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School Professional Coaching on Facilitation of Prevent-Teach-Reinforce (PTR) Model for Students with Persistent Problem Behavior

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School Professional Coaching on Facilitation of Prevent-Teach-Reinforce (PTR) Model
for Students with Persistent Problem Behavior

by

Rachel Ayres

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

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Keywords: school-based intervention, Tier 3 intervention, training, collaboration,
functional behavior assessment

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DEDICATION

I dedicate this manuscript to my husband, David, and our three cats, Ralph, Lola, and Delilah. Thank you kitties for your furry cuddles; and thank you, David, for your unwavering patience, love, and support throughout this journey.

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ABSTRACT

This study evaluated the process and outcomes of the Prevent-Teach-Reinforce (PTR) model implementation with school professionals' facilitation for elementary school students with problem behavior. Two school professionals (behavior specialist and student support staff) were trained through a 2-phase coaching process to facilitate the PTR implementation: co-facilitation and independent facilitation. Four elementary school classroom teachers and four students with challenging behavior participated in this study spanning across two schools. Following coaching, school professionals independently facilitated the PTR process with fidelity which led to desired changes in student behavior. Results indicate that a multi-step coaching process is effective in training school professionals to implement PTR independently with fidelity, although some limitations exist. School professionals effectively produced desired behavioral outcomes for students in school even when the PTR process was implemented independently. School professionals, teachers, and students found the PTR process, interventions, and coaching to be effective and favorable.

INTRODUCTION

Persistent problem behavior among students in schools is repeatedly identified as a major concern by teachers, administrators, and parents (Dunlap et al., 2010; Emerson et al., 2001). Engagement in persistent problem behavior can lead to a number of potential negative outcomes including peer disapproval and poor academic progress (Bullock & Gable, 2006; Buchanan et al., 2016; Kremer et al., 2017; Trout et al., 2003). Furthermore, the persistent problem behavior can lead to negative trajectories such as school drop-out (McFarland et al., 2018), high rates of substance abuse (McKenna et al., 2016), and incarceration (Bullock & Gable, 2006) if the behavioral issues are not properly addressed in schools. Another concern of persistent problem behavior among students is its negative effect on teachers' job performance and satisfaction (Public Agenda, 2004; Sutchter et al., 2016). The literature reports that each office discipline referral takes away 20 min to 45 min of instruction time (Horner & Sugai, 2003). Therefore, when teachers are dealing with problem behavior, they are not able to attend to academic responsibilities within their classrooms which negatively impacts the students and the teacher.

Teachers frequently allude to discipline issues as a major cause for distress, which is correlated with their decision to leave the profession (Boyd et al., 2011; Egyed & Short, 2006; Strickland-Cohen et al., 2016). Specifically, of teachers who decide to leave the profession, 55% report their primary reason to be job dissatisfaction, and 17% of those identify the reason for dissatisfaction to be discipline issues linked to problem behavior in class (Sutchter et al., 2016). Attrition is a huge problem within the field of education, as nearly 8% of teachers leave the field each year, leading to high rates of teacher shortages nationwide, significantly impacting the

learning capabilities of students (Sutcher et al., 2016). While the rates of attrition and its' impacts are noteworthy, what is more important is the distress and helplessness expressed by teachers who have decided to stay in the field (Public Agenda, 2004). More than one in three teachers have either seriously considered quitting or know someone who has quit as a direct result of students' problem behavior in the classroom and their perceived lack of support to deal with problem behavior (Ingersoll & Smith, 2003; Public Agenda, 2004). With this in mind, it is imperative that sufficient support be provided to teachers to allow for more constructive learning environments and improve the quality of education and overall job satisfaction.

School-Wide Positive Behavioral Interventions and Supports (SWPBIS)

Approaching student and teacher success from a well-rounded perspective is important because linkages between academic performance, social-emotional skills, and behavior are closely intertwined (McIntosh et al., 2008). Multi-tiered systems of support have successfully increased student success within academic, social-emotional, and behavioral domains using evidence-based practices that focus on prevention and early intervention (Horner et al., 2010; McIntosh & Goodman, 2016). Consequently, teachers feel more supported and successful when they can manage student's problem behavior (Boyd et al., 2011).

To respond to the call for effective interventions that address persistent problem behavior and teacher support, schools have adopted SWPBIS as a positive, collaborative, and prevention-based framework. SWPBIS is backed by decades of research in schools (Lee & Gage, 2020; Horner, 2010) and is a multi-tiered system of support that focuses on preventing and addressing student problem behavior as early as possible, benefiting schools at both systems and individual levels (Sugai et al., 1999; Sugai & Horner, 2020). Three tiers of support are identified to emphasize levels of behavioral organizational strategies (Sugai et al., 1999).

The first tier takes a universal, school-wide approach using preventative and proactive procedures to increase prosocial interactions and reduce the need for more targeted and individualized systems of support. The second tier focuses on targeted group interventions for those who are unresponsive to tier 1 interventions or are at-risk of requiring more individualized interventions. Most students (95%-99%) satisfactorily respond to tier 1 and 2 interventions; however, when not effective, tier 3 supports are adopted to optimize student success (Sugai & Horner, 2009).

When school personnel recommend individualized behavioral support (tier 3), a functional behavior assessment (FBA) and behavior intervention plan (BIP) are needed to support the students in need of individualized behavior support (Individuals with Disabilities Education Act; IDEA; 1997). FBA identifies environmental factors and events that provoke and maintain the occurrence of problem behavior (O'Neill et al., 1996; Sugai et al., 1999). When environmental variables are identified, a hypothesis statement depicting 'why' a behavior is occurring can be used to guide the development of function-based interventions, making intervention more likely to be successful (O, Neill et al., 1996). Interventions aim to increase the occurrence of alternative, functionally equivalent behavior and other desirable behaviors, therefore decreasing problem behavior (Sugai, et al., 1999).

While there is no standardized process for conducting FBA/BIP (i.e., Nelson et al., 1999; Scott et al., 2003), a typical method of production emphasizes an expert-driven model, rather than a collaborative team-based model, meaning that specialized practitioners (e.g., behavior analysts, school psychologists) consult with teachers to identify the function of problem behavior and write a BIP to be implemented by the teacher (Scott et al., 2005). This model can be highly effective; however, one drawback is a reliance upon an outside resource. Outside experts can

include private contractors, university researchers, or district-level personnel who are not consistently available within school settings, and reliance upon these experts can be problematic when a multitude of students require individualized interventions (Scott et al., 2003). Using school-based personnel will reduce the need to rely on outside resources that can be costly or difficult to find. While BIPs completed by behavioral experts tend to have high levels of technical adequacy, there simply are not enough professionals to support all students in need (Scott et al., 2003). Often times, BIPs that are written by experts do not emphasize collaboration with the specified change agent (i.e., teacher) and therefore lack contextual fit (Benazzi et al., 2006). Absence of contextual fit can lead to low levels of intervention implementation fidelity and ultimately, failed outcomes for students (Hieneman, 2015).

Contextual fit, the degree to which the plan is feasible and aligns most with the values of the student and change-agents, has been shown to increase teacher acceptability and intervention implementation fidelity, while ultimately providing more successful outcomes for the specified student (Benazzi et al., 2006; Hieneman, 2015). Furthermore, Benazzi and colleagues (2006) found that when BIPs were written collaboratively between behavior analysts and other team members, the plans included more elements of contextual fit and technical adequacy, which lead to a more well-rounded and effective intervention plan, supporting the idea that BIP development should be completed using a collaborative model rather than an expert-driven model.

However, research has shown that school-based professionals lack technical expertise about functions of behavior and function-based interventions (Cook et al., 2007; Strickland-Cohen & Horner, 2015; Strickland-Cohen et al., 2016; Van Acker et al., 2005). Benazzi and colleagues (2006) found that BIPs written by behavior analysts alone had high levels of technical adequacy and low levels of contextual fit while BIPs written by school-based professionals alone

had high levels of contextual fit and low levels of technical adequacy. Findings by Strickland-Cohen & Horner (2015) supported this concept with results from their '*Behavior Service Plan Knowledge Assessment*' with 13 school-based professional participants. The assessment included 50 questions that asked questions about critical features of BIPs and provided behavior scenarios with questions related to the function of behavior or function-based interventions that matched the behavior hypothesis. The average pre-test score was 62%, ranging from 43% to 80%, demonstrating that technical knowledge was not fully developed for those school-based professionals. This is slightly disheartening; however, after training, all participants exhibited increased assessment scores averaging a score of 88% with a range of 80% to 94% showing that with specific training and applied practice, school-based professionals' technical skills related to FBA/BIP knowledge can improve (Strickland-Cohen & Horner, 2015). Further research to identify methods for teaching school-based professionals about function-based interventions is necessary to increase collaborative competency for professionals and accessibility for students in need of individualized supports.

Prevent-Teach-Reinforce (PTR)

A standardized intervention model that uses a manualized approach for the creation of collaborative and function-based intervention plans is called Prevent-Teach-Reinforce (PTR). The original PTR model was designed to support students with persistent problem behavior in kindergarten through grade eight (Dunlap et al., 2019). Derived from both Applied Behavior Analysis (ABA) and PBIS, PTR encompasses a large evidence-base in schools spanning across decades (Lee & Gage, 2012). As a manualized intervention, steps to the PTR process have been standardized to increase ease of implementation and reliability across users (Eifert, 1997). While the process is standardized, a menu of interventions allows for individualization to occur for each

team dependent upon the following: behavioral goals, function of target behavior, accessible resources, and change agent preferences (Dunlap et al. 2010).

The PTR model employs a collaborative approach to FBA/BIP development where a facilitator (or coach), who is knowledgeable of behavioral functions and implementation of function-based interventions, works with school team members (e.g., teachers, parents, social workers, administrators) to identify the function of problem behavior and create a BIP that demonstrates contextual fit and technical adequacy (Dunlap et al., 2010). Capitalizing on the expertise of all school personnel involved in the FBA/BIP process can minimize limitations identified in the expert-driven model by ensuring that plans are feasible and well-liked by the primary stakeholders to maximize effectiveness of interventions (Harn et al., 2013). When team members take part in the planning process, they are more likely to implement the plan with fidelity, thereby increasing the likelihood for success in improving students' behaviors (Benazzi et al., 2006; Harn et al., 2013).

Two randomized control trials (Iovannone et al., 2009; Dunlap et al., 2018) exemplified significant reduction in problem behavior alongside improvements in both social skills and academic engagement following the implementation of the PTR process across preschool, elementary school, and middle school students. Furthermore, behavior changes were statistically significant in comparison to a control group using typical FBA/BIP practices, further supporting effectiveness of the PTR process (Iovannone et al., 2009). Such findings have been replicated using single case designs and extended to a wide variety of individuals in various settings: preschool students (Kulikowski et al., 2010), high school students (Deenihan, 2019; Sullivan et al., 2020), students in general education classrooms (Barnes et al., 2020; Reyes, 2019), students with autism spectrum disorder (Deenihan, 2019), students with emotional-behavioral disorders

(Barnes et al., 2020; Reyes, 2019; Sullivan et al., 2020), and even family-homes of children with autism spectrum disorder (Bailey & Blair, 2015; Sears et al., 2013). These studies demonstrate the versatility and effectiveness of this collaborative, individualized approach to function-based behavior intervention.

Within all aforementioned studies, social validity was highly rated showing that the PTR process was perceived to be effective and favorable by team members. Teachers in multiple studies (Deenihan, 2019; Kulikowski et al., 2010; Sullivan et al., 2020) attempted to generalize the interventions to other routines, expressed a desire to replicate the process with other students in their classroom, and even coached other teachers to use intervention strategies in their classrooms, exhibiting high levels of gratification with the process. Even though PTR is designed for use by school-based teams, no studies, to date, have directly evaluated fidelity and effectiveness of PTR facilitation by an in-house professional or coach (e.g., school psychologist or behavior specialist) without the assistance of an outside researcher or facilitator. Having school-based personnel to facilitate the PTR process can be beneficial for schools because they will no longer rely on outside experts to assist with FBA/BIP development.

Facilitation by school-based professionals can increase contextual fit and team openness during collaboration because they are more aware of the school's policies and procedures and likely have prior relationships with the team. Because no research has evaluated school-based professionals' facilitation of the PTR process, it is unclear whether school-based teams are able to implement the PTR process without outside experts' support. The relevant and necessary coaching strategies to train school-based personnel to successfully facilitate the PTR process is also unclear.

Coaching

Didactic approaches to training have been found to be minimally effective when it comes to skill proficiency and application among teachers (Fixsen et al., 2005). However, when paired with coaching strategies in both contrived and natural settings, success with newly-learned skills is more likely when taught in natural school settings (Fixsen et al., 2005; Reinke et al., 2013; Stormont et al., 2015). Coaching in school settings involves the continuation of training in various environments which allows for problem solving opportunities using check-ins, observation, modeling, performance feedback (Coddling et al., 2008), role plays, behavioral skills training (BST; Miltenberger et al., 2004), and emotional support (Devine et al., 2013).

