EFFECTS OF SELF-DELIVERED PERFORMANCE FEEDBACK AND IMPACT ASSESSMENT VIA THE INDIVIDUAL STUDENT INFORMATION SYSTEM (ISIS-SWIS) ON BEHAVIOR SUPPORT PLAN TREATMENT FIDELITY AND STUDENT OUTCOMES

by

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A DISSERTATION

Presented to the Department of Special Education and Clinical Sciences
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

September 2014

DISSERTATION APPROVAL PAGE

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Title: Effects of Self-delivered Performance Feedback and Impact Assessment via the Individual Student Information System (ISIS-SWIS) on Behavior Support Plan Treatment Fidelity and Student Outcomes

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DISSERTATION ABSTRACT

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Doctor of Philosophy

Department of Special Education and Clinical Sciences

September 2014

Title: Effects of Self-delivered Performance Feedback and Impact Assessment via the Individual Student Information System (ISIS-SWIS) on Behavior Support Plan Treatment Fidelity and Student Outcomes

The success of behavioral interventions depends not just on the quality of procedures employed but on the extent to which procedures are implemented. This study used a multiple-baseline across participants single-case design to assess the impact of an online data management application (the Individual Student Information System; ISIS-SWIS) on the fidelity and impact of individual student behavior support plans in typical school contexts. Three students with patterns of problem behavior and their supporting adults participated in the study. The research question examined if a functional relation exists between use of (a) performance self-assessment and (b) student impact assessment via ISIS-SWIS on the fidelity of behavior support plan implementation by adults and improvement in academic engagement and problem behavior by students. Results indicate the efficacy of ISIS-SWIS in improving treatment fidelity, decreasing student problem behavior, and increasing student academic engagement. Potential contributions of the study are discussed in terms of establishing efficient data systems for schools to use in monitoring staff and student behavior and using these data in a meaningful way that results in improved student outcomes and sustained behavior change.

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CHAPTER I

INTRODUCTION

Statement of Problem

The focus of this work is the systematic analysis of a strategy for improving the fidelity with which educational and behavioral supports are implemented. We know much more about how to deliver effective education than what is actually delivered in schools, and a major challenge in the field today is to define highly efficient strategies for improving the use of practices that we know benefit students (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). This concern is of special importance in the area of behavior support, where student problem behaviors function as a barrier to both social and academic success in school and beyond (Conroy, Dunlap, Clarke, & Alter, 2005; Egeland, Kalkoske, Gottesman, & Erickson, 1990; Reid & Patterson, 1991; Rose, Rose, & Feldman, 1989; Stevenson & Goldman, 2001; Walker et al., 1996). Too often, extensive time and effort is committed to assessment and behavior support plan design, only to be followed by weak implementation and minimal benefit for students. One response to this challenge with newly developed technical efficiency is the use of computer applications that allow users to store and organize data related to staff treatment fidelity and student behavior. Such computer applications can provide a way for staff to self-assess their performance in implementing student plans and self-deliver performance feedback. In this document the challenge of problem behavior in schools is reviewed, the well-documented value of existing intervention approaches is summarized, and the potential value of performance feedback within a self-monitoring format is proposed.

Literature Review

Problem behaviors such as noncompliance, insubordination, classroom disruption, and bullying are a major concern in schools (Anderson & Kincaid, 2005; Sugai & Horner, 2006; Walker, Ramsey, & Gresham, 2005). Without intervention, students who display problem behavior often continue these behaviors throughout elementary school and into adolescence (Campbell, 1995; Fox & Dunlap, 2007; McGee, Partridge, Williams, & Silva, 1991; Shaw, Gilliom, & Giovannelli, 2000). In addition, students who exhibit problem behavior are more likely to develop maladaptive relationships with caregivers, teachers, and peers, become socially isolated, and experience school failure (Walker et al., 1996). Without intervention, problem behavior will likely increase in rate and severity, and behavior problems that occur early in a child's life are linked with poor outcomes such as substance abuse, unemployment, juvenile delinquency, school dropout, criminal behavior, diagnosis of psychiatric disorders, and behavior problems in adolescence (Conroy et al., 2005; Egeland et al., 1990; Reid & Patterson, 1991; Rose et al., 1989; Stevenson & Goldman, 2001). The deleterious outcomes associated with students who engage in problem behavior demands that interventions be put in place to change these students' developmental trajectory. Luckily, the abundance of literature on function-based behavior interventions and supports can guide this effort.

There is substantial empirical evidence indicating the effectiveness of function-based interventions and supports for students who engage in problem behavior (see Conroy et al., 2005; Dunlap & Carr, 2007; Dunlap & Fox, 2012; Dunlap et al., 2003; Ingram, Lewis-Palmer, & Sugai, 2005; Iwata, Dorsey, Slifer, Bauman, & Richman, 1994; Marquis et al., 2000; Newcomer & Lewis, 2004). Function-based interventions and

supports are a component of school-wide positive behavior interventions and supports (SWPBIS), a continuum of prevention and intervention strategies that are organized into three tiers: universal or primary prevention (Tier I), secondary or targeted interventions (Tier II), and tertiary or intensive interventions (Tier III) (Horner, Sugai, & Anderson, 2010; Sugai, 2000). Tier I supports consist of school or classroom-wide support systems provided to all students. Tier II supports include more targeted interventions for students whose behavior does not respond to Tier I supports. Tier III interventions are provided to students whose behavior does not respond to universal and secondary supports (Horner & Sugai, 2006).

Tier III Supports

Tier III interventions are highly individualized and guided by comprehensive assessment information (i.e. functional behavior assessment; FBA) and organized around a written plan of support (i.e., behavior support plan; BSP). The FBA determines the conditions where problem behavior is most likely and the function of the student's problem behavior in those conditions (see Crone, Hawken, & Horner, 2010; Fox & Gable, 2003; Gresham, Watson, & Skinner, 2001; Horner, Albin, Todd, Newton, & Sprague, 2011; O'Neill et al., 1997; Sugai et al., 2000; Sugai, Lewis-Palmer, & Hagan-Burke, 1999; Umbreit, Lane, Ferro, & Liaupsin, 2006; Watson & Steege, 2003). The BSP is developed based on the results of the FBA and defines specific strategies for preventing the occurrence of problem behavior, teaching socially appropriate alternative behaviors, and responding to occurrences of problem behavior (Horner et al., 2011; O'Neill et al., 1997; Scott, Anderson, & Spaulding, 2008; Sugai, et al., 2000).

A successful BSP is developed from knowledge about (a) the student, (b) the school context in which the plan will be implemented, and (c) behavioral theory (Benazzi, Horner, & Good, 2006). Regardless if a BSP is technically adequate (i.e., it includes function-based strategies for preventing problem behavior, teaching alternative behaviors, and responding to problem behavior), if it is not feasible to implement within the school context, it is unlikely the plan will be implemented. Contextual fit, or the extent to which strategies outlined in the BSP align with the values, resources, and skills of the student and those who will implement the plan (Albin, Lucyshyn, Horner, & Flannery, 1996) is an essential consideration in BSP development and implementation. Factors that contribute to contextual fit include (a) staff knowledge of BSP elements, (b) staff skills needed to implement the BSP, (c) the extent to which staff values are consistent with BSP, (d) available resources to implement BSP (e.g., staffing, funding, materials, space), (e) administrative support, (f) if staff expect the BSP to be effective, (g) if staff agree the BSP is in the best interest of the student, and (h) if the BSP is efficient to implement (Horner, Salentine, & Albin, 2003).

