemented with students diagnosed with autism; thus, its impact on behavior of students with other disabilities and students without disabilities is unknown. Therefore, the current study aimed to further examine the use of presession pairing with students who engage in problem behavior during classroom activities. Specifically, the study aimed to test potential efficacy of teacher-implemented presession pairing in increasing on-task behavior and reducing problem behavior of students with and without disabilities who display problem behavior in inclusive public elementary school classrooms.
CHAPTER TWO: METHODS

Participants

Four elementary school students, kindergarten through 5th grade, in general and special education classrooms and their corresponding classroom teachers participated in this study. The names in this document are pseudonyms to protect participant privacy. Each teacher had one or two students with attention- and/or escape-maintained problem behavior during instructional time in their class. Teachers already utilized classroom management strategies, such as color charts, token systems, or a treasure box, but did not provide students with preferred activities immediately prior to instructional time. Teachers were willing to dedicate at least one 15-min planning period for teacher training and 2 to 5 min before instructional time for presession pairing activities over the course of several weeks. Recruitment flyers were distributed to teachers in the elementary school at a local school district, and teachers contacted the researcher if they met the inclusion criteria and were willing and interested in participating. To meet inclusion criteria, students had to be engaging in problem behavior that interfered with academic activities during at least one academic routine (e.g., math, writing, or circle time). The problem behavior had to be maintained by escape or attention, not tangible or automatic. Examples of problem behavior included prompt dependency, disruption, and talking out. Students may or may not have had a disability or been receiving exceptional student education (ESE) services, and could attend to and participate in group activities. Students who had severe problem behavior, such as self-injurious behavior and extreme property destruction, were excluded from the study.
Karl was a 6-year-old, White Hispanic boy in a general education 1st-grade class. He had an Individualized Education Plan (IEP) for speech impairment and a medical diagnosis of Attention Deficit and Hyperactivity Disorder. He received Tier 2 interventions within a multi-tiered system of supports for Reading and Behavior. Karl’s teacher, Monica, was 48-years old and had been teaching for 24 years. Her highest level of education was a Master’s degree and she was National Board Certified.

Ian was an 8-year-old, White Hispanic boy in a general education 3rd-grade classroom. He did not have an IEP but was classified as an English Language Learner (ELL) and received Tier 2 interventions for Reading. Ian’s teacher, Debbie, was 25 years old and had been teaching 4 years. She had a Bachelor’s degree in Education and was pursuing her Master’s at the time of the study. She also had endorsements in English Speakers of Other Languages (ESOL) and Reading.

Phillip was an 11-year-old, Hispanic boy in a self-contained 4th-grade classroom for varying exceptionalities. He had an IEP for language impairment and was classified as ELL. Due to deficiencies in math and reading on the state standards assessment, he had been retained in 3rd grade. Phillip’s teacher, Veronica, was 53 years old and had been teaching 28 years. Her highest level of education was a Master’s degree in Education.

Fiona was an 8-year-old, White female in a general education 3rd-grade classroom. She did not have an IEP but received Tier 2 interventions for Reading and Behavior. Fiona’s teacher was also Debbie, who was 25 years old and had been teaching 4 years. She had a Bachelor’s degree in Education and was pursuing her Master’s at the time of the study. She also had endorsements in ESOL and Reading.
Informed consent was first obtained from each teacher. The researcher explained the study and asked the teacher to read and sign the consent form. Informed parental consent and student verbal assent were obtained for the potential student participants. Parents were then given a permission form detailing the study, which included the researcher’s contact information for any questions, and asked to complete, sign, and return the form. Students over the age of six received a brief explanation and asked to give verbal assent to participate in the research.

Setting and Materials

This study took place in the natural classroom setting within a local public elementary school. Baseline and intervention occurred in the classroom during an identified problematic academic routine. Karl’s target routine was the English and Language Arts (ELA) mini-lesson, where the students received full group instruction, read a story on the carpet, and then moved to their desks for independent work. Ian’s target academic routine was ELA independent work time at his desk, following full-group instruction. This included worksheets, writing, paper-based assessments, and computer work. Fiona’s target routine was ELA independent work time at her desk, following full-group instruction, which included worksheets, writing, paper-based assessments, and computer work. Phillip’s target routine was Math, including a timed arithmetic worksheet, group instruction, and individual workbook time.

Teacher training occurred in the classroom during teacher planning time or other break time when students were not present. Materials for teacher training included a brief procedures document, teacher script to be used during training and the intervention if necessary, and fidelity checklists. Materials for presession pairing varied depending on the chosen activities. Examples of presession pairing activities included YouTube or Go Noodle videos on the computer, a game
of catch (requiring only a ball), artistic activities (using classroom supplies such as paper, scissors, glue, crayons, and coloring sheets) and taking a walk around campus.

**Measurement**

The primary target response was on-task behavior and the secondary target response was problem behavior. On-task behavior was operationally defined in the same way for all four students. Problem behavior was operationally defined for each individual student in order to determine specific criteria for measurement. These two behaviors were not necessarily exclusive dependent upon the operational definitions created for each individual behavior.

On-task behavior for all students was defined as attending to instruction sitting upright or standing if teacher or activity permitted in designated area with body and eyes facing the teacher (or other student sharing or presenting) or task (unless student was called on to answer a question at the board) and absence of making disruptive vocalizations (e.g., talking out, crying, singing, groaning) or body movements (e.g., bouncing a ball, tapping or kicking desk so that it can be heard 10 feet away). On-task was also defined as following teacher directions (e.g., “take out your materials,” “put down your pencils,” “begin working”) within 3 s. The student may be raising hand while remaining silent when asking for help or waiting to respond to a question. This excluded talking out while raising hand or waiting to be called on. The student may also glance away from the teacher or task for less than 1 second.

Karl’s problem behavior was talking out, which was defined as engaging in disruptive vocalizations, such as words, noises, or utterances (e.g., “I know,” “spiders have 8 legs!” “UGHHH,” crying, talking to peers) during teacher instructional time or independent work time. This excluded when talking after being called on or when told to engage in partner or group interactions. Ian’s problem behavior was prompt dependency, which was defined as requiring a
verbal (e.g., “get to work,” answer number 3,” “this word is dog”), gestural (e.g., pointing to the correct answer or helpful passage on page), or physical prompt (e.g., hand-over-hand guidance to make the correct response) to complete his work during independent seat work that required working on the task while sitting quietly. Intervals were marked when the teacher delivered the prompt (including when the student asked for help).