As an empirically validated multi-component training, BST has shown promising results with teaching new skills for both children (Himle et al., 2004) and adults (Brock et al., 2017; Kirkpatrick, 2019). Using four components: instructions, modeling, rehearsal, and feedback, BST provides both instructional learning and opportunities to practice new skills in order to build fluency. This practice-based learning approach has demonstrated effectiveness with teacher training to improve classroom management (Miller et al., 2014), provide differential reinforcement (Sawyer et al., 2017), conduct preference assessments (Pence et al., 2012), and perform discrete trial training (Sarokoff & Sturmey, 2004). Furthermore, a meta-analysis by Brock et al. (2017) identified BST as being “associated with the most consistent improvements with implementation fidelity (p. 29),” conveying how significant of an impact this training procedure can be for school teachers and other school-based professionals with regard to implementation of BIPs.

Having ongoing peer support and training allows for further generalization and maintenance of skills and provides additional support to teachers after learning in contrived

settings (Joyce & Showers, 2002). Side-by-side coaching is one way that peers can provide support to other teachers by observing, assisting, and providing feedback related to targeted interventions to increase successful implementation (Wood et al., 2016). Becker and colleagues (2013) utilized multiple coaching strategies as ongoing support to increase teacher implementation of the Good Behavior Game (GBG) in their randomized control trial. In this study, a workshop training was provided for all teachers; then coaches visited classrooms for 4-6 weeks to provide direct support during classroom implementation of GBG. It was found that coaching strategies increased teacher implementation across all participants. However, an interesting finding was observed, in that teachers who demonstrated low fidelity at the beginning of the study, and therefore received a higher frequency of coaching, displayed higher increases in implementation fidelity measures during the final probe assessment than those who initially had high rates of fidelity, ultimately receiving a lower frequency of coaching throughout the study.

Implementation fidelity outcomes in these studies suggest that coaching can increase implementer competency and fidelity of implementation, particularly when ongoing coaching is provided. These findings mirrored another study evaluating the effectiveness of coaching on implementation of proactive and positive classroom management skills using the Incredible Years Teacher Classroom Management Program (IY TCM; Reinke et al., 2013). In this study, dosage along with type of coaching strategies used, were compared to determine descriptive differences in teachers' overall implementation of IY TCM. Results showed that teachers with high fidelity after initial training displayed a decrease in performance as time elapsed, while teachers initially displaying low fidelity showed increased rates of performance with higher rates of coaching. Due to limited research, it is not clear what components of coaching make it effective (Stormont et al., 2015). However, some researchers suggest that combining multiple

components (e.g., modeling, performance feedback) produces more significant outcomes for teachers (Fixsen et al., 2005; Becker et al., 2013). Given the current gaps in research, it is important to further evaluate multi-component approaches to coaching and its outcomes.

A useful body of literature exists discussing coaching effects on classroom teachers; however, limited literature currently exists about the effects of coaching on other school-based professionals (e.g., behavior specialists, school psychologists) who work with classroom teachers to address the needs of students with problem behavior and its impact on student behavior. Therefore, more research on coaching is needed to understand the level of training required for school-based professionals to facilitate the collaborative PTR process independently. To address the gap in the literature, the current study aimed to evaluate the impact of a multi-component coaching strategy on school-based professionals' facilitation of the PTR process and its impact on behavior of students with persistent problem behavior. Specifically, the research questions addressed will include:

1. To what extent will the multi-component coaching process improve technical adequacy of FBA/BIP among school professionals?
2. How does a multi-component coaching process, involving BST, side-by-side coaching, and performance feedback impact school professionals' PTR facilitation fidelity?
3. Will the PTR model implementation, facilitated by school professionals, result in high levels of intervention fidelity by teachers and positive behavioral outcomes for students with persistent problem behavior?
4. To what extent will school professionals, teachers, and students find the PTR process and outcomes to be acceptable?

METHOD

Setting

This study was conducted at two public elementary schools located in suburban areas of Florida. Each school had a population of around 680 students. At School 1, 58% of the students were White, 28% of students were Hispanic, and 8% were Black. Students who receive free and discounted lunch are made up of 85% of the student population. At School 2, 88.5% of students receive free or discounted lunch. At this school, 57.6% of students were White, 28.6% of students were Hispanic, and 6.5% of students were Black. Two general education classroom teachers and two students from each school participated in the study. At School 1, school-wide systems were in place to promote positive behaviors including a token economy and posted prevention strategies and goals. Class-wide, teachers instructed students on the guiding principles of the school's behavior goals and social emotional learning goals. School 2, utilized SW-PBIS Tier 1 behavioral prevention strategies and token economies. The student support services team taught social-emotional learning lessons as part of a social skills curriculum to each class for 30 min per week. This school's teachers and staff also actively used a school-wide token economy where students could earn weekly rewards.

Participants

The study participants consisted of three groups: (a) school professionals, (b) classroom teachers, and (c) students. Two school professionals (behavior specialist and student support staff) took part in both phases of the study as a PTR team member and facilitator.

School Professionals

Both school professionals scored at least 50% on the Basic *Behavioral Function & FBA Knowledge Assessment* (Appendix A) demonstrating foundational knowledge of behavioral functions and hypothesis-driven interventions prior to beginning of the study. They had job requirements to conduct FBA/BIPs and had previous experience writing at least two FBA/BIPs; they did not have prior experience using the PTR process.

School Professional 1 was a 32-year-old White woman with 5 years of experience in the field of education. At the time of the study, the professional had worked 2 years in her current position as a behavior specialist at the targeted school and 3 years in a similar position in another state. She had never held another type of position in the field of education. She held a Bachelor's Degree in Healthcare Administration and Business Management along with a special education teaching certificate. School Professional 2 was a 55-year-old White woman, who had 10 years of experience in the field of education. At the time of the study, she was in her 1st year of work in her current position as a Student Support Assistant on the school's behavior team. She previously worked as a behavior specialist for 1 year and an ESE Classroom Teacher in both elementary and high schools for 9 years. She held a Master's Degree in Special Education along with a Teaching Certificate for English Grades K-12, special education teaching certificate, and Registered Behavior Technician Certificate (see Table 1).

Teachers

Teacher participants included four teachers (grades K-5) who taught in general education classrooms at two elementary schools. Half of the teachers participated in Phase 1 of the study (co-facilitation) and the remaining half participated in Phase 2 (independent facilitation). Eligibility criteria for potential teacher participants included two components: (a) willingness to

participate in the PTR process as a team member for an identified student and (b) regular interactions with the identified student in the school setting. The teachers did not have experience with the PTR prior to participating in the study. All names provided are pseudonyms for actual participants. Mrs. Volt was the 1st grade teacher of Jane (School 1, Phase 1). Michael had two teachers, Mrs. Betty and Mrs. Samson, who were both PTR team members (School 2, Phase 1). Mrs. Samson taught 2nd grade Math and Science, whereas Mrs. Betty taught 2nd grade English and Social Studies. The targeted routine was English Language Arts small group under Mrs. Samson's instruction. Thus, only her demographic information is included. Ms. Flute was the 2nd grade teacher of Daphne (School 1, Phase 2). Ms. Garcia was the 1st grade teacher of Butch (School 2, Phase 2). Table 1 provides the teachers' demographic information.

Students

Four students, taught by the teacher participants, participated in this study. As with the teachers, two students participated in Phase 1 of the study, and the remaining two students participated in Phase 2. Inclusion criteria for student participants included five components: (a) being in school grades kindergarten through 5th, (b) referral to the school professional for individualized behavior supports due to engagement in externalizing problem behavior that interfered with academic progress and disturbed the classroom learning environment, (c) being unresponsive to typical class-wide or targeted interventions, as reported by the teacher, (d) attending school in a brick and mortar setting, and (e) school attendance rate of at least 80%. All names provided are pseudonyms for actual participants.

Phase 1 Students. *Jane* (School 1) was a 1st-grade White girl in a general education classroom with no formal diagnoses. Jane was referred for Tier 3 behavioral supports because of her "inability to sit still and lack of academic work completion." Jane's academic performance

was at grade level for reading and below grade level for math. *Michael* (School 2) was a 2nd-grade White boy in a general education classroom, who was diagnosed with ADHD. He took ADHD medication twice daily. His medication type and dosage remained the same throughout the study. Michael was referred for Tier 3 behavioral supports by his two teachers, expressing that Michael was disruptive during class and completed very little academic work. Michael performed at grade level in math and below grade level in reading. He received targeted academic supports (Tier 2) to assist with his deficits in reading.

Phase 2 Students. Daphne (School 1) was a 2nd grade Black girl in a general education class with no formal diagnosis. She was referred for individualized behavioral supports for disruptive behavior and insufficient communication skills in the classroom. Her academic performance for all subjects was on level. Butch (School 2) was a 1st grade White boy in a general education classroom with no formal diagnoses. He was referred for Tier 3 behavioral supports due to teacher's reports of disruptive behaviors and inattentiveness to academic instruction. Butch performs significantly below level in all subjects. He received Tier 2 academic supports in the classroom. Table 1 provides demographic information on the student participants.

Recruitment Procedures

To recruit participants, the researcher consulted with the district behavior analyst who provided names of schools that could serve as potential sites for research. The researcher contacted the principals of each school to provide information about the study and set up phone or in-person interviews to determine if the school would participate. Once principal approval was obtained, the researcher sent emails to school professionals in the school who fit initial eligibility criteria and set up phone, virtual, or in-person meetings to discuss their participation. School professionals either signed consent at the meeting or discussed the school's participation with

potential teachers before signing consent. Next, the school professional reached out to teachers through email and flyer dissemination to identify potential participants. The researcher and school professional had a meeting with potential teachers to determine eligibility, identify potential student participants, and sign consent forms. Lastly, the researcher and school professional made phone calls to potential student participants to provide information about the study. If the parent was interested, a consent form was sent home with the student or sent electronically through DocuSign. Once parental permission was obtained, the researcher and school professional obtained verbal assent from the students.

Table 1. Participant Information

	School 1		School 2	
	Phase 1	Phase 2	Phase 1	Phase 2
Teachers	<u>Ms. Volt</u> <ul style="list-style-type: none"> • 1st grade • White • 3 yr of teaching 	<u>Ms. Flute</u> <ul style="list-style-type: none"> • 2nd grade • White • 1 yr of teaching 	<u>Ms. Betty</u> <ul style="list-style-type: none"> • 2nd grade Math • White • 23 yr of teaching 	<u>Ms. Garcia</u> <ul style="list-style-type: none"> • 1st grade • Hispanic • 2 yr of teaching
Students	<u>Jane</u> <ul style="list-style-type: none"> • 1st grade • No diagnosis • White 	<u>Daphne</u> <ul style="list-style-type: none"> • 2nd grade • No diagnosis • Black 	<u>Michael</u> <ul style="list-style-type: none"> • 2nd grade • ADHD • White 	<u>Butch</u> <ul style="list-style-type: none"> • 1st grade • No diagnosis • White
Professionals	<u>Behavior Specialist</u> <ul style="list-style-type: none"> • 32 yr old • White • 5 yr experience in education • 2 yr in current position • B.A. in Healthcare Admin. & Business Management • Special Edu teaching certificate 		<u>Student Support Assistant</u> <ul style="list-style-type: none"> • 55 yr old • White • 9 yr of teaching & 1 yr of behavior specialist experience • 1 yr of current position • M.A. in Special Education • General Edu teaching certification • Registered Behavior Technician 	

Materials

A print copy of the PTR manual (Dunlap et al., 2019) was used to facilitate training for school-based professionals and for implementing the PTR process for each PTR case. An online version of the book was available for all school-based professionals throughout the study. The manual included step-by-step instructions for completion of the PTR process in addition to checklists, forms, worksheets, and supplemental materials required for all steps of the process. A video or audio recorder was used to record meetings and assess facilitation procedural fidelity. Digital timers were also used to time breaks and periods of academic instruction as part of some students' intervention. Individualized visual supports (i.e., token boards, social stories) were also used as part of some students' intervention.

Measurement

Various forms of data were collected during this study to evaluate the process and outcomes of the PTR intervention for students, school-based professionals, and teachers, including student behaviors, basic behavioral function and FBA knowledge, technical adequacy of FBAs/BIPs, PTR facilitation fidelity, teacher intervention implementation fidelity, and social validity.

Student Behavior

The primary dependent variable in this study was student behavior. Data on student behavior was collected from each PTR case to evaluate student outcomes of the PTR process. Measures included direct observation of target behaviors (problem behavior and replacement behavior) and Individualized Behavior Rating Scale Tool (IBRST; Iovannone, 2014).

Direct Observation. Each PTR team identified and operationally defined target problem and replacement behaviors for each student. Data on the specified behaviors were collected across baseline and intervention by the researcher during the targeted classroom routine.

Frequency and duration data were collected using Countee, a phone application. Each classroom's target academic time period was approximately 30 min in duration. However, some sessions varied dependent upon academic instruction. Percentages of target behaviors within each session were calculated using Countee. Across students, targeted problem behavior for reduction included off-task behavior (Jane), out of seat (Butch), and disruptive behavior (Michael & Daphne). Replacement behavior targeted for increase included on-task behavior (Jane), engagement (Michael), on-task behavior (Butch), and appropriate communication (Daphne). Table 2 describes the definitions and measurement system of each target behavior across students during direct observation.

Individualized Behavior Rating Scale Tool (IBRST). In addition to direct observation, data on student behaviors were collected using IBRST, which is a validated teacher report tool designed to collect data on student behaviors with a rating scale (Iovannone et al., 2014). Using a 5-point Likert scale, teams individualized rating scales to be most appropriate for the student participants by considering the dimensions of targeted behaviors and targeted routines. Scores for problem behavior were based on anchors set by each PTR team using the most applicable dimension (e.g., frequency, duration, intensity) to signify a very bad day (5), bad day (4), average day (3), good day (2), and very good day (1). The scores for targeted replacement behavior are reversed to indicate a very good day (5) to a very bad day (1). A sample IBRST can be viewed in Appendix B.