In addition to the abundance of literature indicating the effectiveness of function-based interventions and supports (i.e., a BSP derived from the results of the FBA), the Individuals with Disabilities Education Act (IDEA 1997) mandates the use of FBA to guide the development of positive behavioral supports (i.e., the BSP) for students with disabilities who exhibit problem behavior to the extent that it interferes with their educational placement, their learning, or their peers' learning (IDEA Amendments, 1997; IDEA Improvement Act, 2004). FBA and positive behavior support are now considered

best practice in addressing the problem behavior of students with and without disabilities (Crone & Horner, 2010; Scott & Caron, 2005, Sugai & Horner, 2006).

Once the school team develops the BSP and the student's Individualized Education Program (IEP) team approves it, the next task is to ensure the BSP is accurately implemented in the classroom. Treatment fidelity, or the extent to which a treatment is delivered as planned and described (Cooper, Heron, & Heward, 2007), is essential to produce targeted results (i.e., increase in socially appropriate behavior and decrease in problem behavior). Treatment fidelity has been a topic of considerable interest for researchers in recent years (see Gresham, 2005; Noell, Witt, LaFleur, Mortenson, & LeVelle, 2000; Noell, et al. 2005; Noell, 2008a; Noell, 2008b; Noell, Witt, Gilbertson, Ranier, & Freeland, 1997; Reinke, Lewis-Palmer, & Merrell, 2008; Stage, Jackson, Jensen, Mascovitz, Bush, & Violette, 2008), and its importance is especially timely given the recent push from schools, districts, and state departments of education to close the achievement gap between students with disabilities and their peers (Coffey & Horner, 2012).

Unfortunately, teachers are often not provided with sufficient preservice training that enable them to implement behavioral interventions and supports with high fidelity in their classrooms (Begeny & Martens, 2006; Simonsen, MacSuga, Fallon, & Sugai, 2013). And even when teachers receive adequate preservice training, they are not always provided with adequate organizational support (i.e., coaching, data systems) that enable them to effectively implement evidence-based practices in their classroom. Regardless whether a teacher receives adequate preservice training, if the current environment (i.e., the school) does not support teacher behavior (i.e., implementation of BSP), the behavior

will likely extinguish. Sustained implementation of the BSP requires that the teacher receives adequate training and support and that contingencies of reinforcement (e.g., supervisor approval and praise, student success, etc.) are in place to increase and maintain teacher implementation behavior. As such, it is crucial that school leaders (e.g., administrators, school psychologists, behavior specialists) "identify effective and efficient ways to support teachers' use of evidence-based classroom management practices" (Simonsen et al., 2013, p. 5). A variety of methods to train and support teachers in implementing interventions with fidelity have been investigated, including lecture, discussion, assigned reading, skill demonstration/modeling, practice, performance feedback, and coaching (Allen & Forman, 1984; Fixsen et al., 2005; Joyce & Showers, 2002; Pinkelman, Horner, & Machalicek, in preparation). How these training methods are defined varies widely throughout the literature, making comparisons across studies difficult. However, common themes have surfaced from the staff training literature, providing the field with empirical evidence of best practices in staff training.

Performance Feedback

In a synthesis of the staff training literature, Fixsen et al. (2005) concluded, "training by itself does not result in positive implementation outcomes (changes in practitioner behavior in the clinical setting) or intervention outcomes (benefits to consumers [students])" (p. 40-41). Rather, performance feedback is essential to teach staff to implement interventions with high fidelity. Similarly, in a meta-analysis of the staff training and professional development literature, Joyce and Showers (2002) concluded that in order for practitioners to transfer skills learned into the classroom, training must include opportunities for teachers to demonstrate skills and receive

feedback from an expert or coach. The conclusions and recommendations outlined by Fixsen et al. (2005) and Joyce and Showers (2002) have been corroborated in a wealth of studies teaching academic and behavior interventions (see Codding, Feinberg, Dunn, & Pace, 2005; DiGennaro, Martens, & McIntyre, 2005; Fox, Hemmeter, Snyder, Binder, & Clarke, 2011; Fullerton, Conroy, & Correa, 2009; Mortenson & Witt, 1998; Noell et al., 2005; Noell, Witt, LaFleur, Mortenson, LeVelle, 2000; Rodriguez, Loman, & Horner, 2009; Schepis, Reid, Ownbey, & Parsons, 2001; Sterling-Turner, Watson, & Moore, 2002; Wickstrom, Jones, LaFleur, & Witt, 1998). Across the literature, performance feedback by an expert or coach has been found superior to other training or consultation methods.

Parsons and Reid (1995) outlined a protocol for delivering performance feedback, consisting of (a) one positive or empathetic statement regarding the observation, (c) positive feedback and praise for at least one component of the intervention implemented correctly, (d), corrective feedback for components implemented incorrectly, (e) questions directed to the practitioner to ensure they understood the corrective feedback, (f) a description of next steps and if future observations are needed, and (g) a final positive statement. Similarly, O'Reilly et al. (1992) described specific steps that university supervisors used to deliver performance feedback to preservice teachers, including (a) a positive statement regarding the teacher's performance of the teaching procedure; (b) a statement reiterating the reason for the procedure; (c) identifying an error from the observation; (d) asking the teacher to explain how the error could be corrected, and if the teacher responded incorrectly, the supervisor explained how the procedure should have been implemented; (e) asking the teacher to repeat what the supervisor said; and (f)

praising the teacher's correct verbal behavior. When comparing the performance feedback protocols in Parsons and Reid (1995) and O'Reilly et al. (1992), some common elements exist:

1. Positive feedback for strategies implemented correctly.
2. Corrective feedback for strategies not implemented correctly.
3. Ensuring understanding of corrective feedback by asking questions or asking the teacher to repeat corrective feedback.

Although performance feedback has been documented as the *gold standard* in teacher training and consultation, it is often not a realistic practice for most schools. Performance feedback is time consuming, and "typical school resources often limit its feasibility" (Simonsen et al., 2013, p. 5). In typical school environments, it can be difficult for an expert or coach to set aside time to regularly conduct observations of staff performance and provide detailed feedback to staff based on the observation. One possible alternative to expert-delivered performance feedback is having staff self-deliver performance feedback. To self-deliver performance feedback, staff can be provided with a fidelity checklist outlining strategies to be implemented, reflect upon their behavior, and (a) identify strategies implemented correctly, (b) identify strategies not implemented correctly, and (c) ask their supervisor questions as needed regarding strategies not implemented. These activities involved in self-delivered performance feedback directly relate to the common elements of traditional performance feedback between Parsons and Reid (1995) and O'Reilly et al. (1992). Table 1 outlines elements of performance feedback that are common between Parsons and Reid (1995) and O'Reilly et al. (1992) and how each component can be conceptualized in relation to the self-delivery of

performance feedback.