Phillip’s problem behavior was talking out, which was defined as engaging in disruptive vocalizations, such as words, noises, or utterances (e.g., “I know,” “spiders have 8 legs!” “UGHHH,” crying, laughing, talking to peers) during teacher instructional time or independent work time. This excluded when talking after being called on or when told to engage in partner or group interactions. Fiona’s problem behavior was disruption, which was defined as not sitting in designated area, talking out during silent work time when she was not called to on speak (this did not include talking during partner work time), taunting, making faces at peers (sticking out her tongue while facing and making eye contact with someone, staring or glaring at peer for more than 2s), or making disruptive body movements or sounds (e.g., dancing, tapping, banging materials so it can be heard 10 feet away).

Data on target responses were collected during 15- to 25-min targeted routines. On-task behavior was measured as the percentage of intervals of occurrence using a 10-s whole interval recording system. If the student was on-task for the entire 10-s interval, the observers marked that interval (+). The problem behavior was measured as the percentage of intervals of occurrence using a 10-s partial interval recording system; if the problem behavior occurred at any time during the 10-s interval, observers marked that interval (+). Percentage of intervals with each target behavior were calculated by dividing the number of intervals with the behavior by the total number of intervals in the session and multiplying by 100. Data on these target behaviors
were collected using a printed datasheet (Appendix B) and phone application to indicate the end of each interval.

**Teacher implementation fidelity.** The researcher recorded percentage of steps correctly completed by the teacher during all of presession pairing sessions using the fidelity checklist (Appendix H). The checklist included five items covering the five major steps of the presession pairing procedures to ensure high implementation fidelity. The implementation fidelity was assessed for 100% of the intervention sessions across teachers. Teacher implementation fidelity data indicated that all four teachers implemented the presession pairing intervention with a high degree of fidelity with a mean implementation fidelity score of 93% (range, 60-100%) across sessions and participants. One teacher, Debbie, required a booster training session after intervention session 4 with Fiona. Following this session, her fidelity increased to 100% for the remainder of intervention sessions.

**Social validity.** A 6-point Likert scale survey questionnaire was completed by teachers who participated in the study to assess social validity (Appendix I). The survey questionnaire was adapted from the Intervention Rating Profile (IRP-15; Martens, Witt, Elliot, & Darveaus, 1985) and included 15 items that were assessed using a 6-point Likert-type rating scale along with two open-ended questions. The questionnaire was designed to assess acceptability and perceived efficacy of the intervention as well as to gather information on the most and least preferred aspects of the procedures. A social validity survey, using a 4-question questionnaire with a 3-point scale, was also conducted with student participants to examine whether they liked the intervention and if they wanted to continue using it (Appendix J). This survey was delivered verbally to all four student participants to ensure they were able to understand each question and respond accurately.
Interobserver Agreement (IOA). One research assistant who was a graduate student in the Applied Behavior Analysis program and who was trained on data collection, independently recorded child behaviors to assess IOA during 41% of baseline and 36% of intervention sessions. Interval-by-interval comparisons were used to calculate IOA for both on-task behavior and problem behavior. The number of intervals with agreement between the two observers was divided by the total number of intervals resulting in percent agreement between the two observers. The research assistant also assessed IOA on teacher implementation fidelity during 36% of presession pairing sessions. IOA was calculated by taking the number of steps agreed upon by both observers divided by the total number of steps and then multiplied by 100. IOA for Karl averaged 98% for on-task behavior and 99% for problem behavior. For Ian, IOA averaged 94.7% for on-task behavior and 96.8% for problem behavior. IOA for Phillip averaged 97.6% for on-task behavior and 97.5% for problem behavior. For Fiona, IOA averaged 97.7% for on-task behavior and 97.4% for problem behavior. IOA for teacher implementation fidelity remained at 100% across all participants. Table 1 presents the percentage of sessions in which IOA was assessed and the average IOA across measures and phases for each participant.
Table 1.

Percentage of sessions with IOA assessment and average IOA across phases and participants.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Karl</th>
<th>Ian</th>
<th>Phillip</th>
<th>Fiona</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Collected</td>
<td>OT</td>
<td>PB</td>
<td>IF</td>
</tr>
<tr>
<td>Baseline</td>
<td>33.3</td>
<td>98</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>Intervention</td>
<td>33.3</td>
<td>98</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Note: OT = on-task; PB = problem behavior; IF = implementation fidelity.*
Experimental Design and Procedures

The study employed a concurrent multiple baseline design across participants to examine the impact of the intervention on the target behaviors. Before collecting baseline data, a functional behavior assessment, including a trial-based functional analysis, was conducted to identify the functions of problem behavior and determine the participation eligibility for each student. A preference assessment was also conducted to determine preferred activities to include during the intervention phase.

**Functional Behavior Assessment (FBA).** Once consent was obtained from teachers and parents, the researcher conducted an FBA to ensure that the problem behavior was maintained by attention and/or escape. The teacher completed the Functional Assessment Checklist for Teachers and Staff (FACTS) (March et al., 2000). The FACTS (Appendix K) contained questions designed to identify antecedents, consequences, instructional periods associated with high levels of problem behavior, and hypothetical functions of target problem behavior. Completing the checklist took no longer than 30 min. The researcher also observed the potential student participants for at least 15 min of an academic routine in which problem behavior was reported to occur at a high rate to gather data on antecedents and consequences of the problem behavior. The researcher used the Functional Assessment Observation Form (O’Neill et al., 1997) to identify the hypothesized functions of each student’s problem behavior. One to two observations were conducted for each potential student during the potential target instructional time. Only students whose problem behavior was hypothesized to be maintained by attention or escape moved on to the next phase of FBA. Five students were initially screened using the FACTS; four were moved to the next phase of the FBA and then chosen to participate in the study.
The teacher then conducted a modified trial-based functional analysis in the classroom environment during naturally occurring instructional time to test escape and attention functions (Bloom, Iwata, Fritz, Roscoe, & Carreau, 2011) with instructions and prompting provided by the researcher. Throughout academic time, the teacher conducted attention and escape trials each following a control trial. Each trial took a maximum of 4 min, where each segment lasted 2 min unless ended early due to problem behavior. During control segments, the establishing operation was absent (i.e., the reinforcer was freely available and no demands were placed) and the problem behavior did not result in any consequences. During the test segment, the establishing operation was present and problem behavior resulted in the designated consequence.

The attention condition was conducted during an activity that required teacher attention or assistance, such as teacher-lead small group instruction or teacher assistance during individual work time. The teacher delivered noncontingent attention for the control, then diverted her attention to another task during the test segment. The teacher returned her attention (e.g., offered the student help, redirected the student to his or her work, delivered other comments or gestures) to the student, ending the test segment, contingent upon problem behavior.