Table 2. Targeted Behaviors, Definitions, and Measurement Systems

	Problem Behavior		Replacement Behavior	
	Definitions	Measurement	Definitions	Measurement
Jane (Phase 1)	<u>Off-Task</u> <ul style="list-style-type: none"> Walking around classroom without permission, Coloring at her table, or Doing anything other than starting assigned task (e.g., rocking in her chair, tapping pencil, picking skin, playing with shoes, requests to leave the room) 	<ul style="list-style-type: none"> Duration in min Converted to percentage (proportion of observation duration) Timer gets started when Off-Task behaviors occur for longer than 5 seconds 	<u>On-Task</u> <ul style="list-style-type: none"> Eyes on work, teacher, and/or board, pencil to paper, participating in class discussion, answering questions, or raising hand 	<ul style="list-style-type: none"> Duration in min Converted to percentage (proportion of observation duration) Timer gets started as soon as On-Task behaviors begin
Michael (Phase 1)	<u>Off-Task</u> <ul style="list-style-type: none"> Verbal refusal to come to group, or Engagement in disruptive behaviors (i.e., makes noises with or without classroom items, enters other students' personal space, talking) 	<ul style="list-style-type: none"> Frequency Converted to rate (response per min) 	<u>Engagement</u> <ul style="list-style-type: none"> Being in his designated work area, Active writing (i.e., with writing utensil touching the paper and moving to form words and/or drawing that is relevant to the current academic task), or Having eyes directed at his paper or directed at the teacher 	<ul style="list-style-type: none"> Duration in min Converted to percentage (proportion of observation duration) Starting timer as soon as behavior begins and stopping when behavior stops for 1 s
Daphne (Phase 2)	<u>Screaming</u> <ul style="list-style-type: none"> Verbalization above a conversational tone that is disruptive to class routines 	<ul style="list-style-type: none"> Frequency Converted to rate (response per min) 	<u>Appropriate Communication</u> <ul style="list-style-type: none"> Raises hand to ask for attention, assistance, or a break 	<ul style="list-style-type: none"> Frequency Converted to rate (response per min)
Butch (Phase 2)	<u>Out of area</u> <ul style="list-style-type: none"> Leaving his designated work area (2 ft. radius around desk/table) for longer than 10 s without teacher approval 	<ul style="list-style-type: none"> Frequency Converted to rate (response per min) 	<u>On task</u> <ul style="list-style-type: none"> In the designated area with eyes on teacher, eyes on task, and/or writing 	<ul style="list-style-type: none"> Duration in min Converted to percentage Starting timer as soon as behavior occurs and stopping when behavior stops for 1 s

Jane. Jane's teacher collected data during whole-group math instruction. Anchors for off-task were set using percentage of time at 5, 81%-100%; 4, 61%-80%; 3, 41%-60%; 2, 21%-40%; and 1, 10%-20%. Instead of collecting data on on-task behavior, Jane's team decided to collect data on work completion for IBRST. Work completion was defined as completion of math assignments (i.e., worksheets, group discussion of math problems, using math manipulatives to visually show math work, completion of math problems in teams of 2-3 students). Anchors for work completion were based on the percentage of work completed on the written work that Jane submitted. A score of 5, more than 90%; 4, 61%-90%; 3, 31%-60%; 2, 1%-30%; 1, 0% completed or not turned in.

Michael. Michael's team collected data during English Language Arts small group instruction. The anchors for off-task behavior included a 5, refusal to come to group and engages in disruptive behavior; 4, refusal to come to group and does not engage in disruptive behavior; 3, comes to group and engages in disruptive behavior 2 or more times; 2, comes to group and engages in fewer than 2 instances of disruptive behavior; 1, comes to group and does not engage in disruptive behavior. Anchors for Engagement included 5, 100%; 4, 75%-99%; 3, 50%-74%; 2, 25%-49%; 1, 0%-24%.

Daphne. Daphne's team developed an IBRST for data to be collected during whole group English/Language Arts. Anchors for screaming were as follows: 5, more than 10 instances; 4, 9-10 instances; 3, 7-8 instances; 2, 5-6 instances; and 1, less than 5 instances. Anchors for appropriate communication were as follows: 5, communicated appropriately 4 or more times; 4, communicated appropriately 3 times; 3, communicated appropriately 2 times; 2, communicated appropriately 1 time; and 1, communicated appropriately 0 times.

Butch. Butch's teacher collected IBRST data during English/Language Arts Centers across baseline and intervention. Anchors for out of area behavior were as follows: 5, five or more occurrences; 4, four occurrences; 3, three occurrences; 2, two occurrences; 1, one or fewer occurrences. Anchors for time on task included: 5, 25-30 min on task; 4, 19-24 min on task; 3, 13-18 min on task; 2, 7-12 min on task; and 1, 0-6 min on task.

School Professional Data

Secondary data were collected for school professional participants to determine effectiveness of the multi-component coaching strategy. Accuracy of PTR facilitation, technical adequacy of FBA/BIP development, and Basic FBA Knowledge was assessed.

Technical Adequacy of FBA/BIP. The participating school professionals' technical adequacy of FBA/BIP was assessed using the *Technical Adequacy Tool for Evaluation* (TATE; Iovannone et al., 2021) as a pre- and post- measure. The TATE is designed to guide school-based teams to create technically adequate FBA/BIP documents. Reliability and validity of the TATE have been reported to be acceptable (Iovannone & Romer, 2017), with high inter-rater reliability (ICC = 0.94; $p < 0.01$) and large convergent validity ($d = 0.49$, $p < 0.01$) with the Behavior Support Plan Quality Evaluation (BSP-QE; Wright et al., 2007). The school professionals provided a copy of a previously written FBA/BIP for the researcher to score the technical adequacy. The FBA/BIP written by the school professional for their Phase 2 student was also assessed using the TATE. Scores for each school-based professional were compared across measurements. Broken down into two components with 9 items for each component (total 18 items), TATE is designed to evaluate the technical adequacy of various elements of an FBA and BIP. The FBA component evaluates the following areas: operational definitions of behaviors targeted for reduction and replacement, data collection displays of baseline measures,

identification of current behavioral consequences, and identification of a functional hypothesis. The BIP component evaluates the following areas: development of the plan in a timely manner, identification of at least one strategy to address antecedent events, identification of a strategy to teach the selected replacement behavior, selection of reinforcement methods to support use the selected replacement behavior, identification of data collection and progress monitoring plans, and identification of fidelity data collection plans. For each component, the FBA/BIP can receive a score of 0 (not addressed), 1 (partially addressed), or 2 (completely addressed), based on how completely the document addresses the component. Scores for each component are added together to determine a final score for each FBA/BIP evaluated.

Basic FBA Knowledge Assessment. As another secondary measure, the school professionals' basic understanding of behavioral functions and connection of function-based interventions to hypothesis statements was assessed using the *Basic Behavioral Function & FBA Knowledge Assessment* tool, developed by the researcher (Appendix A). The tool consisted of 15 items adapted from 'behavior vignettes' used to identify school personnel's ability to identify function-based interventions in Borgmeier et al. (2015) and the *Basic FBA to BSP Pre-Test* (Strickland-Cohen et al., 2016). The content of the assessment was validated by four Board Certified Behavior Analysts (BCBAs) who had experience with school-based interventions prior to the outset of the study. The tool included multiple-choice questions about basic FBA/BIP terminology and included a variety of behavior chains and hypothesis statements. This tool was used as part of eligibility criteria for school professionals to participate in the study and was re-administered at the end of the study to assess changes in knowledge about behavioral function and FBA/BIPs following participation in the study. Answers to the questions on the assessment

tool were not shared with participants until after they took their post-test to ensure that changes in score were not related to exposure to correct responses during the previous assessment.

PTR Facilitation Fidelity. The PTR facilitation fidelity was assessed across both phases for school professionals' facilitation of the PTR process using three checklists developed by the PTR developers. The first checklist, *Facilitation Product Fidelity Checklist*, which consisted of 18 items and used a binary scoring system (yes/no), was used to assess whether all necessary components are included in products (i.e., IBRST, FBA summary, and BIP document) created by the team members. The second checklist, *Facilitation Implementation Fidelity Checklist* consisted of between 13 to 21 items for each step of the PTR process. This checklist was used to assess fidelity of facilitation to ensure all steps are completed within each step. The third checklist, *Facilitation Quality Checklist* was used to measure the quality of facilitation during team meetings to ensure that a collaborative approach is used for decision-making. For each fidelity measure, the percentage of steps implemented correctly was measured and scored as the percentage of opportunity.

Teacher Intervention Implementation Fidelity

Teachers' implementation fidelity of PTR intervention plans (Appendix C) was assessed during direct observation sessions using an individualized fidelity checklist. The checklist included names of selected intervention strategies for each Prevent, Teach, and Reinforce category along with steps for implementation. The researcher scored if the teacher completed the step (Y), if they did not (N), or if there were no opportunities to complete a step during the observation (N/A). Percentage of steps completed was calculated at the end of each observation session by dividing the steps completed (Y) by the total number of steps observed (Y+N) and multiplying by 100. Intervention implementation fidelity data was collected during the first

session of intervention and for at least 50% of all observation sessions. An example of the teacher implementation fidelity checklist is provided in (Appendix D).

Social Validity

At the end of the study, all participants directly involved in the PTR process (school professionals, teachers, and students) were asked to complete a survey that measured social acceptance and rating of the study. Adapted versions of the *Usage Rating Profile-Intervention Revised* (URP-IR; Chafouleas et al., 2011) were utilized for all participants. Briesch et al. (2013) found the measures across six subscales to have high levels of internal consistency. Five of the subscales had acceptable to high levels of reliability ($\alpha \geq .70$), ranging from $\alpha = .78$ to $\alpha = .95$, whereas one of the subscales exhibited just below the acceptable level of reliability ($\alpha = .67$). Participants from each group completed a different version of an adapted URP-IR that was most closely aligned with their role in the study. School professional and teacher versions used a 6-point rating scale and consisted of 15 items. The student version used a 4-point rating scale and consisted of 10 items. All rating forms were designed to gather evidence about the PTR intervention process and outcomes from each participant's perspective, including how they felt about being a PTR team member, how effective they found interventions to be, how they felt about the collaborative model, if they would use PTR again, and how they felt about the coaching and co-facilitation components. Rating scale forms can be found in Appendix E.

Interobserver Agreement (IOA)

The researcher and a research assistant assessed IOA for student direct observation data, TATE scores, and school professionals' facilitation fidelity to gather reliability of measures. Research assistants were graduate students in applied behavior analysis who had experience with behavioral data collection. The researcher trained the research assistant, who was a graduate

student in ABA, to gather data using behavioral skills training (BST; Miltenberger et al., 2004) prior to IOA sessions. They reached 90% agreement for type of data collected with the researcher before collecting data for the study.

Direct observation. IOA on student behaviors was assessed by both the researcher and a research assistant during at least 20% of classroom observations across student participants and target behaviors in both baseline and intervention phases. For student behaviors collected using duration, IOA was calculated using the total duration per observation session method, where the lower total duration recorded was divided by the larger total duration and multiplied by 100. For IOA on frequency, data were calculated by dividing the smaller frequency throughout the whole session by the larger frequency throughout the whole session and multiplied by 100.

IOA was assessed during 25% of baseline and 20%-33% of intervention sessions across Phase 1 student participants. For Jane, agreement was 97.4% for both off-task and on-task behaviors in baseline and averaged 99% (range= 98.5%-99.7%) in intervention. For Michael, during baseline, agreement was 100% in all sessions for disruptive behavior and averaged 98.65% (range = 98%-99.3%) for engagement. During intervention, no IOA was recorded due to time constraints. For Phase 2 students, IOA was assessed during 25%-40% of baseline and 33%-50% of intervention sessions. For Daphne, during baseline, agreement was 100% for appropriate communication and 88% for screaming behavior. During intervention, agreement was 100% for appropriate communication and 100% for screaming behavior. For Butch, during baseline, agreement was 100% for out of seat behavior and averaged 95% (range = 90%-100%) for on-task behavior. During intervention, agreement was 100% for out of seat behavior and 93% for on-task behavior.

TATE. For TATE, both the researcher and a research assistant independently scored the school professionals' FBA/BIPs and FBA knowledge assessments during pre- and post-assessments. Using total count IOA, the score was calculated by dividing the highest percentage by the lowest percentage, then multiplied by 100. During pre-assessment, IOA for School Professional 1 was 98% and was 93% for School Professional 2. During post assessment, agreement for School Professional 1 was 98% and was 100% for School Professional 2.

Facilitation Fidelity. To assess school professionals' PTR facilitation fidelity, the researcher and research assistant independently analyzed video or audio recordings to assess fidelity during 25% of meetings for each school-based professional. IOA was assessed using point-by-point agreement for each step on the facilitation fidelity checklist. The total number of agreements was divided by the total number of agreements plus disagreements, then multiplied by 100 to calculate a percentage of agreement. Agreement for School Professional 1 was averaged 94% across both phases of the study. Agreement was 94% for Phase 1 fidelity and 100% for Phase 2 fidelity. Agreement for School Professional 2 averaged 94% across both phases of the study with 94% agreement for Phase 1 fidelity and 100% agreement for Phase 2 fidelity. For all created products, the researcher and research assistant used a product fidelity checklist to assess IOA in 25% of products for each school professional. A percentage of agreement was calculated by dividing the number of agreements by the number of agreements and disagreements then multiplying by 100. IOA for all products across both phases was 100%.