Table 1

Common Elements of Traditional Performance Feedback and How They Can Be Conceptualized as Self-Delivered Performance Feedback

Common Elements of Traditional Performance Feedback	Self-Delivered Performance Feedback
Positive feedback for strategies implemented correctly	Identifying components implemented by reviewing a fidelity checklist
Corrective feedback for strategies not implemented correctly	Identifying components not implemented by reviewing a fidelity checklist
Asking questions to ensure understanding of corrective feedback, or asking staff to repeat corrective feedback	Staff elects to ask teacher/coach questions if they don't understand components not implemented

Note. Overlap in traditional performance feedback protocols described in Parsons and Reid (1995) and O'Reilly et al. (1992) and how those common elements can be conceptualized as self-delivered performance feedback.

When performance feedback is self-delivered, there is no need for an expert or supervisor to set aside time for observations and feedback. Rather, the classroom staff reviews a fidelity checklist, reflects upon their behavior to identify areas in which they excelled and areas for improvement, and contacts the expert or coach if they have any questions regarding how to improve performance. Inherent to the process of self-delivering performance feedback is self-monitoring, which has been greatly researched in the fields of education and applied behavior analysis.

Self-Monitoring

Self-monitoring occurs when an individual observes his/her own behavior and documents the occurrence or nonoccurrence of a specific behavior (Cooper et al., 2007).

In education, self-monitoring has been explored in regard to delivering praise statements to students (Hager, 2012; Kalis, Vannest, & Parker, 2007; Keller, Brady, & Taylor, 2005; Simonsen et al, 2013; Sutherland & Wehby, 2001, Workman, Watson, & Helton, 1982), instructional decision-making and problem-solving (Allinder & BeckBest, 1995; Allinder, Bolling, Griffin & Kilgore, 1995; Oats, & Gagnon, 2000; Browder, Liberty, Heller, & D'Huyvetters, 1986), learning trials delivered to students (Lyo, & Lee, 2013), token economies (Plavnick, Ferreri, & Maupin, 2010), behavior intervention plans (Seligson-Petscher & Bailey, 2006), and other various instructional strategies (Anderson and Freiberg, 1995; Belfiore et al., 2008; Hager, 2012; Richman, Riordan, Reiss, Pyles, & Bailey, 1988; Roskos, Boehlen, & Walker, 2000). A variety of self-monitoring strategies have been used, including review of video or audio samples (Anderson & Freiberg, 1995; Belfiore et al., 2008; Hager, 2012; Keller et al., 2005; Roskos et al., 2000; Sutherland & Wehby, 2001), the use of checklists, scripts, or questionnaires (Allinder & BeckBest, 1995; Allinder et al., 2000; Belfiore et al., 2008; Griffin & Kilgore, 1995; Hoover & Carroll, 1987; Richman et al., 1988), and direct measures of behavior (Kalis et al., 2007; Plavnick et al., 2010; Simonsen et al, 2013; Workman et al., 1982).

In a recent study, Simonsen et al. (2013) used a modified alternating treatments design to explore the effects of three different strategies of teacher self-monitoring on the number of praise statements delivered to middle school students. To self-monitor, teachers either (a) pressed the button of a hand-held golf counter to record each time they provided a praise statement (count condition), (b) recorded a tally mark on paper each time they provided a praise statement (tally condition), or (c) estimated the number of praise statements they provided and completed a self-rating scale (rate condition).

Following the alternating treatments phase, the most effective strategy for each teacher was identified, and performance feedback was initiated for teachers who continued to demonstrate low rates of praise statements. Results indicated that all types of self-monitoring produced some effect for most teachers, yet the count condition was associated with the highest rates of praise statements. Interestingly, the authors also found that "performance feedback did not result in substantial gains over self-monitoring" (Simonsen et al., 2013, p. 13). In other words, self-monitoring was sufficient in producing behavior change, and the addition of performance feedback had minimal affect above and beyond the effects of self-monitoring. These results suggest that self-monitoring can reduce the need for more expensive and time-consuming performance feedback procedures (Simonsen et al., 2013). It is also important to note that although the count condition was identified as the optimal self-monitoring strategy, the other conditions (using tally marks or a rating scale) also produced a change in teacher behavior. This is important to consider, as not all self-monitored teacher behaviors are most appropriately measured by frequency. For instance, when implementing a student's BSP, it would be difficult for a teacher to count the number of times he/she implemented each component of the BSP, when the BSP would likely include several components for preventing problem behavior, teaching socially appropriate behaviors, and responding to problem behavior. In this case, having teachers self-monitor by indicating the number or percent of BSP components implemented across the school day might be most appropriate. Having staff self-monitor by referring to a checklist or script that outlines intervention components has been identified as an effective strategy for improving treatment adherence (Allen & Blackston, 2003).

Theories of reactivity in self-monitoring. The mechanism underlying self-monitoring is reactivity, or the change in behavior as a result of observing and recording one's behavior (Lyo & Lee, 2013; Mace & West, 1986; Nelson & Hayes, 1981). Three main theories have emerged to explain the reactive effects of self-monitoring (Mace & West, 1986): the cognitive-behavioral model (Kafner, 1970; 1977), the operant recording response model (Rachlin, 1974), and the multiple-cuing stimuli model (Nelson & Hayes, 1981). In the cognitive-behavioral model, reactivity is explained through a process of self-regulation, which includes self-monitoring, self-evaluation, and self-reinforcement. Self-regulation is an active chain of events that begins when an individual observes and records their behavior (i.e., self-monitoring). Following self-monitoring, the individual compares their behavior to a performance standard (self-evaluation), and then the covertly self-administers consequences (i.e., self-reinforcement or self-punishment). These self-delivered consequences could consist of covert verbal behavior or overt administration of reinforcers/punishers. The operant recording response model (Rachlin, 1974) suggests that self-recording and self-administered consequences function as discriminative stimuli for behavior that is often under the control of delayed contingencies. Rachlin (1974) states that self-recording and self-delivered consequences are "...ways to increase the salience of the relationship between behavior and its consequences." (p. 105). He uses the example of self-monitoring by calorie counting to describe this theory and states that counting calories does no more than emphasize the relation between good eating habits and losing weight. The relation between eating well and losing weight is the contingency that governs behavior, and calorie counting is a self-monitoring behavior that serves as a discriminative stimulus for behavior (i.e., eating

well) that is under the control of delayed consequences (i.e., losing weight). Often, behaviors of interest in the self-monitoring literature can be conceptualized as under the control of delayed consequences. For example, BSP implementation behavior is likely maintained by delayed reinforcers such as student success and teacher/supervisor approval at weekly meetings, as opposed to more temporally proximal consequences such as the score on a fidelity checklist. The multiple-cuing stimuli model (Nelson & Hayes, 1981) is similar to the model described by Rachlin (1974) in that external consequences (that may be temporally distant) account for the change behavior (i.e., reactivity) as opposed to self-delivered reinforcement/punishment. Nelson and Hayes (1981) extend Rachlin (1974) by stating that reactivity can be a result of the entire self-monitoring process itself. Stimuli and events related to the process of self-monitoring such as training in self-monitoring, self-monitoring devices, and the self-recording response itself serve as discriminative stimuli and enhance the saliency of the relationship between the behavior and its maintaining consequence (Nelson & Hayes, 1981).