The escape condition was conducted during an activity that placed high demands and was associated with high rate of the student’s problem behavior, such as individual worksheet or writing time. During this condition, the student was sitting without any demands being placed and without access to other activities. The teacher then delivered a demand or academic task and the researcher recorded whether the problem behavior occurred within 2 min, ending the trial with the problem behavior occurred. The modification was made to eliminate the removal of the demand contingent upon problem behavior to least disrupt academic instructions. Two to four trials were conducted per day for a total of three to six trials (approximately, 12 to 24 min) for
each condition across 1 to 3 days. The fidelity of conducting the functional analyses was assessed using two fidelity checklists developed and modified based on the procedural steps used by Bloom, Lambert, Dayton, and Samaha (2013). The fidelity checklists consisted of 16 items for attention condition and 11 items for demand condition and assessed whether the teachers implemented the FA procedures consistently across trials (Appendix D). Fidelity was assessed during 50% of all trials and averaged 100%.

**Baseline.** During baseline, the teacher conducted her class as usual, implementing any ongoing classroom management activities (e.g., transition warnings, reprimands, redirections, and color charts). Observation and recording occurred when the students transitioned to the problematic routine (e.g., sit down for math instruction, begin your worksheet) and ended when they began the transition to the next activity (e.g., line up to go to lunch). Each session lasted between 15 and 25 minutes.

**Teacher training and preference assessment.** Following baseline data collection, the researcher set up a time to meet with each teacher and conducted a brief 15-min teacher training. This training included a review of the intervention procedures, informal preference assessment to determine a list of possible preferred activities, development of a script, rehearsal of procedures, and corrective feedback and praise. First, the researcher explained the concept and research behind presession pairing. Then, the teacher and researcher came up with a list of five to ten possible preferred activities, which would last less than 5 min, to be used during the presession pairing sessions. The researcher later used this list to conduct a preference assessment with the target student following the teacher training session (Appendix F).

During training, teachers were involved in the creation of specific procedures and a script for presession pairing in order to ensure contextual fit. Once a script of the procedures was
created, the researcher finalized the fidelity checklist to ensure it fit with the procedures. The researcher first modeled the procedures while the teacher filled out the fidelity checklist. The teacher then rehearsed the procedures using the script (Appendix E) while the researcher observed and filled out the implementation fidelity checklist (Appendix H). The researcher then provided specific praise and corrective feedback if necessary. The teacher was required to reach at least 80% implementation fidelity before entering the intervention phase. The researcher continued to provide specific praise and feedback on teacher fidelity throughout the intervention phase. Throughout the teacher training session, the researcher completed the Teacher Training Fidelity Checklist to ensure that all steps had been completed (Appendix G). During the intervention phase, if teacher implementation fidelity dropped below 80% in any session, the researcher conducted a booster training session. The teacher was given the opportunity to update the script and procedures to make sure high implementation fidelity was possible. The teacher then engaged in rehearsal and received praise and feedback until she reached at least 90% fidelity before returning to the intervention phase of the study.

The researcher also conducted a brief free operant preference assessment with each targeted student before the intervention phase. The researcher presented a verbal list of activities and asked the student to rate them from non-preferred to highly preferred, adapting the preference assessment (Appendix F) based on the student’s age and cognitive functioning. The student indicated at least five preferred activities they would like to engage in with their classmates and teacher. The preference assessment took less than 5 min.

**Presession pairing.** After the baseline phase and teacher training were completed, each classroom moved on to the presession pairing intervention phase during the targeted academic time. As the class transitioned to this academic time, the teacher determined which preferred
activity to engage in each session from the target student’s preferred activity list. The teacher announced the chosen activity to the class and immediately initiated the activity. For example, if the teacher chose a yoga YouTube video, the teacher announced that they would be watching the video and immediately pulled it up on the computer. The teacher then participated in the chosen activity, interacted positively with her students, delivering at least one statement directly to the target student, and provided a transition warning during the activity, following the script and procedures created during teacher training. When the activity came to its natural end after 2 to 5 min, the teacher again praised her students and instructed them to transition to their seats or other designated area to begin academic instruction. The researcher collected data on teacher implementation fidelity while the teacher conducted each presession pairing session. The implementation fidelity checklist was shown to the teacher along with corrective feedback and praise at the end of each intervention session. Following the presession paring activity, observers collected data on child target behaviors (on task and problem behavior) during the instructional activities using the data sheet in Appendix B. Student behavior data collection began when the teacher delivered the transition statement and ended when the teacher instructed the class to transition to the next activity or after a maximum of 30 min. The data from each session was immediately graphed and reviewed to ensure data-based decisions were made if a change was necessary.
CHAPTER THREE: RESULTS

Functional Behavior Assessment

Each teacher participant completed the FACTS to describe their student’s problem behavior in the classroom. Monica indicated that Karl was talking out and disrupting during her language arts lesson at 10:30 in the morning. She stated that he was talking out multiple times per day and was unable to accept negative consequences or peers receiving praise. Monica indicated that triggers for Karl’s talking out included tasks, especially language arts and math, unstructured time, reprimands, and structured non-academic activities with peers and teacher present. Monica stated that Karl was seeking teacher attention and praise. The researcher conducted a 45-min observation during the language arts lesson. During this time, Karl engaged in several disruptions during the transition, refused to apologize, required several prompts to stay quiet and follow directions during the lesson, and cried when another student received a compliment from the teacher.

Debbie completed the FACTS for Ian, identifying that he required many prompts, did not complete work, and often sat at his desk without working. She noted that reading at 9 in the morning was the time where his prompt dependency multiple times. Debbie stated that tasks and reprimands triggered Ian’s prompt dependency, especially reading and comprehension questions on grade level. She notes that he receives adult attention and postpones his work through this behavior. The researcher then conducted a 75-min observation during reading. Ian required many
prompts during independent work time at his desk, he asked for help on almost every questions, and completed no independent work during the observation.

The FACTS for Phillip was completed by Veronica. She selected talking out during math whole group instruction and independent work at noon as his problem behavior. She noted that he was talking out at least once every 2-3 min when tasks were presented. Phillip’s talking out resulted in teacher attention, peer attention, and avoidance of hard tasks or physical effort. During a 30-min observation in math, the researcher noted many instances of talking out to gain attention, especially from peers, and avoid his work.

Debbie also completed the FACTS for Fiona, indicating disruptive behavior was occurring multiple times during reading time. Triggers included tasks, unstructured time, structured non-academic time, and transitions. The only time the problem behavior was not occurring was when Fiona was isolated. Debbie stated that Fiona’s disruptions resulted in adult attention, peer attention, and avoidance of hard tasks and teacher reprimands. The researcher observed Fiona for 30 min during reading and noted several instances of talking out, disruptive noises, Fiona getting out of her seat, and making faces at peers, resulting in peer attention and lack of work completion.