Experimental Design

This study used a multiple-baseline across participants design to evaluate the impact of PTR intervention on student behavior. Experimental control was demonstrated without removal of the PTR intervention through replication across multiple student participants within each

phase. The study also used a descriptive analysis method to evaluate improvements in school professionals' facilitation of PTR, TATE, and Basic FBA Knowledge Assessment scores following the multi-component coaching strategy.

Procedures

The study was conducted across two phases: (a) school-based professionals' co-facilitation of the PTR process for a student with the researcher and (b) school-based professionals' independent facilitation of the PTR process for a second student.

Baseline. As part of school professional eligibility, they completed the Basic FBA Knowledge Assessment. Once eligibility for participation was confirmed, the school professionals provided the researcher with a copy of a previously developed FBA/BIP free of personal identifying information which was evaluated using TATE. For student behavior, baseline data were collected following completion of Step 1 of the PTR process (Teaming and Goal Setting) once the target routine, problem behavior, and replacement behavior were selected and defined. Data were collected to identify a stable trend in levels of the target behaviors. Teachers used their typical class-wide or targeted intervention strategies during baseline, such as class wide reinforcement systems, self-monitoring, Check-in/Check-out, time out, or group contingencies.

Initial Training on PTR Model. Before implementing the PTR process described below, a brief (15-30 min) training on the PTR model occurred independently for each school professional. Training included a brief introduction to the PTR book where the researcher acquainted the school professional to the format of the book and other important materials. The researcher also provided a brief description of how the PTR process differs from other FBA/BIP development models and briefly explained the four steps of the process. Knowledge of the

research study format was also shared to ensure understanding of how co-facilitation and independent facilitation phases would occur.

Phase 1: Implementation through Co-Facilitation. During this phase, the first group of student participants (one for each school professional) were identified. The researcher and each school professional began facilitation of the PTR process for the first-identified student case by completing a record review and specific training for the first step of the PTR process (Teaming and Goal Setting) before actual meetings with the student participant's PTR team began. This training utilized BST using steps outlined in the Facilitation Implementation Fidelity Checklist, Facilitation Quality Checklist, and Facilitation Product Fidelity Checklist. Training included discussion of steps on each checklist, modeling using a recorded meeting sample, rehearsal using the current student case, and specific feedback utilizing praise for correctly completed steps and corrective feedback for incomplete steps. Subsequent opportunities to rehearse the facilitation skills were provided in accordance with feedback until the professional accurately completed at least 90% of steps in the Facilitation Implementation Fidelity Checklist two consecutive times, demonstrating competence of what goals should be accomplished during the team meeting. The researcher and school professional selected steps from the Facilitation Implementation Fidelity Checklist as their assignment; additionally, it was discussed during training that both facilitators were open to assist the other during specific steps if they felt it was appropriate.

Once training was complete, the first PTR team meeting occurred to complete Step 1 of the PTR process. During the first meeting and all subsequent meetings, side-by-side coaching occurred (Wood et al., 2016) where the school professional and researcher worked together to facilitate the PTR case. The researcher provided in vivo feedback and assistance during the meetings. Upon completion of each step with the PTR team, a feedback and training session

occurred between the researcher and school-based professional where facilitation behaviors for the previous step were discussed and training, as previously described, occurred for the next step of the process. Each feedback and training session was no more than 60 min in duration. However, at times, these meetings needed to be split up into multiple time-frames due to job-related interruptions (i.e., behavioral de-escalation assistance was required, other school meetings occurred, or other job responsibilities needed to occur).

Phase 2: Independent Facilitation. All PTR steps were completed independently by the school professional in this phase. Thus, previous experience with each step was required. School professionals either completed Phase 1 prior to starting Phase 2 or conducted both phases simultaneously, meaning that Step 1 was completed with the researcher, then Step 1 was completed independently, then Step 2 with the researcher, then Step 2 independently, and so on. The researcher continued to provide feedback after each team meeting and after all products were created. All feedback sessions were less than 30 min in duration. Brief reviews (under 5 min) of the Facilitation Implementation Fidelity Checklist occurred upon school professional request but did not occur during each step or for all participants. The researcher did not participate in team meetings or product creation, except to record the meeting and collect facilitation fidelity, collect direct observation data, and collect teacher implementation fidelity data. School professionals collected at least 2 sessions of direct observation data.

Implementation of PTR. Implementation of PTR involved a 4-step process (Teaming and Goal setting, PTR-FBA Assessment, PTR Intervention, and Progress Monitoring and Data-Based Decision Making) This multi-step process was implemented in each facilitation phase described above. The team meetings occurred during non-instructional time. Depending on the team members' availabilities, meetings took place before school, after school, during planning

periods, or during students' extracurricular activities (i.e., physical education, art). Some steps required more than one meeting to accomplish all goals. Two teams required two meetings to fully develop interventions. One team required two meetings to complete the PTR-FBA Assessment. However, the goal of each meeting was to complete one whole step. Meetings included all relevant team members. Each meeting was approximately 30 min across all teams.

Step 1-*Teaming and Goal Setting* was completed for the team to collaboratively identify roles for each team member along with student behavioral goals. They identified and operationally defined at least one problem behavior and one replacement behavior using the *Structured Goal Setting Form*, and then establish IBRST anchors that correspond with selected behaviors during a specified routine, as described in the measurement section.

Step 2- *Completion of the PTR-FBA Assessment* used the *PTR-FBA Assessment* tool provided in the PTR manual and involved a series of questions related to various components of behavior to form a function-based hypothesis about the behavior. Questions provided insight to common antecedents, consequences, setting events, and people with which the behavior is most likely and least likely to occur. Assessments were either completed individually by team members and then accumulated during a team meeting or could be completed together during a team meeting. In Phase 1, one team completed the assessment outside of the team meeting; another team completed the assessment in interview format during a team meeting. At least three direct observations occurred during a classroom routine where problem behavior was most likely to be observed to gather additional information on the classroom environmental events associated with the student's problem behavior. All information was synthesized into a hypothesis statement and depicted on the *Functional Behavior Assessment Summary Table* for all team members. The PTR-FBA results indicated that across the participating students, escape was

found to be the most common hypothesized function followed by attention, then access to tangible items. Hypothesis statements for each student can be found in Table 3.

Step 3- *PTR Intervention* was conducted after completing Step 2 and baseline data collection on student behavior. This third step involved development of the PTR Plan (BIP) using the *PTR Intervention Checklist*, as seen in Appendix C, which includes menus of evidence-based strategies that are likely to be effective in school settings. Team members selected at least one strategy from each section (Prevent, Teach, and Reinforce) that were most aligned with the hypothesized function and were valued by the primary implementor (teacher). Teams used the *Intervention Scoring Table* to rate various interventions and decided which ones to include in the plan.

Table 3. Student Hypothesis Statements.

Student	Hypothesis Statement	Behavior Function
Jane	When prompted to complete math instruction, Jane will engage in off task behaviors. As a result, she will avoid or delay non-preferred academics and gain access to items around the classroom.	Escape & Tangibles
Michael	When asked to begin non-preferred academic task, Michael will refuse to go to group and will engage in disruptive behaviors. As a result, he will avoid or delay the task or gain attention from peers and adults.	Escape & Attention
Daphne	When attention is diverted or asked to engage in non-preferred tasks, Daphne will engage in screaming and out of area behavior. As a result, she will gain access to attention from peers and adults.	Attention
Butch	When asked to begin non-preferred academic task or do independent work, Butch will engage in out of area behavior. As a result, he will gain attention from peers and adults.	Attention

Once strategies were selected, the facilitator(s) developed a BIP document outlining procedural steps for each chosen strategy, a teacher intervention fidelity checklist (see an example in Appendix D) that provided brief descriptions of strategy steps, and any materials required for the intervention. Once all products were developed, the facilitator conducted teacher training for BIP implementation. Teacher training utilized BST where instructions, modeling, rehearsal, and feedback occurred until mastery of steps was demonstrated with at least 90% completion of steps on the individualized fidelity checklist across 2 consecutive role-plays. Table 4 provides a summary of intervention strategies selected in the PTR intervention categories for each student.

Step 4- *Progress Monitoring and Data-Based Decision Making* is the final step of the PTR process. During this step, direct observation of student behaviors occurred during specified target classroom routines. During observations, the researcher and school professional collected direct observation data on student behavior and assessed teacher intervention implementation fidelity during 50% of observations using the implementation fidelity checklist. The researcher and professional (Phase 1) or the school professional alone (Phase 2) will provide verbal feedback to the teacher about their implementation of interventions and student progress over the course of PTR intervention.

Within the first week of intervention, the researcher observed teacher implementation of the intervention to assess fidelity. After the intervention was implemented for at least 10 days, a meeting occurred to review fidelity and student data. During this meeting, discussion about student progress and teacher intervention implementation fidelity occurred to facilitate data-based decision making for next steps. If the intervention worked as intended, the team decided if the intervention would be generalized to other parts of the student's day, if parts would be faded,

or if any steps needed to be modified. Updated goals were identified at this time. If targeted behavior did not meeting criterion levels, the team determined whether modifications to the interventions should be made, intervention plan training needed to reoccur, or if a more comprehensive FBA should be conducted to select new interventions.

Table 4. PTR Intervention Plan Strategies for Participating Students

Student	Function of PB	Prevent	Teach	Reinforce
Jane	Escape & Tangibles	<ul style="list-style-type: none"> • Set Clear Expectations – student places personal materials in designated location prior to target routine 	<ul style="list-style-type: none"> • Token Board – tokens provided for on-task behavior • Breaks with preferred items earned for task completion 	<ul style="list-style-type: none"> • Provide escape upon task engagement • 3 tokens=break w/ tangible • Positive praise each time task engagement occurred • Redirect to replacement behavior and attention minimized
Michael	Escape & Attention	<ul style="list-style-type: none"> • Proximity & Setting Clear Expectations – Discussion with student prior to target routine • Teacher sits next to student during academic routine 	<ul style="list-style-type: none"> • Requesting for a break & Self-monitoring – Daily practice to request for a break (BST) • Timer set by student for academic engaged time • When criterion is met, Michael is excused from the rest of target routine to engage with preferred activity • Stars on behavior chart earned for meeting daily goals toward preferred activity at end of the week 	<ul style="list-style-type: none"> • Provide escape contingent upon academic engagement • Deliver positive praise statements for academic engagement and requesting for a break • Provide access to preferred daily activity contingent upon meeting academically engaged duration goal • Provide access to preferred weekly reward contingent upon meeting weekly goal
Daphne	Attention	<ul style="list-style-type: none"> • Environmental Supports – tape on floor of designated area & visual support • Non-contingent attention – Teacher walks by desk at least once every 5 min and provides praise statement, high five, or thumbs up 	<ul style="list-style-type: none"> • Self-monitoring – Student tracks frequency of gaining attention appropriately and staying in area 	<ul style="list-style-type: none"> • Positive praise provided for raising hand and gaining attention appropriately • Access to preferred social activity is provided contingent upon meeting goal for target routine (read with a peer or teacher, sit at teacher’s desk, or sit with a peer) • Attention is minimized when screaming occurs

Table 4 (Continued). PTR Intervention Plan Strategies for Participating Students

Student	Function of PB	Prevent	Teach	Reinforce
Butch	Attention	<ul style="list-style-type: none">• Proximity & Setting Clear Expectations – Discussion with student prior to target routine & visual support (visual schedule)• Differentiate Instruction – Activities are provided that can be completed independently	<ul style="list-style-type: none">• Appropriately gain attention – Daily practice to raise hand and request for attention or help (BST)• Timer set my student for academic engaged time.• When criterion met, can engage with neutral task and set new timer.• When criterion met, can engage with preferred activity	<ul style="list-style-type: none">• Provide attention (positive praise and check off schedule) at end of each time interval contingent upon academic engagement• Deliver positive praise statements for gaining attention appropriately• Attention minimized when out of area behavior occurs – gestural prompt provided to return to area.

Note: PB = problem behavior

RESULTS

Technical Adequacy & FBA Knowledge

School professionals' technical adequacy of FBA/BIPs was measured using TATE both before and after participation in this study. The pre-assessment for technical adequacy was collected from a FBA/BIP that was completed by the school professionals prior to participation in the study. The student information was redacted and technical adequacy was evaluated. School Professional 1 scored 42% with a breakdown of 33% on the BIP component and 44% on the FBA component. School Professional 2 scored 50% across both components of the TATE. Post-assessment was completed using the FBA/BIP completed as part of Phase 2 (independent facilitation). School Professional 1's FBA/BIP scored 92% with a breakdown of 100% on the FBA component and 83% on the BIP component. School Professional 2's FBA/BIP scored 94% with a breakdown of 100% on the FBA component and 88% on the BIP component. Scores across participants demonstrate marked improvements in technical adequacy of FBA/BIP documents.

Basic FBA Knowledge was assessed at the start of the study and again following completion of Phase 2. At the outset of research, School Professional 1 scored 73% and School Professional 2 scored 60%. Breakdowns of the scores can be found in Table 5 for each subsection of the assessment. Following participation in this study, School Professional 1 scored 73% which was the same as her pre-assessment and School Professional 2 scored 100% demonstrating an increase of 40% following participation in the study.