Data-based Decision Making

Another important factor that contributes to the effective implementation of function-based interventions and supports is collecting data and reviewing those data for the purpose of decision-making. Data literacy, or "the ability to understand and use data effectively to inform decisions" (Mandinach & Gummer, 2013, p. 30) involves a variety of skills (e.g., collecting, organizing, analyzing, and summarizing data) that enable educators to translate data into meaningful information.

Data linked to student outcomes. Data-based decision making is particularly important for teachers of students with severe intellectual and developmental disabilities

(Jimenez, Mims, & Browder, 2012) who will likely be implementing Tier III interventions (i.e., function-based interventions and supports). Throughout BSP implementation, data are collected on student behavior (i.e., problem behavior and socially appropriate behavior) to determine if strategies outlined in the BSP produce a change in student behavior. Data are also collected on teacher behavior (i.e., treatment fidelity) to determine the extent to which teachers implement the BSP with fidelity. Both types of data are essential and too often neglected (Fixsen, Blase, Metz, & Van Dyke, 2013). To illustrate the importance of collecting both student outcome and treatment fidelity data, consider if the school team reviews student outcome data and determines there is no change in student behavior since implementation of the BSP. Without data on treatment fidelity, the team cannot determine whether the BSP was ineffective, or if no change in student behavior is a result of inaccurate implementation of the BSP. If treatment fidelity data are low, this provides a prompt for school teams to provide additional teacher training and support to improve fidelity.

Team-based review of data. It has been documented that effective school teams use data to document progress and outcomes, guide decisions regarding plan improvements, and inform stakeholders (Boudett, City, & Murnane, 2006; Burke, 2010; Deno, 2005; Hill 2010; Newton, Algozzine, Algozzine, Horner, & Todd, 2011; Newton, Horner, Algozzine, Todd, & Algozzine, 2009; Pidgeon & Gregory, 2004; Renfro & Grieshaber, 2009). In addition, the collection and use of data for decision-making has been identified as a critical predictor of sustained implementation of SWPBIS (Coffey & Horner, 2012; McIntosh et al., 2013). For schools that implement SWPBIS, the PBIS team is responsible for making data-based decisions to prevent, reduce, or eliminate

student academic and behavior problems (Anderson & Spauling, 2007; Benazzi, Horner, & Good, 2006; Newton et al., 2011; Scott & Martinek, 2006). The review of data for effective team-based problem-solving has been a consistent focus in education (Newton, Horner, Todd, Algozzine & Algozzine, 2012). And although there is increased awareness that educators must use empirical evidence (i.e., data on treatment fidelity and student outcomes) to inform decisions and monitor student performance rather than anecdotes, intuition, or personal preference (Boudett, City, & Murnane, 2005; Mandinach & Gummer, 2013; Newton, Horner, Algozzine, Todd, & Algozzine, 2012), data-based decision making in schools continues to be a challenge (Dunn, Airola, Lo, & Garrison, 2013; Schildkamp, Ehren, & Lai, 2012; Telzrow, McNamara, & Hollinger, 2000).

It is possible that part of the reason why schools continue to experience difficulty in collecting data and using those data for decision making is the lack of an efficient data collection and decision-making system for staff to use. Recent advances in computer technology and programs could provide a fast and efficient means for organizing and delivering data (Wayman, 2005), thereby making the collection and use of fidelity and student behavior data more likely.

The Individualized Student Information System (ISIS-SWIS)

ISIS-SWIS is an application within the School-Wide Information System (SWIS) Suite. The SWIS Suite is part of PBISApps, a series of web-based educational tools designed to support the implementation of SWPBIS. PBISApps have been used in more than 25,000 schools worldwide (PBIS Applications Overview, 2013). The SWIS Suite is comprised of three web-based applications: SWIS, Check-In Check-Out (CICO-SWIS), and ISIS-SWIS. SWIS is designed to help school personnel monitor the progress of

school-wide and individual student interventions. CICO-SWIS is used by schools to monitor targeted interventions for students who require additional support beyond Tier I. ISIS-SWIS is designed to coordinate and monitor individualized student support for students requiring Tier III interventions (PBIS Applications Training Team, 2013a). ISIS-SWIS was recently launched in 2013 and is currently being used in approximately 70 schools. Figure 1 outlines the applications in the SWIS Suite and how they relate to each tier within the SWPBIS framework.

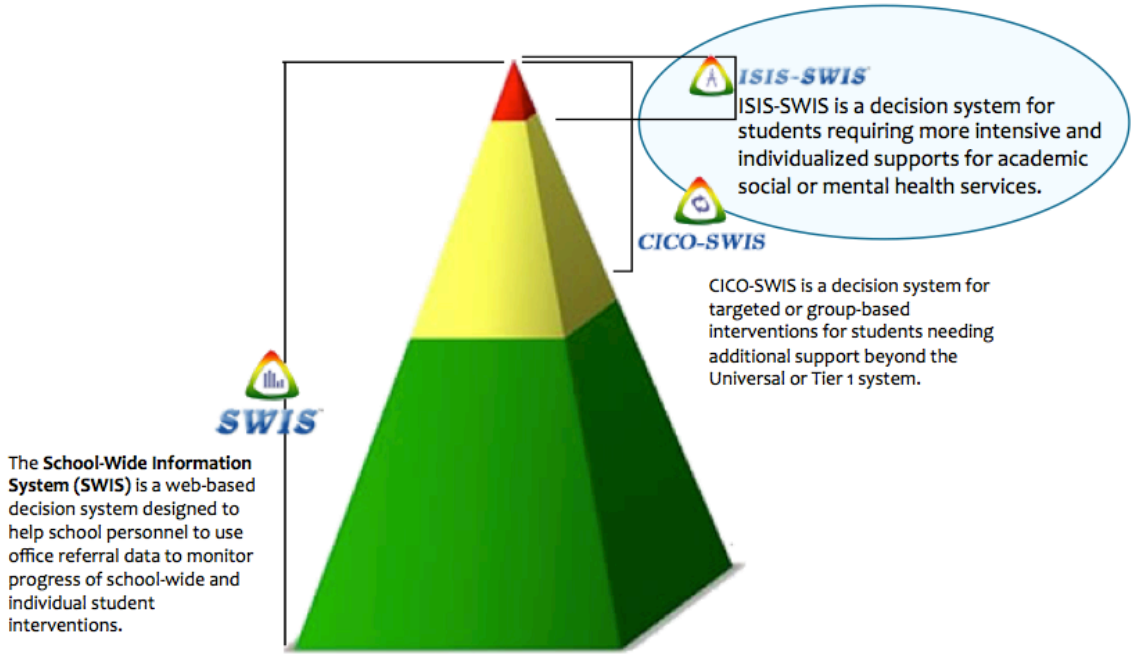

Figure 1. Applications in the SWIS Suite as they relate to the SWPBIS framework (PBIS Applications Training Team, 2013a).