Figure 1 displays data from the trial-based functional analysis. As shown in the figure, the problem behavior of two participants, Karl and Phillip, was most likely maintained by attention. For Karl, problem behavior occurred 0% of the control segments and 80% of the test segments during attention trials whereas problem behavior occurred at the same 50% rate during both control and test segments of demand trials. For Phillip, problem behavior did not occur in the control segments and occurred 100% of the test segments during the attention trials. As with Karl, problem behavior occurred 50% of the control and test segments during demand trials. The
data indicated that Fiona’s problem behavior may have been maintained by both escape and attention. The escape condition yielded 33% of the control segments and 66% of the test segments during demand trials and 0% of control and 100% of test segments during attention trials. Ian’s problem behavior was most likely maintained by escape. The escape condition yielded no problem behavior in the control segments and 75% of the test segments during escape trials and 100% of control segments and 75% of the test segments during attention trials. The high percentage of attention noted in the control trials for Ian were a result of the operational definition of his prompt dependency. The occurrence of prompt dependency was noted when the teacher delivered a prompt or any attention, which explains the 100% occurrence in the control trials of the attention condition.

**On-Task Behavior and Problem Behavior**

Figure 2 displays data from baseline and intervention. As shown in the figure, the presession pairing intervention increased on task behavior and reduced problem behavior for all four participants. For Karl, the mean baseline level was 27% (range, 19 to 32%) for on-task behavior and 13.7% (range, 10 to 18%) for problem behavior. During the intervention phase, on-task engagement increased to 71.8% (range, 45 to 83%) and problem behavior decreased to 6% (range, 2 to 11%). For Ian, the mean baseline level was 27% (range, 22 to 34%) for on-task behavior and 19.3% (range, 12 to 27%) for problem behavior. During the intervention phase, on-task behavior increased to 56% (range, 43 to 73%) and problem behavior decreased to 3.3% (range, 0 to 12%). For Phillip, the mean baseline level was 17% (range, 11 to 30%) for on-task behavior and 29.9% (range, 10 to 51%) for problem behavior. During the intervention phase, on-task behavior increased to 58.5% (range, 37 to 68%) and problem behavior decreased to 11% (range, 8 to 15%). For Fiona, on-task behavior increased to from 15.3% (range, 10 to 24%) in
baseline to 63.6% (range, 58 to 75%) during the intervention and problem behavior decreased from 48.4% (range, 39 to 59%) in baseline to 12% (range, 5 to 22%) during the intervention. Two participants, Karl and Phillip, showed an increasing trend of on-task behavior and a decreasing trend of problem behavior in the intervention phase. The other two participants, Ian and Fiona, had stable but slightly variable on task and problem behavior during intervention.

Social Validity

Social validity scores on the 15-quesiton, 6-point Likert Scale for teachers ranged from 4 to 6, with an average score of 5.68 out of 6. Teachers rated the intervention as highly effective and easy to implement, with anecdotal reports that it did not disrupt typical classroom routines and had a positive effect on all students. Students also rated the intervention as highly likeable on a 3-point Likert scale. Student social validity scores ranged from 2 to 3, with an average score of 2.8 out of 3 points.
Figure 1. Percentage of trials with problem behavior across control (dark grey) and test (light grey) trials for attention and escape conditions.
Figure 2. Percentage of intervals with on task engagement (open data points) and problem behavior (filled data points) across days for 4 participants.
CHAPTER FOUR:

DISCUSSION

This study further examined the use of presession pairing in classroom settings with four elementary students with various levels of academic and behavioral functioning, which was implemented by classroom teachers to improve student behavior. The results indicate that a brief (2 to 5 min) interaction between students and their classroom teacher in identified preferred activities lead to an increase in on-task behavior and a reduction in problem behavior during subsequent academic instructional time. On-task behavior immediately increased for all four participants, with an increasing trend for two participants. The decrease in problem behavior was marked for one participant (Fiona) but modest for the other three participants.

These data expand upon the previous literature in several ways. First, these results support the findings of Kelly et al. (2015) that presession pairing is an effective antecedent intervention for escape- and attention- maintained problem behavior in students. This study expanded those findings to students with varying disabilities and academic levels. Additionally, this study showed the ease of implementation of presession pairing by teachers within the natural classroom setting. In this study, presession pairing did not interfere with typical classroom instruction, which indicates that this type of antecedent intervention may be practical for teachers to implement without requiring excessive time or resources (Taylor & Fisher, 2010), allowing teachers to prevent problem behavior in advance as shown in the literature on antecedent interventions (Kern, Choutka, & Sokol, 2002; Conroy & Stichter, 2003).
Anecdotally, the researcher noted that the teachers began using a more positive approach during instructional time following a few intervention sessions. At the outset of the study one teacher reported that she was having behavioral and academic issues with most of her students. At the end of the study, this teacher reported that her whole class was better and she was very happy. The researcher noted an increase in overall positive interactions between the teachers and all students, shifting from a focus on reprimanding problem behavior to praising appropriate behavior. This positive effect was also reflected in the social validity surveys of both the teachers and students. Specifically, the teacher responses to the open-ended questions indicated that that intervention was easy to implement and improved the behavior of their entire class, not just the target students. Teacher participants reported that they planned to continue using the intervention after the study ended, emphasizing buy-in and ease of implementation within the classroom.

The participants in this study all exhibited mild or moderate problem behavior and off-task behavior, indicating that a presession pairing intervention may greatly benefit students who do not require intensive individualized behavior interventions in school. Therefore, presession pairing may be considered as a possible Tier 2 intervention within a multi-tiered system of supports for students exhibiting off-task and mild, attention- or escape-maintained problem behavior in the classroom. To date, there has been no research testing the efficacy of presession pairing as a Tier 2 intervention. However, this study suggests that the entire class may benefit from this intervention and that the intervention can be tailored to one or a few students needing additional behavioral support in the classroom. Further research should be done to establish presession pairing as an evidence-based Tier 2 intervention.

There are several possible mechanisms to explain the effects of this research. First, the presession pairing activity may facilitate the establishment of the teacher as a conditioned
reinforcer. Through joint engagement, the teacher paired herself with the preferred activities. This explanation may be shown if the students’ on-task engagement maintain and problem behaviors remain low in routines temporally removed from the presession pairing activity or when the activity is not used. This may also be tested by removing the interaction component in future research. If the effects maintain solely from the activity, without any pairing with the teacher, the mechanism may not be conditioning the teacher as a reinforcer. A second possible explanation is that the presession pairing activity may satiate the students with attention and/or escape maintained problem behavior by providing them with attention and a break from academics. Finally, presession pairing may be involved in behavioral momentum, with the engagement in the preferred activity increasing the probability of engagement in academic demands. Future research should seek to determine which mechanism is responsible for the increases in on task engagement and decreases in problem behavior for the four students in this research.