Table 5. Pre-Post Data for Technical Adequacy and FBA Knowledge

Measure	Professional 1		Professional 2	
	Pre	Post	Pre	Post
<u>Technical Adequacy</u>				
Behavior Intervention Plan	33%	83%	50%	88%
Functional Behavior Assessment	44%	100%	50%	100%
Total	42%	92%	50%	94%
<u>FBA Knowledge</u>				
Behavioral Functions	100%	100%	100%	100%
Functional Behavior Assessment	43%	43%	14%	100%
Total	73%	73%	60%	100%

PTR Facilitation Fidelity

Fidelity of implementation of the PTR process was measured across three different indices: implementation, quality, and product. Fidelity on all indices remained relatively constant across phases (above 80%) for both school professionals, indicating that the multi-component coaching strategy effectively prepared school professionals to facilitate the PTR process. While facilitation fidelity measures are high, fidelity scores decreased slightly in Steps 2 and 3 for both participants during Phase 2, when they independently facilitated team meetings. Performance feedback was provided after the meetings to bring awareness to steps that were not completed or were completed incorrectly. Coaching took place to determine how to resolve any missteps or collect needed information.

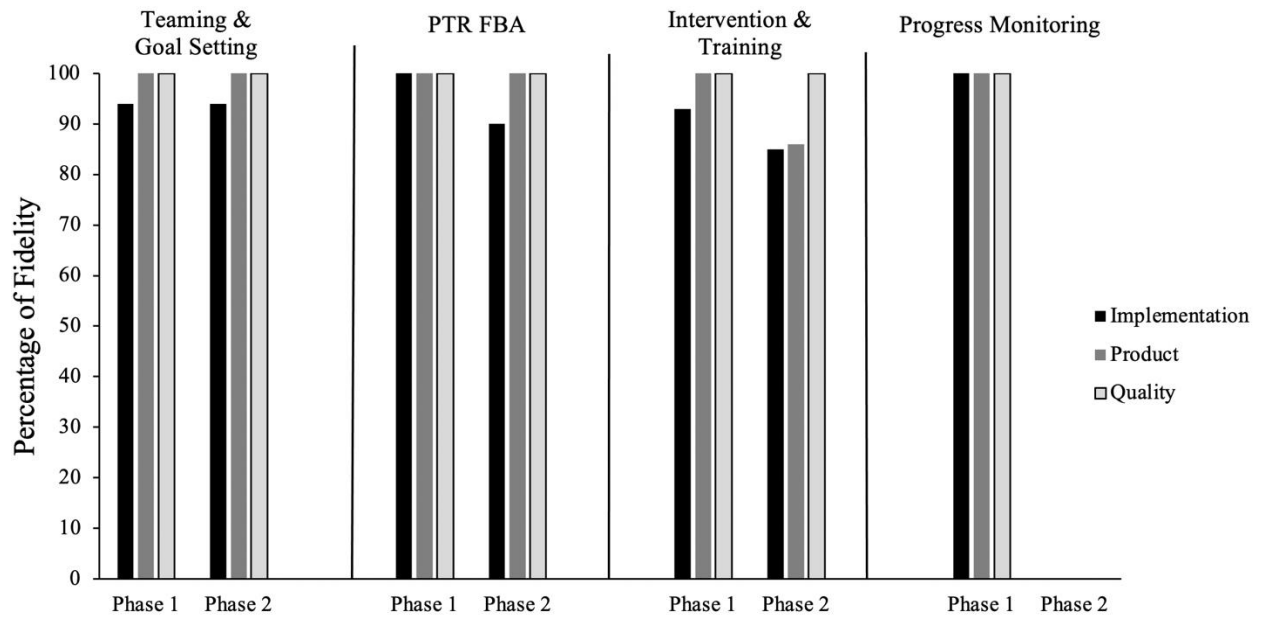


Figure 1. Facilitation fidelity for school professional 1.

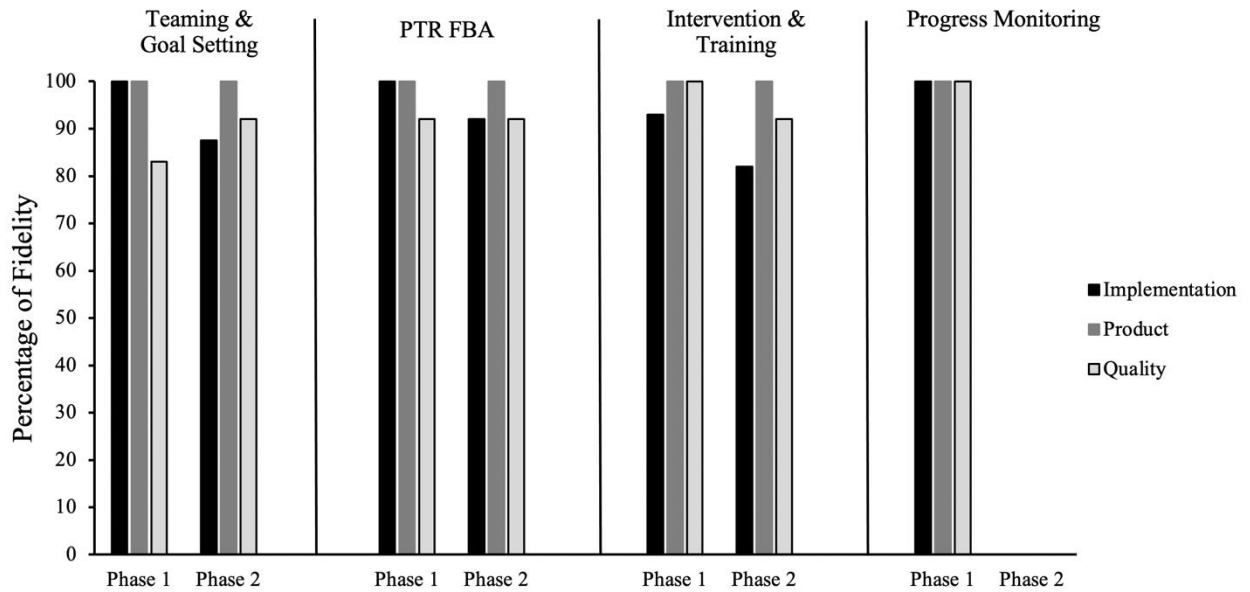


Figure 2. Facilitation fidelity for school professional 2.

Intervention Implementation Fidelity

Teacher intervention implementation was completed with fidelity across all students during all observations. For Jane, intervention fidelity was assessed during 40% of sessions following intervention. During the first observation, Jane's teacher, Ms. Volt, scored 75%, due to use of negative statements and lack of positive praise. Following in-situ coaching, Ms. Volt scored 100% during the next observation. For Michael, intervention fidelity was assessed during 40% of sessions following intervention. His teacher, Ms. Betty, scored 80% during the first observation. Following in-situ coaching, she scored 95% during the second observation. For Daphne, intervention fidelity was scored during 50% of observations. Ms. Flute scored 94%. In-situ coaching was provided to increase non-contingent attention. For Butch, intervention fidelity was scored during 33% of observations. Ms. Garcia scored 92% during the observation. In-situ

Student Behavioral Outcomes

Direct Observation

Direct observation data (Figures 1 and 2) indicated that implementation of the PTR intervention led to reduction in problem behavior and increases in replacement behaviors for all participating students in both Phase 1 and Phase 2 groups.

Jane. During baseline, Jane's off task behavior occurred an average of 78.2% of the time during observations of group math activities (range = 51% to 92.2%). Conversely, Jane was on task for an average of 27% of the time during observed group math activities (range = 8% to 49%). Although the last baseline data point shows a slight increasing trend in on task behavior, the percentage falls within the average of the previous baseline data points, thus the team decided that the data was stable enough to move to intervention. Following intervention, Jane's on task behavior increased from 18.9% in the last baseline session to 62.2% during the first intervention

session. A stable increasing trend for on task behavior occurred following implementation of the intervention. Jane's teacher was overjoyed with the outcomes of the intervention, so the team decided to generalize the intervention to another academic routine; English/Language Arts.

Michael. A variable baseline was present for Michael. Teachers expressed that variability in academic performance and attention was common for Michael, so data collection continued and variations in environmental factors were noted to assist with identification of factors that accounted for variability in data to assist with intervention plan development. It was also hypothesized that reactivity was a potential factor for variability of baseline data. Therefore, baseline sessions 5-8 were observed through video conferencing software (Zoom), where an iPad, connected to a Zoom call, was placed in the classroom prior to the observation time. The researcher and research assistants observed and collected data from outside of the classroom. The iPad was placed on the teacher's desk and was set to an angle that covered about half of the classroom, where Michael was most likely to be. Even with obscured observation, higher rates of engagement were still present.

Multiple environmental factors were observed during baseline that were also hypothesized to have contributed to variability of data, including teacher proximity, student-to-teacher ratio, and type of activity (reading or writing). Highest rates of engagement were observed when the teacher increased her proximity to the student and worked within a lower student-to-teacher ratio. The teacher was informed of these findings prior to the last two baseline sessions and she decreased her proximity to Michael by sitting on the opposite side of the table. In those sessions, on task behavior reduced to lower levels that were present at the beginning of baseline where the teacher was also observed to be further away from Michael. Given this information, intervention was implemented and engagement increased to 76% whereas

disruptive, off-task behaviors were observed .2 times per min during the first day of intervention. Off-task behavior stabilized around the .2 range, which was a drastic change from the variable trend in baseline. Engagement stabilized at a high level with minimal variability.

Daphne. All of Daphne's observations were conducted through Zoom to reduce reactivity, except for the last intervention session where in-vivo coaching was provided to the teacher. The teacher decided during the Goal Setting meeting that she would prefer observation occur in this manner to get an accurate picture of Daphne's behavior. During baseline, Daphne's appropriate communication behavior ranged from 0 instances per min to .1 instances per min (average = .05 per min). The trend was stable prior to move to baseline. Screaming behavior ranged from .4 instances per min to .7 instances per min (average = .57 per min). Data showed a decreasing trend at first, then a drastic increase back to previous levels. Due to time constraints and the severity of the behavior, intervention was implemented. During the third observation, classroom teacher reported another, out of area, as being high on days where screaming behavior was low; thus, a probe was collected for baseline levels of this behavior during the last observation. Following intervention, both screaming and out of area behaviors dropped to lower levels and show a decreasing trend, whereas appropriate communication demonstrates an increasing trend. There is no overlap in data for screaming and out of area behavior. However, there is an overlapping data point for appropriate communication.

Butch. During baseline, out of area behavior ranged from .1 to .5 occurrences per min (average = .28 per min). On task behavior occurred an average of 8.2% of the time across baseline sessions (range = 0% to 44%). During the first baseline session, Butch's on-task behavior was highest (44%) because he had access to his highly preferred computer program-based activities in the English Language Arts center. Following intervention there was an

immediate change in level for both targeted behaviors. On task behavior increased to 89% whereas disruptive behavior decreased to .1 occurrences per min. During the first two days of intervention, the school professional modeled the intervention for the teacher in the classroom and provided coaching to the teacher to fade the intervention implementation to her. On the third day of intervention implementation, Ms. Garcia implemented the intervention independently with some in-situ feedback from the school professional. This could account for a slight decrease in on-task behavior during this session due to decreased levels of intervention implementation fidelity. Rate of out of area behavior remained stable then demonstrated a decreasing trend to zero levels.

IBRST

Figure 5 displays teachers' IBRST rating scores for Phase 1 students (Jane and Michael). The patterns of IBRST data were similar to direct observation data across students. Both teachers observed high rates of off-task behavior and low rates of work completion or engagement in baseline. When the PTR intervention was introduced, the teachers' ratings were reversed, showing decreases in off-task behavior and increases in work completion or engagement. The data were quite stable in intervention for both behaviors, especially for Michael. The teachers' ratings of both behaviors decreased or increased by an average of 2-3 anchor points for both students when the PTR intervention was implemented.