ISIS-SWIS is designed to help school teams become "better organized and better informed, and thereby, better able to make timely decisions that benefit students" (PBIS Applications Training Team, 2013b, p. 6). ISIS-SWIS enables school teams to efficiently (a) upload and store plan documents, (b) collect and save treatment fidelity data, (c) collect and save student outcome data, and (d) summarize and analyze fidelity and

student outcome data for problem solving and decision making (May et al., 2013). Each of these features is described below.

ISIS-SWIS users can upload documents specific to each student's individualized plan and save them in ISIS-SWIS. This could include the FBA, BSP, IEP, data collection sheets, team meeting notes, etc. To define fidelity measures, users (a) type a detailed description of the measure, (b) select what metric will be used to measure fidelity (e.g., rating scale, percent, frequency), (c) define a data collection schedule including days (e.g., Monday) and times (e.g., second period), and (d) identify teacher fidelity goals (e.g., a rating of 4 or higher). To define student outcome measures, users (a) type a detailed description of the measure, (b) select what dimension of behavior will be measured (e.g., frequency, duration, rate), (c) define a data collection schedule that includes days and times, and (d) identify student performance goals (e.g., less than three). In addition, users can select a start date to indicate when fidelity and outcome data collection should begin. Once data are entered, ISIS-SWIS users can view staff fidelity and student outcome data on automatically generated graphs. Graphs can be generated for whichever measures the user chooses. This includes selecting a primary and comparative measure so two data paths can be viewed on the same graph. For example, the user could select "frequency of problem behavior" as the primary measure and "staff fidelity" as the comparative measure. This would allow the user to examine the graph to determine the extent to which student problem behavior varies in relation to staff fidelity. Table 2 outlines the core features of ISIS-SWIS.

Table 2

Core Features of ISIS-SWIS

Feature	Description
Upload documents	Upload documents related to a student's program (e.g., IEP, BSP, data sheets).
Define student outcome measures	Enter (a) a detailed description of the measure, (b) the dimension of behavior to be measured, (c) the data collection schedule, and (d) student performance goals.
Define staff fidelity measures	Enter (a) a detailed description of the measure, (b) the metric used to measure treatment fidelity, (c) the data collection schedule, and (d) teacher fidelity goals.
Enter outcome and fidelity data	Enter current or ad hoc data for student outcome and staff fidelity measures.
View graphs	Select dates and primary and comparative measures to view on automatically generated graphs.

With these features, ISIS-SWIS provides schools with the means to efficiently enter, store, and summarize data for decision making and team-based planning for students with more intensive educational needs (PBIS Applications Training Team, 2013a). The features of ISIS-SWIS provide a conspicuous system for school teams and administrators to coordinate and monitor BSP implementation by (a) making staff expectations explicit, (b) posting staff fidelity data, and (c) posting student outcome data. Expectations and data are posted on ISIS-SWIS and available for team members to view any time anywhere. This way, team members and administrators can readily monitor plan implementation and the plan's effect on student behavior.

Study Purpose, Research Questions, and Potential Contributions

This study assessed the extent to which classroom staff use of ISIS-SWIS affected the degree to which they implemented student BSPs with fidelity in their classroom. The study also analyzed the effects of ISIS-SWIS use on student problem behavior and academic engagement, the relationship between observed treatment fidelity and student problem behavior, and the degree to which self-monitoring of treatment fidelity (via ISIS-SWIS) aligned with observed fidelity.

Specifically, the study addressed the following primary (experimental) research questions:

1. Is there a functional relation between ISIS-SWIS use (self-monitoring treatment fidelity, collecting student outcome data, and graphing and reviewing these data) and increased level of BSP treatment fidelity?
2. Is there is a functional relation between ISIS-SWIS use (self-monitoring treatment fidelity, collecting student outcome data, and graphing and reviewing these data) and both reduction in the level of student problem behavior and increased level of student academic engagement?

In addition, the proposed research addressed the following secondary (descriptive) research questions:

1. To what extent does self-monitoring of treatment fidelity (via ISIS-SWIS) align with observed treatment fidelity?
2. Do teachers, staff and administrators rate ISIS-SWIS as an efficient and effective tool that helps them coordinate and monitor support for students who require Tier III supports?

CHAPTER II

METHOD

Participants and Settings

Three dyads nested in two local elementary schools participated in the study. Dyads consisted of a student and an educational assistant (EA). All dyads were in self-contained special education classrooms. Dyads were considered for inclusion in the study if (a) the target student was currently receiving specialized supports to address problem behavior through a BSP or classroom-wide behavior management plan, (b) classroom staff were implementing the BSP or classroom management plan with low treatment fidelity, and (c) student problem behavior remained high and/or academic engagement remained low. The district behavior specialist recommended potential dyads, and the researcher conducted preliminary observations to ensure the above inclusion criteria were met. During these observations, the researcher collected data on occurrence of problem behavior, antecedents that preceded problem behavior, and consequences that followed problem behavior. See Appendix A for the data sheet used. The researcher also collected data on the number of BSP or classroom management plan components implemented correctly. To do this, the researcher reviewed student BSPs (or the classroom behavior management plan if the student did not have a BSP) and created a checklist outlining components of the plan. Using this checklist, the researcher observed the EA and documented on the data sheet if each component was implemented using a binary scoring system (yes = implemented; no = not implemented). See Appendix B for an example of the data sheet used. Observations were 20 min in duration and occurred on two different days, in two different problematic classroom routines as identified by the student's

teacher. There were six dyads initially included in the study. Various issues led to attrition of three of the dyads. For one dyad, the student's parent withdrew consent after the researcher worked with the classroom teacher to conduct a FBA and develop a BSP. Because student behavior improved following implementation of the BSP, the parent indicated that she no longer felt the student would benefit from being included in the study. For another dyad, the student suddenly moved out of the school district. For the sixth dyad, the classroom teacher became ill and missed several weeks of school. The student and EA in the three remaining dyads are described below.

Dyad 1 consisted of a fourth grade student and a classroom EA. The student was male and identified with specific learning disability (SLD). The student's problem behavior consisted of disruption, task refusal, property destruction, and off-topic talk/stalling. A BSP was in place for one to two years prior to the study. The EA in Dyad 1 had been working in the same classroom for 16 years. She had previously received district-wide training in positive behavior support as well as in-classroom feedback from the classroom teacher. The classroom teacher held a master's degree in education and was a first year special education teacher with four years of experience as a fourth grade general education teacher. She had previously received district-wide training in positive behavior support in addition to her university training.