**Limitations.** There were a few limitations of this study. First, there was no evaluation of maintenance and generalization of the intervention. Due to time constraints, follow-up data were not collected. However, teachers anecdotally reported that they continued to use the presession pairing intervention after data collection ended. Future research should collect maintenance data to show whether the presession pairing activity continues to be effective over time. The intervention was also not tested for routines other than the one targeted instructional time. Future studies should test the efficacy of the presession pairing intervention in several academic routines. Also, new guidelines suggest collecting at least five baseline data points before introducing the intervention to show experimental control in using a multiple baseline design of single subject research (Kratochwill et al., 2013). The first two participants of this study did not
meet this criterion, though they met the previous standard of at least three baseline data points. Finally, the FBA procedures in this study did not include a true functional analysis with experimental manipulation of consequences for each possible function of behavior because the functional consequence was not delivered contingent on problem behavior during the demand trials. Instead the behavior was recorded and the trial was ended immediately without consequence (e.g., the work was not removed). This modification was made to ensure that students did not miss out on instruction and the interference with typical classroom routines was minimal. However, future researchers may want to include a standard functional analysis or implement the trial-based FA procedures suggested by Bloom, Iwata, Fritz, Roscoe, and Carreau (2011) to ensure the correct behavioral function is identified.

**Future directions.** There are several directions for future research. As stated above, further research should be conducted to test the efficacy and ease of implementation of presession pairing as a Tier 2 intervention. The intervention was effective for four elementary aged students exhibiting off task and mild problem behavior in general and special education settings. Next, it should be tested across a wider range of disabilities, behaviors, and ages. Also, research should be done to test whether teacher self-efficacy does improve following the use of presession pairing activities. Researchers may include a pre- and post-test of teacher self-efficacy or optimism so that these results can be reported. Additional research questions include whether there is a difference in effects based on the length of the presession pairing activity and whether there may be a delay between presession pairing and the targeted routine (e.g., Would a presession pairing activity in the morning show effects during afternoon instructional time?).

Despite these limitations, the study demonstrated that presession pairing may be a viable antecedent intervention that can be implemented by teachers in natural classroom settings where
mild problem behavior occurs. Presession pairing reduced student problem behavior and increased on task behavior without any manipulation of consequences. There may be benefits to incorporating a presession pairing activity prior to many instructional routines.
REFERENCES


APPENDICES
Appendix A: Recruitment Flyer

Teacher-Implemented Presession Pairing to Increase Student On-Task Behavior and Reduce Problem Behavior in Public School Classrooms

PARTICIPANTS NEEDED FOR A POSITIVE BEHAVIOR INTERVENTION RESEARCH STUDY!

Purpose:
The purpose of this study is to examine the use of presession pairing, during which the teacher engages in a preferred activity with students before problematic academic classroom routines. Specifically, the study aims to test the potential efficacy of teacher-implemented presession pairing in reducing problem behavior and increasing on-task behavior of students with disabilities in inclusive public elementary school classrooms.

Teacher Eligibility Criteria:
- At least one student engaging in problem behavior during academic/instructional time
- Does not currently engage class in preferred activity before transition to academic time
- Willing to dedicate one 15-min planning period to a teacher training session
- Willing to engage in 2 to 5-min preferred activities with class before academic time

If you have any questions or are interested in participating and have students that may benefit from this intervention, please contact:
Rachel Sofarelli, B.A., RBT
Master’s Student in Applied Behavior Analysis at the University of South Florida
Email: rsofarelli@mail.usf.edu
Appendix B: Student Behavior Data Sheet

Interval Recording Sheet (Researcher Use)

Data Sheet

Date: ___/___/___ Start time: _______ End time: _______
Observer:_________________________
Class: ___________________      Academic Period: _______________

Clearly mark (+ or -) if the child exhibited problem behavior at any point during the 10-s interval and/or on-task for the entire 10-s interval.

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On-Task Behavior: # of Agreements ____/ # of Intervals____=____%
Appendix C: Trial-Based Functional Analysis Data Sheet

Conduct trials throughout the day over the course of a week. Each trial consists of two segments (control, then test).  **Control:** (a) If no problem behavior (PB) by the end of two min, circle "-" and go to test.  (b) If PB occurs before two min, circle "+," end segment immediately, and go to test.  **Test:** (a) If no PB by the end of two min, circle (-) and end segment.  (b) If PB occurs before two min, deliver specified consequence, circle "+," and end segment.  Try to conduct 20 trials of each type, and summarize as % of each trial type with PB.

**Attention:**  
Control: Stand near student; deliver noncontingent attention (pleasant conversation, no tasks).  
Test: Stand near student but ignore (no tasks); deliver attention only following problem behavior.

**Escape:**  
Control: Observe while no task demands are present.  
Test: Deliver frequent prompts to engage in difficult work; remove work following problem behavior.

**Client:** ___________  **Start Date:** ___________  **End Date:** ___________

Problem Behavior: _______________  **Failed Trials:** __________
Observer: Primary/Reliability (circle one)  Therapist: __________

<table>
<thead>
<tr>
<th>Trial</th>
<th><strong>Attention</strong> Control</th>
<th><strong>Test</strong></th>
<th><strong>Escape</strong> Control</th>
<th><strong>Test</strong></th>
<th>Tx Int</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>5</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>6</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>7</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>8</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>9</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>10</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>Y</td>
</tr>
</tbody>
</table>

% PB

**PB Function** (check as many as you believe apply):

Attention _____  Escape _____  Unclear _____

*Only check unclear if you did not check any others.

Adapted from 2007 The Florida Center on Self-injury
# Appendix D: Trial-Based FA Implementation Fidelity Checklist

Client Code: ________  Therapist Code: _____  Recorder: _________

Trial #: ___________  Date: _________

<table>
<thead>
<tr>
<th>Attention Condition</th>
<th>Was the procedure implemented accurately?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher: Begin 2-min <strong>control segment</strong> by sitting/standing next to student (1-2 feet away) and direct the student toward a moderately preferred activity.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>2. Researcher: Activate stopwatch.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>3. Teacher: Deliver continuous attention throughout the 2-min segment.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>4. If student leaves the seat, follow him and maintain proximity (3-5 feet away).</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>6. If student engages in behavior that interferes with any aspect of the trial, end the trial and record a failed trial on the data sheet. Conduct the trial at a later time.</td>
<td>Y / N / NA</td>
</tr>
</tbody>
</table>
| 7. End the segment if client engages in target problem behavior.  
  • Mark occurrence of target behavior in datasheet. | Y / N / NA |
| 8. If target behavior does not occur during, end the segment after 2 min.  
  • Mark non-occurrence of target behavior in datasheet. | Y / N / NA |
| 10. Teacher: Begin 2-min **test segment** by sitting next to student (1-2 feet away) and directing student toward a moderately-preferred activity | Y / N / NA |
| 11. Researcher: Activate the stopwatch | Y / N / NA |
| 12. Teacher: State that you have to do work and turn/walk away from the student. | Y / N / NA |
| 13. If student leaves the seat at any time during the segment, follow him and keep close proximity (3-5 feet). Do not interact with him. | Y / N / NA |
| 14. End the segment/trial if student engages in behavior that interferes with any aspect of the trial and record a failed trial on the data sheet. Conduct the trial at a later time. | Y / N / NA |
| 15. If target problem behavior occurs, deliver attention about 10 s, and end the segment/trial.  
  • Mark occurrence of target behavior in datasheet. | Y / N / NA |
| 16. If target problem behavior does not occur after 2 min. End the trial.  
  • Mark non-occurrence of target behavior in datasheet. | Y / N / NA |