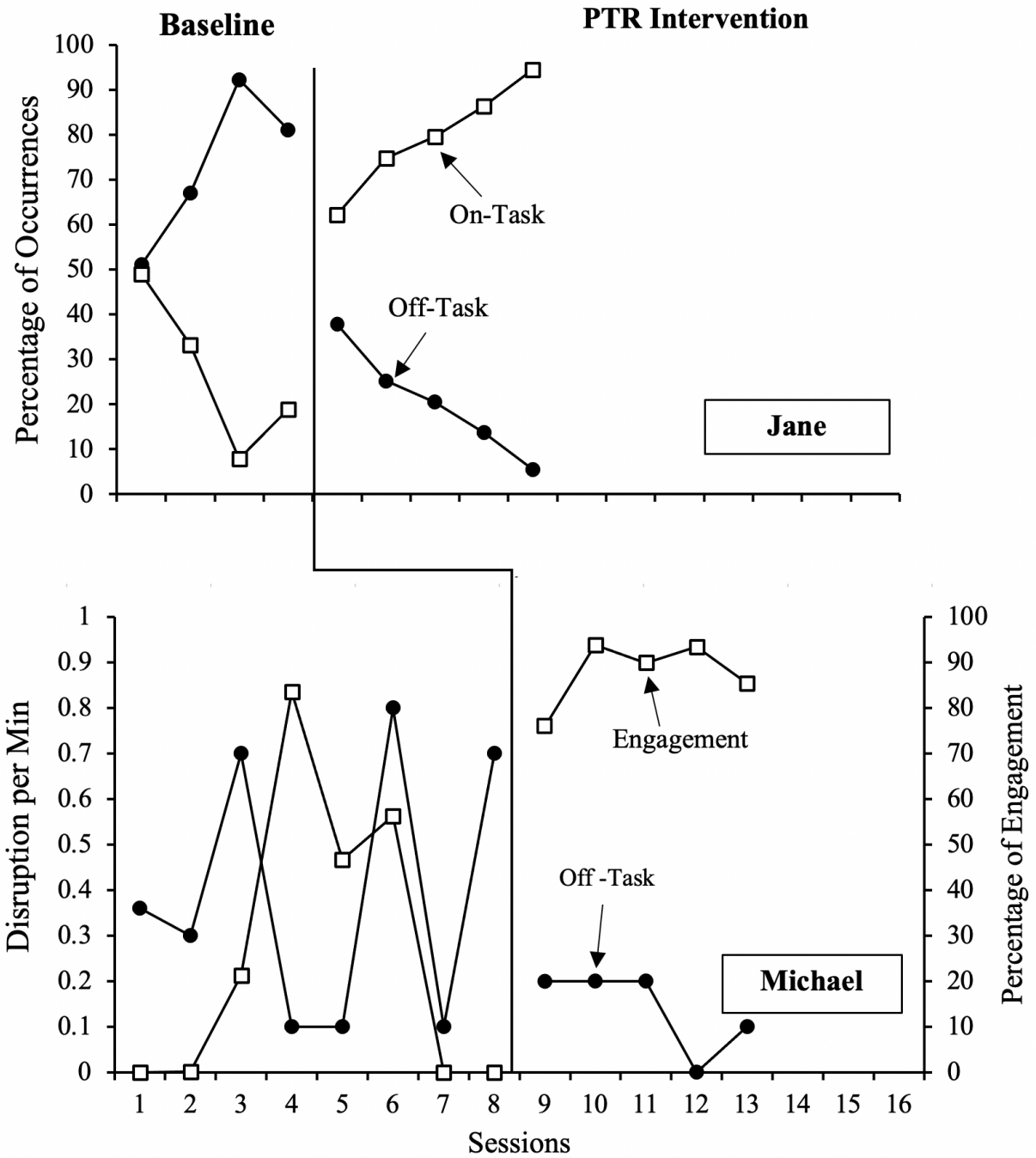


Figure 3. Student Behavior Data from Phase 1 (Co-Facilitation).

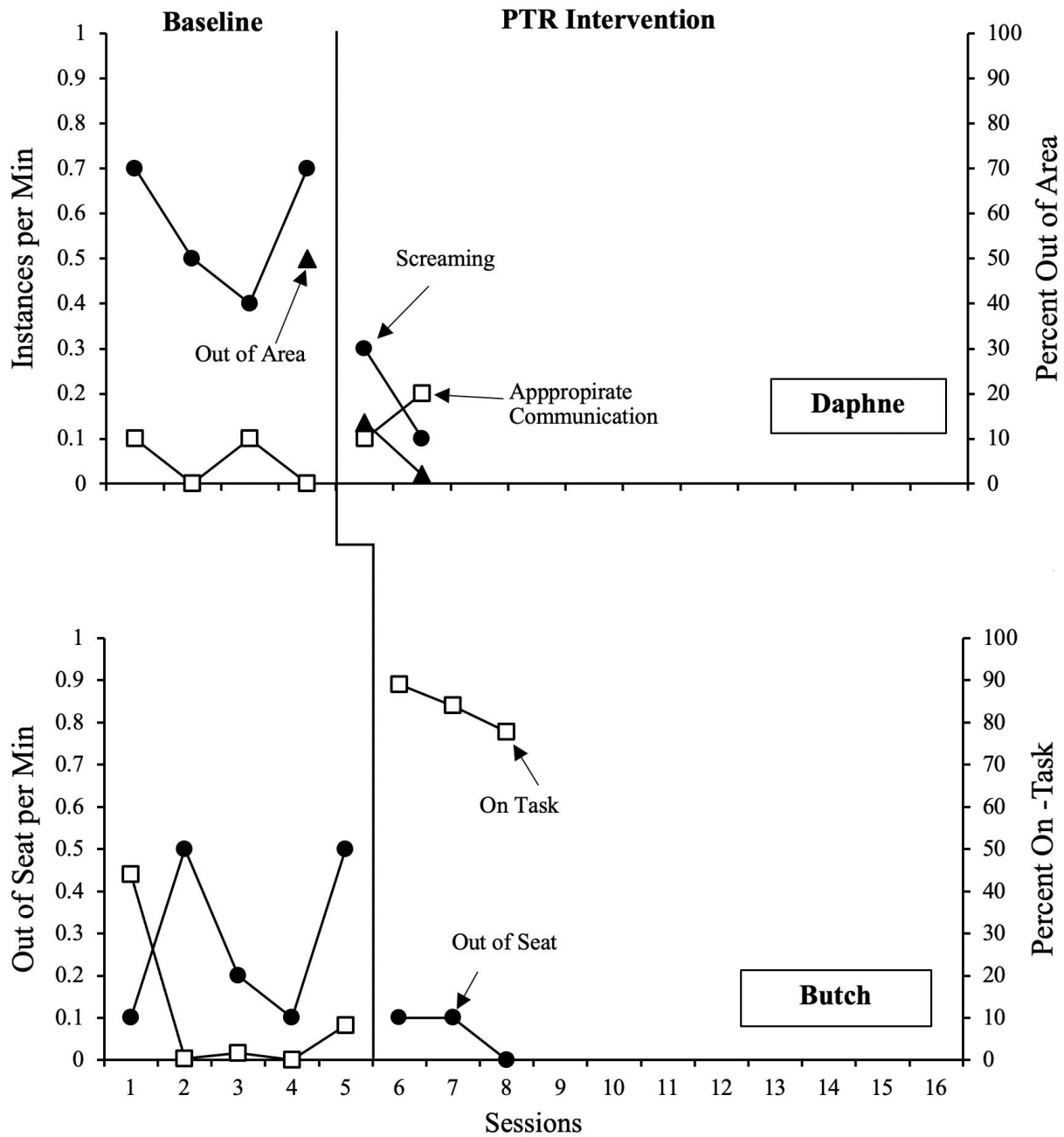


Figure 4. Student behavior data from phase 2 (independent facilitation).

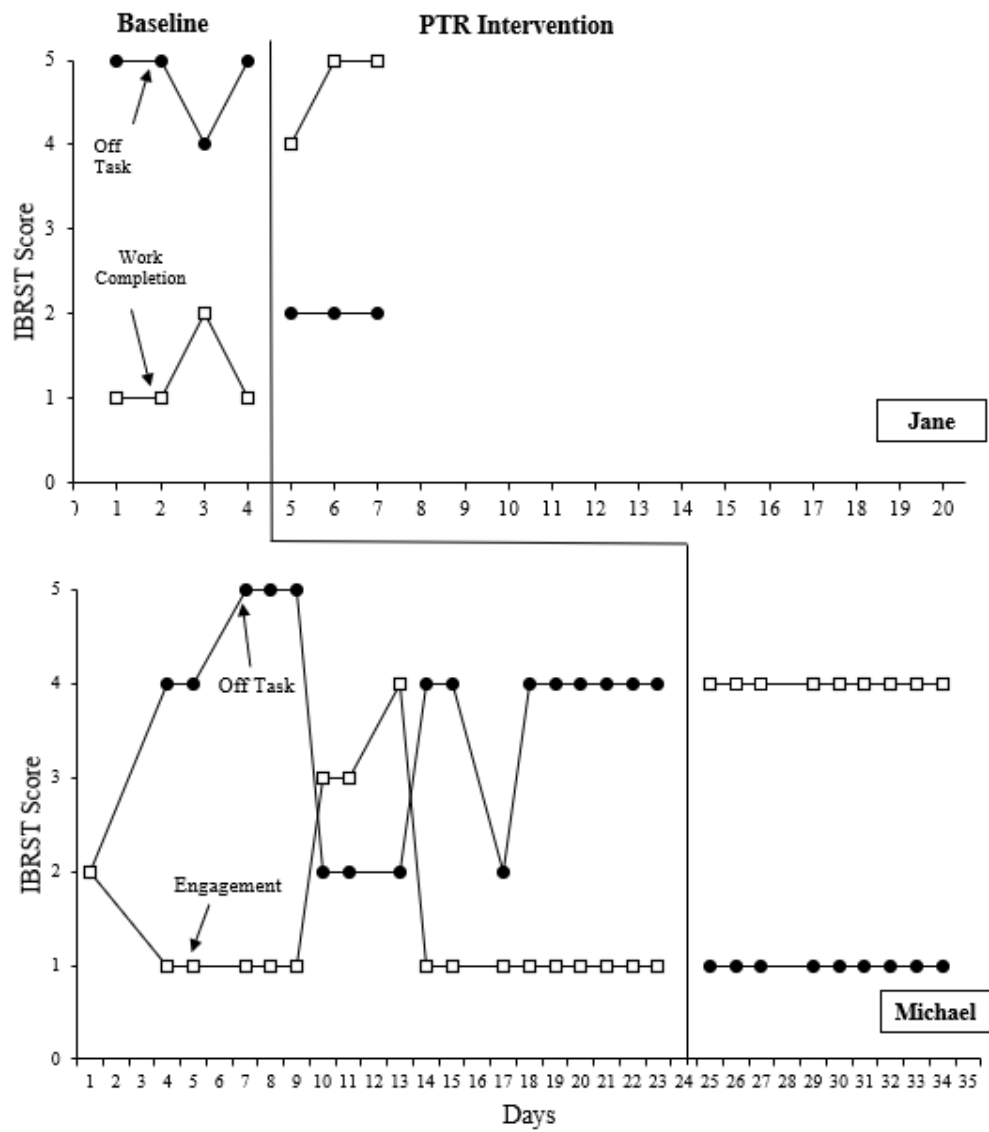


Figure 5. Teachers' IBRST Ratings

Social Validity

The average social validity rating scores, as shown in Table 6, indicated high levels of satisfaction and acceptability of the PTR process, interventions, and coaching between the school professionals. The ratings averaged 4.7 out of 6 for School Professional 1 and 5.9 for School Professional 2. Both professionals expressed that their administrators would approve of them using the intervention, that the resources needed for PTR were reasonable, that they understood the PTR process, and felt knowledgeable about facilitating the PTR process. School Professional 1 expressed that the time to facilitate the PTR process was too lengthy and complex to carry out. However, she also stated that she felt she would not need support to facilitate the PTR process in the future. It is possible that responses were misconstrued due to the reverse nature of some questions. Three out of four teacher participants completed the social validity survey. The ratings averaged from 5.1 to 5.9 out of 6 across the three teachers. They expressed that they felt the interventions developed for their student were easy to implement, effective, and fit with their classroom practices. Three out of four teachers decided to generalize the interventions to other routines during the school day due to their success during the targeted routine. Two out of four student participants completed the social validity survey. The social validity ratings averaged 3.9 out of 4 for Jane and 3.7 for Butch. Both students thought that the interventions helped them do better in class, expressed that they liked using the intervention and that they would tell their friend to try using their intervention if they were struggling in school.

Table 6. School Professional Social Validity Results

	School Professional 1	School Professional 2
1. PTR is an effective choice for understanding a variety of behaviors and developing interventions.	5	6
2. The total time required to implement PTR procedures would be manageable.	3	6
3. I am knowledgeable about PTR procedures.	5	5
4. *I would not be interested in implementing this PTR.	3	6
5. My administrator would be supportive of my use of PTR.	6	6
6. I would have positive attitudes about implementing PTR.	6	6
7. Use of PTR would be consistent with the mission of my school.	5	6
8. Material resources needed for PTR are reasonable.	4	6
9. *PTR is too complex to carry out accurately.	2	6
10. Use of PTR would not be disruptive to students.	6	6
11. *I would need consultative support to implement PTR.	6	6
12. I understand the procedures of PTR.	6	6
13. The amount of time required for record keeping would be reasonable.	3	6
14. *I would require additional professional development in order to implement PTR.	6	6
15. I have positive attitudes about implementing PTR.	4	6
Mean	4.7	5.9

Note. *Reverse scored items (i.e., if a school professional scored a 1, it is reported as a 6 in the table)

Table 7. Teacher Social Validity Results

	Ms. Volt (Jane)	Ms. Betty (Michael)	Ms. Garcia (Butch)
1. This intervention is a good way to handle the child's behavior problem.	5	4	6
2. I am able to allocate my time to implement this intervention.	6	5	6
3. I am knowledgeable about the intervention procedures.	6	5	6
4. The total time required to implement the intervention procedures is manageable.	6	5	6
5. My administrator would be supportive of my use of this intervention.	6	5	5
6. Preparation of materials needed for this intervention is manageable.	6	5	6
7. I have positive attitudes about implementing this intervention.	5	5	6
8. The intervention procedures easily fit in with my current practices.	6	5	6
9. This intervention will not be disruptive to other students.	4	5	6
10. *I will need consultative support to implement this intervention.	3	6	6
11. The amount of time required for data collection is reasonable.	6	5	5
12. Use of this intervention is consistent with the mission of my school.	6	5	6
13. Implementation of this intervention is well matched to what is expected in my job.	6	5	6
14. I would be committed to carrying out this intervention.	6	5	6
15. *This intervention is too complex to carry out accurately.	6	6	6
Mean	5.5	5.9	5.1

Note. *Reverse scored items (i.e., if a teacher scored a 1, it is reported as a 6 in the table)

Table 8. Student Social Validity Results

	Jane	Butch
1. Doing (the intervention) helped me do better in class.	4	4
2. I was able to do _____ correctly.	3	4
3. *Doing _____ was too much work for me.	4	4
4. *Doing _____ got in the way of doing things I wanted to do.	4	4
5. I can see myself doing _____ again.	4	4
6. *I would not want to do _____ again.	4	4
7. *Doing _____ took too long.	4	4
8. I like doing _____.	4	4
9. If my friend was having trouble, I would tell him/her to try doing _____.	4	4
10. Doing _____ focused too much attention on me.	4	1
Mean	3.9	3.7

Note. *Reverse scored items (i.e., if a student scored a 1 it is reported as a 5 in the table)

DISCUSSION

This study examined the impact of a multi-component coaching strategy on school-based professionals' facilitation of the PTR process and its impact on behavior of elementary school students with persistent problem behavior. Furthermore, this study evaluated technical adequacy of FBA/BIPs, facilitation fidelity of the PTR process, teacher intervention implementation fidelity, and social acceptability of coaching and the PTR process. The school-based professionals implemented the PTR process through a 2-phase coaching process that involved co-facilitation and independent facilitation.