Dyad 2 consisted of a kindergarten student who attended school in the morning (8:30 a.m. to 11:30 a.m.) and an EA. The student was male and identified with a communication disorder. The student's problem behavior consisted of protest, aggression, property destruction, and disruption. A BSP was in place for three months prior to the study. The EA in Dyad 2 had seven years of experience working with students with

special needs and had attended a district-wide workshop in positive behavior support during her first year of employment. The classroom teacher held a master's degree in education. She had 8 years of experience as a special education teacher and five years of experience as an EA in a special education classroom. The teacher reported taking two courses in applied behavior analysis during her university coursework. She also attended multiple trainings on positive behavior support through the school district.

Dyad 3 consisted of a first grade student and an EA. The student was male and identified with other health impairment (OHI). The student was on a modified schedule, where he attended school in the morning only (i.e., 8:00 a.m. to 11:45 a.m.). The student's problem behavior consisted of elopement, protest, and off-topic talk. A class-wide behavior management system was in place for several months prior to the study. The EA had 22 years of experience in working with students with special needs. She had received previous district-wide training in positive behavior supports. The classroom teacher held a master's degree in early childhood special education and had six years of experience teaching special education. She had received previous training in positive behavior support through university coursework and district-wide training. Table 3 presents the demographic information for each classroom teacher, and the EA and student who participated in the study.

Table 3

Demographic Information for Teachers, Educational Assistants, and Students

	Teacher	Educational Assistant	Student
Dyad 1	Graduate degree 1 year special education teaching experience District-wide training and university coursework in PBIS	16 years of experience District-wide and in-class training in PBIS	Fourth grade Specific learning disability BSP in place 1 week prior to the study
Dyad 2	Graduate degree 8 years teaching experience District-wide training and university coursework in PBIS	7 years of experience District-wide training in PBIS during first year of employment	Kindergarten Communication disorder BSP in place 3 months prior to the study
Dyad 3	Graduate degree 6 years teaching experience District-wide training in PBIS	22 years of experience District-wide training in PBIS	First grade Other health impaired (OHI) Classroom plan in place 2 months prior to the study

Dependent Measures

Direct Observation Data

Direct observations occurred three to five times per week and lasted 20 min in duration. For Dyad 1, observations took place during small group reading from 9:00 a.m. to 9:20 a.m. The small group consisted of the participating student, a peer, and the EA. During this group, students completed independent work from their workbooks or participated in remedial direct instruction reading lessons. For Dyad 2, observations took

place from 9:30 a.m. to 9:50 a.m. During this time, the student worked one-on-one with the EA on Language for Learning ® lessons. For Dyad 3, observations took place during one-on-one instruction with the EA from 8:15 a.m. to 8:35 a.m. The content area addressed during this time varied depending on the student's schedule for that day.

Observers received training in data collection procedures by meeting to review the protocol with the researcher and practicing data collection with the researcher in the classroom. Training continued until inter-observer agreement (IOA; agreement/ agreement + disagreement multiplied by 100%) with the researcher was 90% or greater across two consecutive 20 min observation sessions. A second trained observer collected IOA on a minimum of 20% of sessions per phase per dyad. Cohen's kappa was used to calculate IOA. This statistic was selected because it accounts for the conditional probability that the two observers agree or disagree by chance.

Direct observation of treatment fidelity. To determine the extent to which teachers implemented student BSPs with fidelity, trained observers collected direct observation data on the number of BSP components implemented correctly. During observation periods, observers used a data sheet outlining components specific to each student's BSP. Observers used a binary scoring system to indicate on the data sheet whether the EA implemented each component of the student's BSP correctly (i.e., yes = implemented; no = not implemented). From these data, the percent of BSP components implemented correctly was derived. See Appendices C, D, and E for the treatment fidelity data sheets for Dyads 1, 2, and 3 respectively.

Direct observation of student behavior. Trained observers collected direct observation data on the occurrence of student problem behavior and academic

engagement using 10 s partial interval recording. For Dyad 1, the student's problem behavior consisted of disruption, task refusal, property destruction, and off-topic talk/stalling. Disruption was defined as tapping items on desk (e.g., pencil, book), touching peers with hands or other objects, or talking or making noises with mouth at a time when the expectation was to be quiet. Task refusal was defined as not initiating a teacher request within 5 s. Property destruction was defined as tearing instructional materials or crumpling paper with hands. Off-topic talk/stalling was defined as asking questions or making comments that do not relate to the current task, or asking unnecessary/simple questions that relate to the task but do not result in information that is necessary to complete the task.

For Dyad 2, the student's problem behavior consisted of protest, aggression, property destruction, and disruption. Protest was defined as saying "no," "I'm done," or other words to indicate he would not comply with a teacher's request, or not initiating a teacher request within 5 s. Aggression was defined as grabbing any part of a staff member's body with his hand(s) and squeezing their body by clenching his hand(s). Property destruction was defined as throwing items, tearing instructional materials, or pushing materials off of his desk. Disruption was defined as making noises with mouth, yelling, or singing at a time when the expectation was to be quiet or respond to an instructional request.

For Dyad 3, the student's problem behavior consisted of elopement, protest, and off-topic talk. Elopement consisted of leaving the designated area without staff permission. Protest was defined as yelling (volume of his voice was above that of a conversational level), saying "no" or other words to indicate he would not comply with

teacher request, or not initiating a teacher request within 5 s. Off-topic talk consisted of asking questions or making comments that do not relate to the current task.

Data on academic engagement were also collected for all students. Academic engagement was defined as the student's shoulders and eyes being directed toward the activity the EA is leading or the task the EA assigned for a minimum of five consecutive seconds. This includes shoulders and eyes being directed toward the EA when the EA was giving instructions or talking to the student. If the EA instructed the student to orally respond, raise their hand, write, etc., the student engaged in the requested behavior within 5 s. See Appendices F, G, and H for the 10 s partial interval data sheets for Dyads 1, 2, and 3 respectively.

ISIS-SWIS Data

Self-monitoring treatment fidelity. To identify how EAs rated their performance in implementing student BSPs, EAs logged into ISIS-SWIS and rated the degree to which they implemented their student's BSP for that day. A 0-5 rating scale was used (0 = 0-10% of components implemented, 1 = 11-30% of components implemented, 2 = 31-50% of components implemented, 3 = 51-70% of components implemented, 4 = 71-90% of components implemented, 5 = 91-100% of components implemented). EAs rated their performance and entered these data daily.

Student outcome data. EAs used ISIS-SWIS to enter data on student behavior as appropriate for the student's BSP. During the ISIS-SWIS phase of the study, the researcher worked with the classroom teacher to identify an appropriate measure for student behavior given specifics of the student's BSP and the topography, frequency, duration, and intensity of problem behavior.

For Dyad 1, the teacher chose to use ISIS-SWIS to track the percentage of points the student earned per day. A classroom-wide token economy system was in place prior to data collection where students had the opportunity to earn a specified number points for each activity/routine throughout the day for following the school rules (be safe, be respectful, follow directions, do your personal best). For each school rule during each classroom activity/routine, classroom staff used a rating scale to award students their points (0 points = needs work; 1 point = okay; 2 points = excellent). Because two points were possible for each of the four school rules, there were a total of eight points possible per activity/routine. There were eight different activities/routines outlined on the point sheet, resulting in 64 possible points per day. Each day following student dismissal, the EA logged in to ISIS-SWIS and entered the total number of points available that day (which was 64, unless the school day was shortened) and the total number of points the student earned that day. From these data, ISIS-SWIS derived a percentage of points earned.