Y = 1 / N = 0

**Fidelity Scores (%)**: \[
\text{[total points earned/total possible points]} \times 100
\]

Client Code: ________  Therapist Code: _____  Recorder: _________
### Demand (Escape) Condition

<table>
<thead>
<tr>
<th>Step</th>
<th>Instructions</th>
<th>Is procedure implemented accurately?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Teacher:</strong> Begin the <strong>control segment</strong> by having client sit without any toys or materials. Do not deliver attention for the entire 2-min segment. Do not present any demands or task activities.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Researcher:</strong> Activate stopwatch.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>3.</td>
<td>If student engages in behavior that interferes with any aspect of the trial, end the trial and record a failed trial on the data sheet. Conduct the trial at a later time.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>4.</td>
<td>If target problem behavior occurs, immediately end the segment. • Mark occurrence of problem behavior in the datasheet.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>5.</td>
<td>If target behavior does not occur, end the segment after 2 min. • Mark non-occurrence of problem behavior in the datasheet.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Teacher:</strong> Begin the <strong>test segment</strong> by sitting next to student (1-2 feet away) and presenting task demands.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>7.</td>
<td><strong>Researcher:</strong> Activate stopwatch</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>8.</td>
<td><strong>Teacher:</strong> Use three-step prompting (verbal, modeled, and physical prompts) to prompt student to complete the task.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>9.</td>
<td>If student tries to leave the seat, block the client and continue to prompt to engage in the task.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>9.</td>
<td>End the trial if student engages in behavior that interferes with any aspect of the trial and record a failed trial on the data sheet. Conduct the trial at a later time.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>10.</td>
<td>If target problem behavior occurs, stop the segment. • Mark occurrence of problem behavior in the datasheet.</td>
<td>Y / N / NA</td>
</tr>
<tr>
<td>11.</td>
<td>Stop the segment/trial if target problem behavior does not occur after 2 min. • Mark non-occurrence of problem behavior in the data sheet.</td>
<td>Y / N / NA</td>
</tr>
</tbody>
</table>

Y = 1 / N = 0

**Fidelity Scores (%):** [total points earned/total possible points] x 100
Appendix E: Teacher Training Procedures

Greetings: Good morning/afternoon. Thank you so much for taking the time out of your busy schedule to participate in this training. Today I will introduce you to the presession pairing intervention and we will come up with implementation procedures and a script. Then, you will have the opportunity to practice and receive feedback to ensure we are ready to move into the intervention sessions.

Presession Pairing Overview: Presession pairing is a research-based, antecedent-based intervention during which the teacher engages in a highly-preferred activity with the student exhibiting escape- or attention-maintained problem behavior immediately preceding the problematic academic time.

Procedures: (Provide teacher with a copy) I would like to read over the general procedures with you at this time and incorporate any feedback or suggestions you have to make this best fit to your class. As we go over each step, please give input on specific additions you would like to include in the procedures and script so that it fits well within your schedule and routines.

Presession Pairing Procedures and Teacher Script

- Immediately preceding transition to academic time, prompt class to transition to designated area by saying, “Okay, class let’s sit on the carpet (or other designated area)”

- As the class transitions to the carpet (or other designated area), select an activity from the student preference list. Tell the class the activity for that session and for how long it will take place. For activities with a natural end, like videos or songs, that will signal the end of the presession pairing session. For other activities, like playing catch or another class game, set a timer for 5 min. Ideally, pick a moment when you are in control of the activity (e.g., you catch the ball) that is around the 5-min time mark to end the activity.

- During the activity, engage with the students, provide plenty of praise and positive statements, like “great job!” or “This is so fun” or “I love your dance moves!” or “Great catch!” Specifically, provide at least one positive comment or interaction with the targeted student.

- Provide a time warning about halfway through the activity, such as, “Two more minutes until math, and then we will rest or go home,” etc. (The use of a first, second, and then statement shows the students there will be another preferred activity following the academic demand time so it will be less aversive.)

- When the activity comes to a natural end or when the 5-min timer rings (depending on the activity), provide praise and/or a positive comment and high-fives and instruct the class to take their seats for academic time using a first, then statement to remind them what is coming next in the routine (ex. “Okay class, take your seats. First we will do the math worksheets and then we will have recess).
**Teacher Implementation Fidelity Checklist:** (Provide teacher with a copy) This is a general overview of the steps you will complete during each intervention session. I will use this to ensure that you are following to procedures and any student behavior changes are due to these specific procedures. I will provide you with a copy of the completed checklist after each session.

**Model:** I will now model the procedures for you and I would like for you to fill out the fidelity checklist as I go so you can see what each step looks like. If you notice anything you would like to modify during this time, please let me know.

**Rehearsal and Feedback:** Now, I would like for you to practice the procedures while I fill out the checklist. When you are finished, we will go over each step to make sure they are straightforward and easy to implement. … Great job! I loved how you (specific praise). Give corrective feedback, if necessary.

*Teachers will be involved in the creation of specific procedures and a script for presession pairing in order to ensure contextual fit. These activity scripts will be included here once created during the study.*

**Conclusion:** Do you have any questions? Thank you so much again for taking the time to meet with me. I look forward to getting started with the intervention! If, at any time, you have questions or concerns, please do not hesitate to contact me.
Appendix F: Student Preference Assessment Form

<table>
<thead>
<tr>
<th>Activity</th>
<th>Highly Preferred</th>
<th>Somewhat Preferred</th>
<th>Not Preferred at All</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoga</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simon Says</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing Catch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dancing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Videos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

List of preferred activities was developed during teacher training and varied across individual teachers and students.
# Appendix G: Teacher Training Fidelity Checklist