Major Findings and Implications

The first and second research questions pertained to whether the multi-component coaching procedures used during the PTR process could improve the school-based professionals' technical adequacy of FBA/BIP and whether their PTR facilitation fidelity could be improved. The results showed that the two school professionals demonstrated marked increases in the technical adequacy of their FBA/BIPs and one school professional demonstrated an increase in FBA Knowledge following participation in the study. This adds to findings by Strickland-Cohen & Horner (2015), showing that school professionals' knowledge and technical skills can improve following specific training. However more research may be necessary to determine why one school professional's FBA Knowledge remained mostly unchanged following participation in the study.

The results also showed that the school professionals successfully facilitated the PTR process with fidelity with the coaching support provided by the researcher. The multi-component

coaching strategy that utilized the BST (Shayne & Miltenberger, 2013), side-by-side coaching (Wood et al., 2016), and performance feedback (Coddington et al., 2008) successfully taught school professionals to facilitate the PTR process independently. As the literature indicates, the findings from this study provide further evidence for the multi-component coaching procedures as an effective coaching method to train and support school personnel to implement behavioral interventions (Becker et al., 2013). In addition to the typical BST procedures (Kirkpatrick et al., 2019), one additional component added to the BST procedures during the PTR team meetings was side-by-side coaching (Coddington et al., 2008, Wood et al., 2016) during which the researcher provided in-vivo coaching and assistance to the school-based professionals. The performance feedback was provided to the professionals at the end of their implementation of each PTR process with classroom teachers.

Although the school professionals successfully facilitated the PTR process with fidelity, there were small decreases in implementation fidelity for both school professional participants in Steps 2 and 3 of Phase 2. Both of these steps resulted in high levels of side-by-side coaching and performance feedback to identify the function of behavior and develop behavior intervention plans accurately using best-practice procedures. Following the coaching performance feedback, the school professionals' PTR products were completed accurately and interventions were developed to facilitate positive behavior change.

The results of the study add to school-based coaching literature through identification of a different group of individuals, school professionals, who work with teachers to use a function-based intervention approach to decrease problem behavior in the classroom and teach students appropriate replacement behavior. Satisfactory facilitation by school professionals adds to PTR literature by identifying a new group of facilitators. Previous research has only evaluated PTR

facilitation by researchers or trained ABA professionals (BCBAs). This was the first study on PTR to demonstrate that school professionals could implement the PTR process by school-based professionals.

The third research question pertained to the impact of the PTR process on teacher implementation fidelity and student behavioral outcomes. It was found that overall, the participating teachers implemented the PTR intervention plan with fidelity, and fidelity increased following in-vivo modeling and performance feedback by the school-based PTR coaches. Increases in fidelity are supported by previous literature on teacher coaching, which indicates that teachers' implementation fidelity can increase with immediate coaching and feedback in a natural setting (Becker et al., 2013). The results of this study support previous findings that the PTR process was effective in reducing problem behavior for students in classrooms while increasing replacement behavior (Barnes et al., 2020; Iovannone et al., 2009; Kulikowki et al., 2015; Sullivan et al., 2020). The school teams could successfully develop and implement FBA/BIPs to address persistent problem behavior displayed by students who are in need of intensive Tier 3 behavior support, supporting previous research on function-based interventions in schools (Lloyd et al., 2016; Sugai & Horner, 2009). All student participants demonstrated immediate changes in targeted behavior following implementation of PTR interventions.

These findings mirror previous PTR research, demonstrating that when interventions are individualized and developed collaboratively between school personnel, student behavior changes quickly and desirably even when the PTR process is facilitated by a school professional who does not have specific ABA expertise. It found that the interventions that were commonly selected across participants in this study were antecedent strategies of environmental manipulations, use of visual supports, and setting clear expectations. Common teaching

strategies included increased academic performance, self-monitoring, and appropriate communication. Common reinforcement strategies included individualized reinforcement systems, minimizing attention, and positive verbal redirections. While this data should be interpreted with caution due to a small sample size, it may be interpreted that these interventions are among some of the most socially acceptable in a school environment (Bruin et al., 2013; Lloyd et al., 2019).

The results of the social validity indicated that all groups of participants had high levels of satisfaction and acceptance of the PTR process and multi-component coaching strategy. All teachers expressed their appreciation to the researcher and/or school professional when persistent problem behavior decreased following intervention implementation. Three out of four teachers even decided that they wanted to use the intervention during other times of the day. One of the teachers said that she was going to try the intervention with other students in the class who exhibit challenging behavior to make the strategy more of a class-wide strategy. Beyond the social validity survey, these anecdotes demonstrate true satisfaction with the interventions that they helped develop. One school professional expressed that the length of the coaching and facilitation process was longer than she expected, which could provide future researchers an opportunity to determine how to decrease the length and time of coaching to better accommodate the busy schedule of school professionals.

Limitations and Future Directions

While the current study shows promising results, some limitations do exist. The first limitation relates to the small sample size. With time constraints and difficulties navigating the COVID-19 pandemic, a small number of participants opted to participate in the study. Future researchers could replicate this study with a larger, more diverse sample to evaluate the external

validity of the current findings. The school professional participants both served as specialists in their school for behavior, however, in some schools, other types of school professionals with varying professional backgrounds (i.e., school psychologists, social workers) are tasked with writing behavior plans for students with challenging behavior. It is unclear how other school professionals would learn to facilitate the PTR process. In addition, the sample included individuals from limited ethnic and racial backgrounds. It is unclear if these findings would be replicated with a more diverse group of participants.

Because this research was conducted during the COVID-19 pandemic, many limitations arose including difficulties with recruitment of participants and environmental events that interfered with implementation of the PTR process, which impacted timely data collection. Thus, some baselines were extended longer than is typically found in PTR research, which may have impacted the results. Other common school-related limitations occurred during this study including student suspensions, state testing, and other changes in classroom routines, which limited data collection opportunities, thus potentially impacting the data set. As is also common in schools, teacher reported IBRST data were inconsistent, at times. Future researchers could seek to identify ways to increase consistent and accurate teacher data collection through potential reinforcement strategies or decreasing response effort.

To reduce student reactivity, some observations were conducted via Zoom. This was effective for its purpose, however, some limitations arose from this method of observation. There were multiple occasions where the iPad would fall out of place which limited the view of the classroom and the target student. Some data may not have been as accurate due to obscured views, interrupted internet connection, or the student leaving the line-of-sight. Future researchers should consider using virtual observation devices that can be maneuvered to follow students in a

classroom (Fischer et al., 2017) or seek other ways to minimize disrupted views through virtual observation.

Because school professionals received performance feedback during Phase 2, it is unclear what facilitation fidelity and student outcomes would be like if the PTR process was completed fully independently. Future researchers could consider adding another phase to analyze outcomes of fully independent facilitation to determine maintenance and generalization effects for school professionals. Due to time constraints, it is unclear what generalization or maintenance would look like for school professionals' facilitation for other cases. However, these results are promising as a method for increasing accessibility for schools who have limited resources to support students with challenging behavior. School-based teams would benefit from future research investigating dosage of coaching required for school professionals to become more fluent PTR facilitators.

The final limitation relates to training for school professionals. Due to the nature of their jobs, there were commonly disruptions during training sessions. Each training session took approximately 30-45 min, however, school professionals were often called into meetings, called for behavior support and de-escalation, or received parent phone calls which caused training to take a full day or even multiple days to complete. The longevity of training could have impacted the levels of fidelity demonstrated when required to independently facilitate. Future researchers could seek to shorten the training process or find other ways to make training more succinct.

Conclusion

The current study adds to both school-based PTR and school personnel coaching literature in numerous ways: the involvement of school professionals as PTR facilitators, replication of student outcomes when facilitated by school professionals, and demonstration that

the multi-component coaching is effective for school professionals who assist classroom teachers with students who demonstrate persistent problem behavior. In addition, school professionals' FBA knowledge and technical adequacy were improved following coaching for the PTR process. The PTR process and outcomes demonstrated high social validity. While these results should be interpreted with caution due to the aforementioned limitations, this study provides evidence that teaching other school professionals to facilitate the PTR process can increase accessibility for schools and students who are in need of individualized behavior support.

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APPENDIX A

BASIC FBA KNOWLEDGE ASSESSMENT

*Answers are highlighted

1. Events that occur immediately before and “trigger” a behavior (WHEN):
 - Setting event
 - Behavior
 - Function
 - Antecedent
 - Routine
 - Consequences

2. Any specific, observable, measurable action (WHAT):
 - Setting event
 - Antecedent
 - Function
 - Routine
 - Consequences
 - Behavior

3. These indirect circumstances “set-up” the behavior with events that occurred outside of school and effect the probability of behavior:
 - Routine
 - Antecedent
 - Consequences
 - Behavior
 - Function
 - Setting event

4. The purpose of or reason WHY a behavior continues to occur:
 - Routine
 - Consequences
 - Setting event
 - Function
 - Behavior
 - Antecedent

5. Events that reliably follow a behavior (outcomes of the behavior):
- Setting event
 - Function
 - Antecedent
 - Behavior
 - Routine
 - Consequences

Questions 6-8 correspond to the following scenario.

During recess, when Lizzy loses a game, she sometimes yells, cries, and falls to the ground. After this, Lizzy usually gets comforted by other students. Lizzy's teacher has noticed that this behavior happens more often on days when she is late to school and misses breakfast in the cafeteria.

6. Identify the **function** of the behavior from the items below.
- Avoid attention from peers
 - Avoid the game
 - Obtain attention from peers
 - Obtain attention from adults
7. Identify the **setting event** from the items below.
- During recess when Lizzy loses a game
 - Days when she is late to school and misses breakfast in the cafeteria
 - Lizzy usually gets comforted by other students
 - Yells, cries, and falls to the ground
8. Identify the **antecedent** to the behavior from the items below.
- During recess, when Lizzy loses a game
 - Days when she is late to school and misses breakfast in the cafeteria
 - Lizzy usually gets comforted by other students
 - Yells, cries, and falls to the ground
9. Identify the following behaviors that are specific, observable, and measurable (select all that apply):
- Leaves designated area
 - Impulsive
 - Distractible
 - Bullies peers
 - Calls out answers instead of raising hand to respond
 - Hits and scratches peers
 - Uses profanities towards others

Antecedent	Behavior	Consequences
When presented with an independent work task, specifically a math worksheet requiring multi-digit multiplication or division that is perceived as difficult,	The student will engage in disrespectful behavior (defined as calling the teacher negative names such as “racist”, folding arms across chest and staring around the room during the time provided for independent work, breaking the pencil point by bearing the pencil down hard on the paper, wadding up the worksheet or tearing it up, getting out of his seat and begins to walk around the room)	As a result, the teacher and other adults provide verbal reprimands, send him to the hallway or send him to the office. He typically returns after math is over. The teacher assigns the worksheet for homework.

10. Based on the ABC data above summarizing information obtained from a functional behavior assessment- What is the most likely **function** of the problem behavior?

- Attention from peers
- Attention from adults
- **Escape/delay of difficult independent tasks**
- Access to preferred activities

Read the hypothesis statement below which summarizes the information obtained from a functional behavior assessment. Answer all the questions following the hypothesis.

Student Quinn

Grade 3rd

Routine: Reading

*Note: The student reads above grade level and can complete worksheets with success.

Hypothesis Statement:

Antecedent	Behavior	Consequences
When presented with an independent work task, specifically a math worksheet requiring multi-digit multiplication or division that is perceived as difficult,	The student will engage in disrespectful behavior (defined as calling the teacher negative names such as “racist”, folding arms across chest and staring around the room during the time provided for independent work, breaking the pencil point by bearing the pencil down hard on the paper, wadding up the worksheet or tearing it up, getting out of his seat and begins to walk around the room)	As a result, the teacher and other adults provide verbal reprimands, send him to the hallway or send him to the office. He typically returns after math is over. The teacher assigns the worksheet for homework.