For Dyad 2, the teacher chose to measure the frequency of problem behavior per day (i.e., number of times the student engaged in protest, aggression, property destruction, and disruption). Prior to the study, classroom staff were already using a data sheet to track the frequency of problem behavior during each activity/routine throughout the school day. Staff used this data sheet to document each occurrence of problem behavior using tally marks. Each day following student dismissal, the EA logged in to ISIS-SWIS and entered the total number of occurrences of problem behavior (including all topographies) that were observed that day.

For Dyad 3, the teacher chose to measure the number of teacher-directed tasks the student completed per day. The student's individualized schedule was a 2-column table that listed six to eight "teacher choice" activities in the left column and six to eight corresponding "student choice" activities in the right column. "Teacher choice" activities included tasks such as completing a workbook page, participating in a mainstream class or activity (e.g., music class or library), completing a reading lesson, etc. For each "teacher choice" activity the student completed, he was given access to the corresponding "student choice" activity listed on his schedule. Each day following student dismissal, the EA counted the number of "teacher choice" tasks the student completed and entered that number into ISIS-SWIS.

ISIS-SWIS data entry use. To ensure EAs were entering data into ISIS-SWIS on a daily basis, the researcher kept a record of ISIS-SWIS data entry. Each day after school or in the evening, the researcher logged in to ISIS-SWIS, opened the student's dashboard, and viewed the last entry date for student outcome and fidelity data. The researcher kept an ongoing record for each dyad. See Appendix I for the data sheet used.

Quality of FBA and BSP

Technical adequacy of FBA. To ensure FBAs were conducted with technical adequacy, the researcher used the *FBA Procedural Adequacy Checklist* (Loman & Horner, 2013). This checklist outlines five main steps in the FBA process. These steps include (1) a structured interview with classroom staff who work with the student during routines where problem behavior is likely (e.g., The Functional Assessment Checklist for Teachers and Staff [FACTS; March et al., 2000]), (2) operationally defining problem behavior, (3) prioritizing a routine for direct observation, (4) identifying an antecedent

event exerting stimulus control over problem behavior, and (5) identifying one primary maintaining function of problem behavior. The researcher evaluated each FBA against these five steps and indicated if the step was completed (yes = step completed; no = step not completed/ no evidence in student records to indicate step was completed). The researcher assessed each FBA prior to baseline data collection. See Appendix J for the *FBA Procedural Adequacy Checklist* (Loman & Horner, 2013).

Technical adequacy of BSP. The researcher used the *BSP Critical Features Checklist* (Strickland-Cohen & Horner, 2014) to ensure BSPs were technical adequate. This checklist was adapted from a scoring guide (Benazzi, Nakayama, Sterling, Kidd, & Albin, 2003) based on the *Intensive Individualized Interventions Critical Features Checklist* (Lewis-Palmer, Todd, Horner, Sugai, & Sampson, 2004). The *BSP Critical Features Checklist* (Strickland-Cohen & Horner, 2014) outlines 19 critical elements of a BSP. These 19 elements address specifics with regard to (a) defining problem behavior, (b) identifying the function of the problem behavior (as identified in the FBA), (c) preventative strategies to decrease the likelihood of problem behavior, (c) instructional strategies to teach alternative and desired behaviors, (d) strategies to minimize reinforcement of problem behavior, (e) strategies to maximize reinforcement for alternative and desired behaviors, and (f) plans for implementation and evaluation. Additionally, the checklist asks if prevention, instructional, and consequence strategies are consistent with the function of the problem behavior. The checklist uses a binary scoring system (yes = component present; no = component not present). For Dyad 1, the researcher worked with the school team to develop a BSP that met these criteria prior to baseline data collection. For Dyad 2, the researcher assessed the student's current BSP

prior to baseline and found that improvements could be made. The researcher then worked with the school team to revise the BSP to meet criteria for technical adequacy. For Dyad 3, the researcher assessed the student's current BSP using this checklist prior to baseline and found that it met criteria. See Appendix K for the *BSP Critical Features Checklist* (Strickland-Cohen & Horner, 2014).

Contextual fit of BSP. The *Assessment of Contextual Fit in Schools* rating scale (Horner, Salentine, & Albin, 2003) was used to ensure student BSPs were consistent with the values, resources, and skills of the student and those who will implement the plan. This 16-item rating scale is organized into eight domains: (a) knowledge of the plan elements, (b) skills needed to implement the plan, (c) values reflected in the plan, (d) resources available to the implement the plan, (e) administrative support, (f) effectiveness of the plan, (g) whether the plan is in the best interest of the student, and (h) if the plan can be efficiently implemented. Items are rated on a 6-point Likert scale (1= strongly disagree to 6= strongly agree). For Dyad 1, the researcher worked with the school team to develop a BSP that met these criteria prior to baseline data collection. For Dyad 2, the researcher worked with the school team to revise the current BSP to meet these criteria. For Dyad 3, the EA completed this rating scale and found that the BSP met criteria. See Appendix L for the *Assessment of Contextual Fit in Schools* rating scale (Horner, et al., 2003).

Social Validity

After data collection was complete, teachers, EAs, and the district behavior specialist completed a questionnaire to determine the acceptability of the study procedures and outcomes. This 12-item questionnaire asks questions regarding the

importance of collecting and reviewing data on treatment fidelity and student behavior, data-based decision making, and the usability and usefulness of ISIS-SWIS. Participants rated each item using a Likert Scale (1 = strongly agree to 5 = strongly disagree). Scores could range from 12 to 60. See Appendix M for the social validity questionnaire.

Design and Procedures

A multiple baseline design across student-EA dyads was used to determine if a functional relation existed between EA use of ISIS-SWIS and observed treatment fidelity of student BSPs, and if a functional relation existed between EA use of ISIS-SWIS and student behavior. The design also allowed for an analysis of the extent to which EA self-monitoring of fidelity (via ISIS-SWIS) aligned with observed fidelity of implementation.

Review of Student Records

Prior to data collection, the researcher reviewed student records to ensure the student's current plan included necessary elements that would be sufficient in improving student behavior. Each FBA was evaluated using the *FBA Procedural Adequacy Checklist* (Loman & Horner, 2013; Appendix J). If the FBA met criteria, BSPs were evaluated for technical adequacy using the *Critical Elements of the BSP* checklist (Strickland-Cohen & Horner, 2014; Appendix K) and for contextual fit using the *Assessment of Contextual Fit in Schools* rating scale (Horner et al., 2003; Appendix L). If the FBA did not meet criteria for technical adequacy, the researcher conducted a FBA and worked with the school team to develop a BSP that met criteria for technical adequacy and contextual fit.