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greeting</td>
<td></td>
</tr>
<tr>
<td>Overview</td>
<td></td>
</tr>
<tr>
<td>Review Presession Pairing procedures</td>
<td></td>
</tr>
<tr>
<td>Incorporate Teacher Feedback into procedures</td>
<td></td>
</tr>
<tr>
<td>Discuss Implementation Fidelity Checklist</td>
<td></td>
</tr>
<tr>
<td>Model of procedure</td>
<td></td>
</tr>
<tr>
<td>Provide teachers with opportunities to rehearse</td>
<td></td>
</tr>
<tr>
<td>Provide praise and feedback, if applicable</td>
<td></td>
</tr>
<tr>
<td>Ask if there are questions</td>
<td></td>
</tr>
</tbody>
</table>

(# of “Yes” answer: _____/9 total steps) *100%

Score: _____%
# Appendix H: Teacher Implementation Fidelity Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher announced activity to class during transition to academic/instructional time.</td>
<td>Yes/No</td>
</tr>
<tr>
<td>2. Teacher initiated chosen activity with class.</td>
<td>Yes/No</td>
</tr>
<tr>
<td>3. Teacher delivered at least one positive comment to targeted student during activity.</td>
<td>Yes/No</td>
</tr>
<tr>
<td>4. Teacher delivered praise to class.</td>
<td>Yes/No</td>
</tr>
<tr>
<td>5. Teacher delivered first, then statement before transitioning to academic/instructional time.</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Total Yes: 1/5</td>
<td></td>
</tr>
<tr>
<td>Percentage of Completed Steps:</td>
<td></td>
</tr>
</tbody>
</table>
Appendix I: Teacher Social Validity Survey

Adapted IRP-15

Adapted from the IRP-15 Copyright, 1982. Brian K. Martens & Joseph C. Witt
Please circle the number that best describes your agreement or disagreement with each statement using the scale below.

1= Strongly disagree  2= Disagree  3= Slightly disagree  4= Slightly agree  5= Agree  6= Strongly agree

1. This was an acceptable intervention for the problem behavior engaged in by targeted students in my class.
   1  2  3  4  5  6

2. Most teachers would find this intervention appropriate for behavior problems in addition to those described.
   1  2  3  4  5  6

3. This intervention proved effective in changing the overall problem behavior and academic engagement for targeted students in my class.
   1  2  3  4  5  6

4. I would suggest the use of this intervention to other teachers.
   1  2  3  4  5  6

5. The problem behavior was severe enough to warrant use of this intervention.
   1  2  3  4  5  6

6. Most teachers would find this intervention suitable for the behavior problems in their class.
   1  2  3  4  5  6

7. I would be willing to use this intervention in the classroom setting with other students.
   1  2  3  4  5  6

8. This intervention did not result in negative side effects for children in my class.
   1  2  3  4  5  6

9. This intervention would be appropriate for a variety of children and classrooms.
   1  2  3  4  5  6

10. This intervention was consistent with those I have used in classroom settings.
    1  2  3  4  5  6
11. This intervention was a fair way to handle the problem behavior in my classroom.
   1 2 3 4 5 6

12. This intervention was reasonable for the behavior problems in my classroom.
   1 2 3 4 5 6

13. I liked the procedures used in this intervention.
   1 2 3 4 5 6

14. This intervention was a good way to handle the problem behaviors in my classroom.
   1 2 3 4 5 6

15. Overall, this intervention was beneficial for the students in my classroom.
   1 2 3 4 5 6

16. What did you like best about this intervention?

17. What did you dislike, if anything, about this intervention?
Appendix J: Student Social Validity Survey

1= Not at All   3= A Little   5= A Lot

1. I liked playing with my teacher before class.
   1   3   5

2. Playing with my teacher before class helped me work harder.
   1   3   5

3. I liked the activities we did before class.
   1   3   5

4. I want my teacher to keep playing with me before class
   1   3   5

This survey was adapted depending on the age and cognitive functioning of the participants. Fewer response options and a verbal survey were given.
Appendix K: Functional Assessment Checklist for Teachers and Staff

Efficient Functional Behavior Assessment: The Functional Assessment Checklist for Teachers and Staff: Part A

Student/Grade: Date:
Interviewer: ___________________________  Respondent(s): ___________________________

Student Profile: Please identify at least three strengths or contributions the student brings to school.
___________________________________________________________________________________
___________________________________________________________________________________

Problem Behavior(s): Identify problem behaviors

<table>
<thead>
<tr>
<th>Tardy</th>
<th>Fight/Physical Aggression</th>
<th>Disruptive</th>
<th>Theft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unresponsive</td>
<td>Inappropriate Language</td>
<td>Insubordination</td>
<td>Vandalism</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>Verbal Harassment</td>
<td>Work not done</td>
<td>Other</td>
</tr>
<tr>
<td>Verbally Inappropriate</td>
<td>Self-injury</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe problem behavior: ____________________________________________________________

Identifying Routines: Where, When and With Whom Problem Behaviors are Most Likely.

<table>
<thead>
<tr>
<th>Schedule (Times)</th>
<th>Activity</th>
<th>Likelihood of Problem Behavior</th>
<th>Specific Problem Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low 1 2 3 4 5 6 High</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>

List the Routines in order of Priority for Behavior Support: Select routines with ratings of 5 or 6. Only combine routines when there is significant (a) similarity of activities (conditions) and (b) similarity of problem behavior(s). Complete the FACTS-Part B for each of the prioritized routine(s) identified.

<table>
<thead>
<tr>
<th>Routine # 1</th>
<th>Problem Behavior(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine # 2</td>
<td></td>
</tr>
<tr>
<td>Routine # 3</td>
<td></td>
</tr>
</tbody>
</table>

Efficient Functional Behavior Assessment: The Functional Assessment Checklist for Teachers and Staff: Part B

Step 6
Routine/Activities/Context: Which routine (only one) from the FACTS-Part A is assessed?

<table>
<thead>
<tr>
<th>Routine/Activities/Context</th>
<th>Problem Behavior(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 7
Provide more detail about the problem behavior(s):

- What does the problem behavior(s) look like?
- How often does the problem behavior(s) occur?
- How long does the problem behavior(s) last when it does occur?
- What is the intensity/level of danger of the problem behavior(s)?

Step 8
ANTECEDENTS: TRIGGERS AND SETTING EVENTS
What are the events that predict when the problem behavior(s) will occur? (Predictors).

Identify the trigger generally
1. In this routine, what happens most often just before problem behavior?
2. If you put this trigger in place 10 times, how often would it result in problem behavior?
3. Does problem behavior ever happen when (opposite of trigger or trigger absent)?