11. Identify the most appropriate **replacement/alternative behavior** based on the function of the behavior.

- Ask to read or work with a peer
- Ask for a work break
- Earn extra recess with a peer for finishing work quietly

- Read quietly and finish worksheet independently
 - Ask to talk to the teacher
12. Select the **Antecedent/Prevention intervention** that best matches the information in the hypothesis statement.
- Give student worksheet with fewer problems on the worksheet and easier (2nd grade) reading passages
 - Move student's seat closer to the teacher
 - Modify the independent work task and provide student choices of who (which peer) to work with
 - Remind the student of the school and class expectations/rules about being respectful
 - Have student wear headphones to reduce distractions
13. Select the **Teach/Replacement behavior** intervention that best matches the information and function of behavior in the hypothesis statement.
- Teach student to finish worksheet, then read independently
 - Teach student to ask teacher for a break
 - Teach student to ask for an alternative assignment
 - Teach student to ask to work with a peer
 - Teach student to respectfully gain teacher attention
14. Select the **Reinforcement intervention** that best matches the information and function of behavior in the hypothesis statement.
- Student gets to play game with teacher for completing reading work without making negative comments
 - Student earns 5 minutes free time with peer for being on task during the independent reading station and refraining from making negative comments
 - Send a note home to the student's parents when she works hard in class
 - Let student work with peer if respectfully asks
 - Allow student to read independently
15. Select the **Responding to Behavior (alter consequences) intervention** that best matches the information and function in the hypothesis statement.
- Peer earn "Wow Cards" for ignoring the student's negative behavior
 - Peers tell the student to "be respectful" after she makes negative comments
 - Provide an alternative assignment
 - Redirect/prompt the student to request to work with the teacher
 - Have student write what she did wrong and what she should do next time

APPENDIX B

INDIVIDUALIZED BEHAVIOR RATING SCALE TOOL (IBRST)

Student: Jane Specific Routine Math 1:00-2:20pm Teacher: Ms. Volt

Target Behavior		Date	2/5/21										
Off Task	81% - 100%	5	5	5	5	5	5	5	5	5	5	5	5
	61% - 80%	4	4	4	4	4	4	4	4	4	4	4	4
	41% - 60%	3	3	3	3	3	3	3	3	3	3	3	3
	21% - 40%	2	2	2	2	2	2	2	2	2	2	2	2
	10% - 20%	1	1	1	1	1	1	1	1	1	1	1	1
On Task	> 90%	5	5	5	5	5	5	5	5	5	5	5	5
	61% - 90%	4	4	4	4	4	4	4	4	4	4	4	4
	31% - 60%	3	3	3	3	3	3	3	3	3	3	3	3
	1% - 30%	2	2	2	2	2	2	2	2	2	2	2	2
	0%	1	1	1	1	1	1	1	1	1	1	1	1

KEY:

Problem Behavior – Off Task

Definition: Occurrences of walking around the classroom, coloring at her table, and doing anything other than starting assigned task (e.g., rocking in her chair, tapping pencil, picking skin, playing with shoes), requests to leave the room (e.g., clinic)

Time/Routine:

- 5=Terrible day **81%-100% off task**
- 4= Bad day **61%-80% off task**
- 3= So-so day **41%-60% off task**
- 2= Good day **21%-40% off task**
- 1= Great day **10%-20% off task**

Replacement Behavior – On Task (work completion)

Definition: When analyzing work products (e.g., worksheets, assignments) score the percentage of work completed.

Time/Routine:

- 5=Great day **more than 90% of work completion**
- 4= Good day **61%-90% work completion**
- 3= So-so day **31%-60% work completion**
- 2= Bad day **1%-30% work completion**
- 1= Terrible day **0% of work completed**

APPENDIX C
JANE BEHAVIOR INTERVENTION PLAN

Hypothesis: When prompted to complete math instruction, Jane will engage in off task behaviors. As a result, she will avoid or delay non-preferred academics.

Intervention Strategy	Description and Steps
Setting Modification	<ol style="list-style-type: none"> 1. Make sure Jane’s personal materials are cleared from the table, so that she only has access to academic materials. 2. Remind her the expectations- 1 math problem = 1 token, 3 tokens = 3 min free time

TEACH Intervention

Intervention Strategy	Description and Steps
Increased Academic Engagement-Token Board	<ol style="list-style-type: none"> 1. Present expectations to Jane and provide explanation for how token board will be used. 2. Use positive language to explain expectations <u>EX.</u> “Jane, it is time to do your math work. You can earn one star for each problem that you complete. After you complete 3 problems, you can have a break. What do you want to work for?” 3. Allow Jane to choose an activity or item to work for during breaks. 4. Prompt Jane put tokens on the board and provide praise as Jamie completes problems.

REINFORCE Intervention

Intervention Strategy	Description and Steps
Response to task completion	<ol style="list-style-type: none"> 1. When Jane completes math problems, prompt her to put a token on her board. 2. Provide enthusiastic, behavior specific praise for math problems that are completed. 3. Once she has three tokens, provide access to a preferred item (i.e., putty, coloring, play doh, or candy). Make a big deal of her work completion with enthusiastic, behavior specific praise. 4. Set a timer for 3 minutes.

<p>Response to off task behavior</p>	<ol style="list-style-type: none"> 5. When the timer ends, prompt Jane back to math work. Remind her that she can earn more time away from work when she completes math problems. 1. When Jane engages in off task behaviors (i.e., rocking in her chair, tapping pencil, picking skin, playing with shoes, requests to leave the room), remind Jane ONE time what she is working for and how to earn tokens. EX. “Remember, you are working to color. First complete 3 math problems, then you can color for 3 minutes” 2. Use positive phrasing to tell Jane what she SHOULD do. Avoid using negative language telling Jane what she SHOULD NOT do. 3. Then, minimize attention toward the behavior by reducing eye contact, verbal prompting or redirection, and use pivot praise. 4. If further prompting is needed, gesturally point to the token board as a reminder of the expectations while minimizing verbal prompts.
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APPENDIX D
TEACHER INTERVENTION FIDELITY CHECKLIST

Date: _____

Teacher: _____

Participant: Jane _____

Observer: _____

Interventions	Implemented Correctly?
PREVENT	
<u>Setting Modification:</u>	
1. Cleared personal materials from Jane's work space	Y / N / NA
2. Remind Jane of work expectations	Y / N / NA
TEACH	
<u>Replacement behavior—academic engagement</u>	
1. Presented expectations and provided explanation for token board	Y / N / NA
2. Used positive phrasing	Y / N / NA
3. Prompted Jane to choose a reinforcer	Y / N / NA
4. Prompted to put tokens on the board (if needed) after problem completion	
REINFORCE	
<u>Reinforce academic engagement</u>	
1. Praised for problem completion	Y / N / NA
2. Praised for earning free time	Y / N / NA
3. Provided access to preferred activity	Y / N / NA
4. Started timer (3 min)	Y / N / NA
5. Prompted Jane back to work at the end of break	Y / N / NA
6. Reminded her that she can earn another break after working	Y / N / NA
<u>Discontinue reinforcement of problem behavior</u>	
1. Provided 1 verbal reminder	Y / N / NA
2. Used positive phrasing	Y / N / NA
3. Gesturally prompted after initial verbal reminder	Y / N / NA
4. Minimized attention (e.g., reduced eye contact & verbal prompting)	Y / N / NA
Behavior Plan Assessment Implementation: Total # of Y/Y + N total	

APPENDIX E

<u>Social Validity- Teacher version</u>		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	This intervention is a good way to handle the child's behavior problem.	1	2	3	4	5	6
2.	I am able to allocate my time to implement this intervention.	1	2	3	4	5	6
3.	I am knowledgeable about the intervention procedures.	1	2	3	4	5	6
4.	The total time required to implement the intervention procedures is manageable.	1	2	3	4	5	6
5.	My administrator would be supportive of my use of this intervention.	1	2	3	4	5	6
6.	Preparation of materials needed for this intervention is manageable.	1	2	3	4	5	6
7.	I have positive attitudes about implementing this intervention.	1	2	3	4	5	6
8.	The intervention procedures easily fit in with my current practices.	1	2	3	4	5	6
9.	This intervention will not be disruptive to other students.	1	2	3	4	5	6
10.	I will need consultative support to implement this intervention.	1	2	3	4	5	6
11.	The amount of time required for data collection is reasonable.	1	2	3	4	5	6
12.	Use of this intervention is consistent with the mission of my school.	1	2	3	4	5	6
13.	Implementation of this intervention is well matched to what is expected in my job.	1	2	3	4	5	6
14.	I would be committed to carrying out this intervention.	1	2	3	4	5	6
15.	This intervention is too complex to carry out accurately.	1	2	3	4	5	6

Student Social Validity		I totally disagree	I kind of disagree	I kind of agree	I totally agree
1.	Doing _____ helped me do better in class.				
2.	I was able to do _____ correctly.				
3.	Doing _____ was too much work for me.				
4.	Doing _____ got in the way of doing things I wanted to do.				
5.	I can see myself doing _____ again.				
6.	I would not want to do _____ again.				
7.	Doing _____ took too long.				
8.	I like doing _____.				
9.	If my friend was having trouble, I would tell him/her to try doing _____.				
10.	Doing _____ focused too much attention on me.				

<u>Social Validity-</u> <u>School-based professional version</u>		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	PTR is an effective choice for understanding a variety of behaviors and developing interventions.	1	2	3	4	5	6
2.	The total time required to implement PTR procedures would be manageable.	1	2	3	4	5	6
3.	I am knowledgeable about PTR procedures.	1	2	3	4	5	6
4.	I would not be interested in implementing this PTR.	1	2	3	4	5	6
5.	My administrator would be supportive of my use of PTR.	1	2	3	4	5	6
6.	I would have positive attitudes about implementing PTR.	1	2	3	4	5	6
7.	Use of PTR would be consistent with the mission of my school.	1	2	3	4	5	6
8.	Material resources needed for PTR are reasonable.	1	2	3	4	5	6
9.	PTR is too complex to carry out accurately.	1	2	3	4	5	6
10.	Use of PTR would not be disruptive to students.	1	2	3	4	5	6
11.	I would need consultative support to implement PTR.	1	2	3	4	5	6
12.	I understand the procedures of PTR.	1	2	3	4	5	6
13.	The amount of time required for record keeping would be reasonable.	1	2	3	4	5	6
14.	I would require additional professional development in order to implement PTR.	1	2	3	4	5	6
15.	I have positive attitudes about implementing PTR.	1	2	3	4	5	6

APPENDIX F

VISUAL STRATEGY SAMPLES INCLUDED IN PTR PLANS



	<p>Jane is working for...</p>				
<p>First work, then break.</p>	<table border="1"><tr><td data-bbox="932 831 1122 1058"><p>Putty</p></td><td data-bbox="1122 831 1317 1058"><p>Candy</p></td></tr><tr><td data-bbox="932 1058 1122 1293"><p>Play Doh</p></td><td data-bbox="1122 1058 1317 1293"><p>Coloring</p></td></tr></table>	<p>Putty</p>	<p>Candy</p>	<p>Play Doh</p>	<p>Coloring</p>
<p>Putty</p>	<p>Candy</p>				
<p>Play Doh</p>	<p>Coloring</p>				
<table border="1"><tr><td data-bbox="354 1150 505 1293"></td><td data-bbox="542 1150 693 1293"></td><td data-bbox="740 1150 891 1293"></td></tr></table>					

Daily Rewards				
Lunch with friend	Read with friends	Timed reading	Fidget box	Token
Did I come to group and participate for <u>15</u> minutes?				
<u>Monday</u>	<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>	<u>Friday</u>
Did I earn <u>3</u> points this week?				
Treasure box	Turn in tokens	10 min of football		

Butch's Schedule	
1	
2	
3	

Raise my hand!



Butch's Choices		
Coloring Sheet	Drawing	Fidget box

APPENDIX G

USF IRB APPROVAL LETTER



APPROVAL

November 2, 2020

Rachel Ayres
xxxx xxxxx
Tampa, FL xxx

Dear Rachel Ayres:

On 10/31/2020, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY001241
Review Type:	Expedited 6, 7
Title:	School-Based Professional Coaching on Facilitation of the Prevent-Teach-Reinforce (PTR) Model for Students with Persistent Problem Behavior
Approved Protocol and Consent(s)/Assent(s):	<ul style="list-style-type: none">• Thesis Protocol;• Parental Consent & Permission Form;• School Professional Consent Form;• Student Assent;• Teacher Consent Form; <p>Approved study documents can be found under the 'Documents' tab in the main study workspace. Use the stamped consent found under the 'Last Finalized' column under the 'Documents' tab.</p>

Within 30 days of the anniversary date of study approval, confirm your research is ongoing by clicking Confirm Ongoing Research in BullsIRB, or if your research is complete, submit a study closure request in BullsIRB by clicking Create Modification/CR.

This study involving child participants falls under the minimal risk category 45 CFR 46.404: Research not involving greater than minimal risk.

Requirements for Assent and/or Permission by Parents or Guardians: 45 CFR 46.408 Permission of one parent is sufficient. Assent will be obtained as outlined in the IRB application.

Institutional Review Boards / Research Integrity & Compliance

FWA No. 00001669

University of South Florida / 3702 Spectrum Blvd., Suite 165 / Tampa, FL 33612 / 813-974-5638

Page 1 of 2



In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

Jennifer Walker
IRB Research Compliance Administrator

Institutional Review Boards / Research Integrity & Compliance

FWA No. 00001669

University of South Florida / 3702 Spectrum Blvd., Suite 165 / Tampa, FL 33612 / 813-974-5638

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