<table>
<thead>
<tr>
<th>Triggers</th>
<th>Tasks</th>
<th>Reprimands</th>
<th>Transitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstructured time</td>
<td></td>
<td>Structured/ non-academic activities</td>
<td>Isolated, no-one around activities</td>
</tr>
</tbody>
</table>

Identify specific features of the trigger

- If tasks (e.g., group work, independent work, small-group instruction, lecture)...
- If unstructured time...
- If reprimand...
- If structured, nonacademic activities
- If transitions
- If isolated

Describe the task in detail (e.g., duration, ease of task for student), what features of it likely are aversive to the student and why is this hypothesized?
Describe the setting, activities, and who is around
Describe who delivers the reprimand, what is said, and what the purpose of the correction is
Describe the context, who is around, what activities are going on, what behaviors are expected?
Describe the activity that is being terminated and the one that is being transitioned to. Identify whether any of the activities are highly preferred or non-preferred, which are structured versus non-structured
Where did the behavior occur? What features of the environment might be relevant?

Step 9  Are setting events relevant?
1. Is there something that, when present makes it more likely that the trigger identified above sets off the behavior?
2. If yes, is this event present sometimes and absent others? Does the behavior occur only when the event is present?

<table>
<thead>
<tr>
<th>Setting Events</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Correction failure in previous class</td>
<td>Conflict at home</td>
<td>Hunger</td>
<td></td>
</tr>
<tr>
<td>Peer conflict</td>
<td>Correction from adult earlier in day</td>
<td>Lack of sleep</td>
<td></td>
</tr>
<tr>
<td>Change in routine</td>
<td>Homework/assignment not completed</td>
<td>Medication (missed or taken)</td>
<td></td>
</tr>
</tbody>
</table>

Step 10  CONSEQUENCES
What consequences appear most likely to maintain the problem behavior(s)?

Identify the consequence generally:
In the routine identified, when the trigger occurs and problem behavior happens, what occurs next?
1. What do you do? What do other students do? What activities happen or stop happening?
2. Narrow it down: Take each consequence identified above:
   a. Would the behavior still happen if that consequence couldn’t occur (e.g., if peer attention, no other students were around)? If your attention, would the behavior still occur if you were not around? If escape, would the behavior still occur if the task was easier?)
   b. Of the last 10 times you saw the behavior, how often did this consequence occur?

<table>
<thead>
<tr>
<th>Things that are Obtained</th>
<th>Things Avoided or Escaped From</th>
</tr>
</thead>
<tbody>
<tr>
<td>adult attention</td>
<td>hard tasks</td>
</tr>
<tr>
<td>peer attention</td>
<td>reprimands</td>
</tr>
<tr>
<td>activity</td>
<td>peer negatives</td>
</tr>
<tr>
<td>money/things</td>
<td>physical effort</td>
</tr>
<tr>
<td></td>
<td>adult attention</td>
</tr>
</tbody>
</table>

Identify specific features of the Consequence

<table>
<thead>
<tr>
<th>Identify specific features of the consequence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>If adult or peer attention is obtained or avoided</td>
<td>Define who delivers attention, what they say, and how long the attention typically lasts. What does the student do following this attention—is there a back-and-forth that occurs? Does behavioral escalation occur?</td>
</tr>
<tr>
<td>If an activity or request follows or is removed</td>
<td>Describe the specific activity including who else is present, what the activity consists of, and how long it lasts.</td>
</tr>
<tr>
<td>If tangible items are obtained or removed</td>
<td>Describe the specific item(s) obtained including who else is present and how long the student has access to the item.</td>
</tr>
<tr>
<td>If sensory stimulation possibly occurs or is removed</td>
<td>Describe the context, who is around, what activities are going on, what behaviors are expected?</td>
</tr>
</tbody>
</table>

SUMMARY OF BEHAVIOR

Identify the summary that will be used to build a plan of behavior support.

<table>
<thead>
<tr>
<th>Setting Events</th>
<th>Trigger</th>
<th>Behavior</th>
<th>Consequence</th>
</tr>
</thead>
</table>

How confident are you that the Summary of Behavior is accurate?

<table>
<thead>
<tr>
<th>Not very confident</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Very Confident</th>
</tr>
</thead>
</table>


Appendix L: IRB Approval Letter

September 5, 2017

Rachel Sofarelli
ABA-Applied Behavior Analysis
Tampa, FL 33612

RE: Expedited Approval for Initial Review
IRB#: Pro00031705
Title: Teacher-Implemented Presession Pairing to Increase Student On-Task Behavior and Reduce Problem Behavior in Public School Classrooms

Study Approval Period: 9/4/2017 to 9/4/2018

Dear Ms. Sofarelli:

On 9/4/2017, the Institutional Review Board (IRB) reviewed and APPROVED the above application and all documents contained within, including those outlined below.

Approved Item(s):
Protocol Document(s):
Study Protocol R.Sofarelli v1 8.30.17

Consent/Assent Document(s)*:
Parental Informed Consent v1 8/30/17.pdf
Teacher Informed Consent v1 8/24/17.pdf
Student Assent Script v1 8/24/17

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent documents are valid until the consent document is amended and approved. The Student (Child) Assent is not a stamped form.

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review
Appendix M: Manatee County Approval Letter

SCHOOL DISTRICT OF MANATEE COUNTY

August 18th, 2017

Dear Ms. Sofarelli,

The School District of Manatee County has agreed to participate in your research proposal. A copy of this letter must be available to all participants at the designated school through which your research is being conducted. This is to assure them your research has been approved by the district. Approval is given for your research under the following conditions:

1) The designated school for which your research will be conducted must be approved and supervised by an ESE Behavior Specialist.
2) Participation is to be on a voluntary basis. That is, participation is not mandatory and you must advise all participants that they are not obligated to participate in your study.
3) If the principal agrees the school will participate, it is up to you to find out what rules the school has for allowing people on campus and you must abide by the schools’ check-in policy. You will not be allowed on any school campus without first following the school’s rules for entering campus grounds.
4) Parent permission must be obtained for all student involved in your research. You must indicate in your letter to the parent all the types of data you will be collecting (i.e. race, gender, FSA scores, etc.). You must have this consent before you begin your research of data.
5) Confidentiality must be assured for all. That is, all data must be aggregated such that the participants cannot be identified. Participants include the district, principals, administrators, teachers, support personnel, students and parents.
6) Data collection cannot occur while the students are testing (i.e. FSA, iReady, Benchmark Assessments, ELL, etc.). It is up to you to find out what the testing schedule is for the participants and schedule data collection accordingly.
7) This approval will expire at the end of the 2017-2018 school year. You will have to contact us at the time if you feel your research approval should be extended.
8) Your proposal indicates that you will come into contact with students. You must be fingerprinted and drug tested and you will not be allowed to do your research until this process has been completed.

Good luck with your research,

[Signatures]

Karen Mills
ESE Director

Dahlia Parry
Behavior Specialist

Phyllis Herring Cavasso
Behavior Specialist

P.O. Box 9669
Bradenton, Florida
34209-9669
216 Manatee Ave. W.
Bradenton, FL
34205
PH: (941) 708-8779
www.manateeschools.net

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