For Dyad 1, the school team was unable to locate the student's FBA, and the strategies outlined in the student's BSP were specific to a previous placement and not

relevant to his current classroom. The researcher conducted a FBA that met criteria as outlined by Loman and Horner (2013) and shared results with the school team. Results indicated that the student's problem behavior (disruption, task refusal, property destruction, and off-topic talk/stalling) was maintained primarily by escape from demands. See Figure 2 for the competing behavior pathway for the student in Dyad 1.

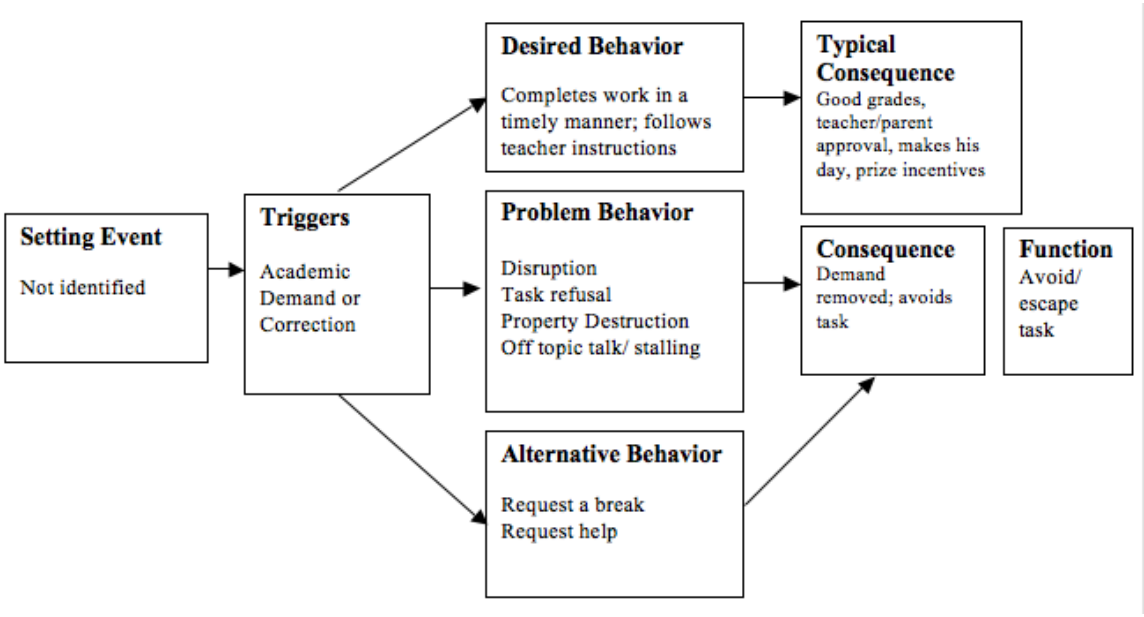

Figure 2. Competing behavior pathway for the student in Dyad 1 based on results from the FBA conducted by the researcher.

The researcher then worked with the school team to write a BSP for the student in Dyad 1. The researcher, teacher, and district Intensive Positive Behavior Support (IPBIS) Specialist met in person, talked on the phone, and emailed until a BSP was developed that met requirements for technical adequacy (see Strickland-Cohen & Horner, 2014) and contextual fit (see Horner et al., 2003). Strategies in the BSP included (a) providing a 5 min break for every 30 min of work, (b) visual cues on his desk representing break and

help, (c) precorrection and modeling how to request a break or help before academic tasks, (d) a token economy with a break as the backup reinforcer, and (e) redirecting the student back to work or prompting him to request break/help when he engaged in problem behavior. The BSP was in place for one week prior to baseline data collection. See Appendix C for further descriptions of the strategies outlined in the BSP for the student in Dyad 1.

For Dyad 2, the school district hired an outside consultant to conduct a FBA and write a BSP for the target student approximately three months prior to baseline. The researcher reviewed the FBA for technical adequacy (see Loman & Horner, 2013) and found that improvements could be made. The FBA received a score of 4/5 (80%). The FBA met criteria for the first four steps outlined by Loman and Horner (2013) in that the FBA included (1) staff interviews, (2) an operational definition the problem behavior, (3) direct observations, and (4) an antecedent event exerting control over the problem behavior. The fifth step, identifying one primary function maintaining problem behavior, did not meet criteria. Rather, the FBA concluded that problem behavior was maintained by a variety of functions: access to adult attention, access to tangibles and preferred activities, access to sensory stimulation, and escape from task demands. To identify the primary function of the student's problem behavior (protest, aggression, property destruction, and disruption), the researcher conducted a FBA that met requirements for technical adequacy (see Loman & Horner, 2013). Results indicated that problem behavior was maintained by escape from demands, primarily Language for Learning® lessons. See Figure 3 for the competing behavior pathway for the student in Dyad 2.

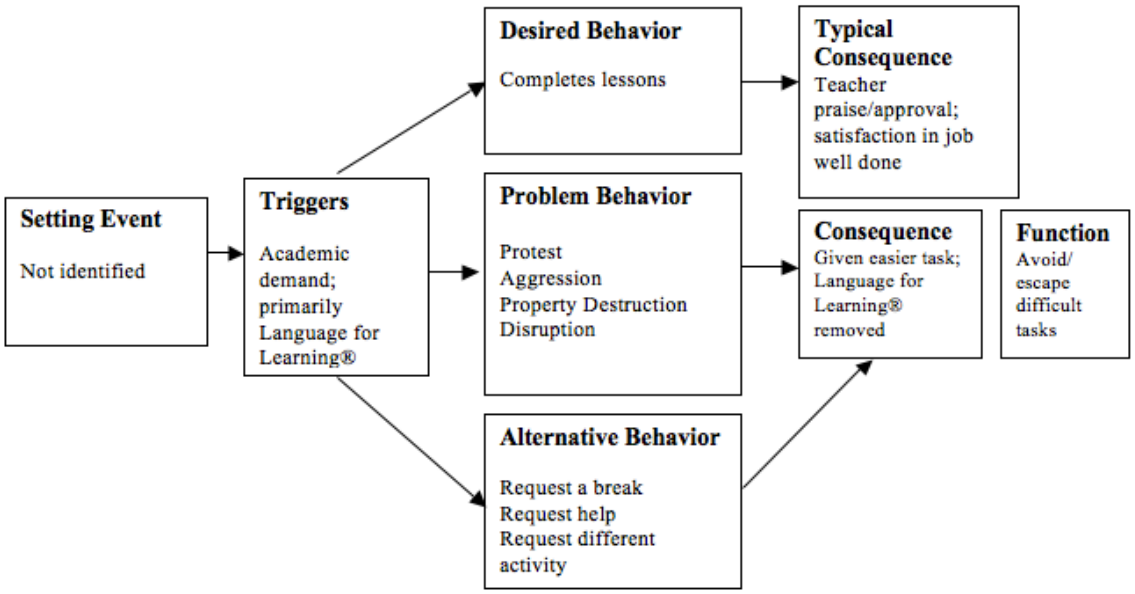

Figure 3. Competing behavior pathway for the student in Dyad 2 based on results from the FBA conducted by the researcher.

The researcher then met with the classroom teacher to revise the BSP for the student in Dyad 2 to meet criteria for technical adequacy (see Strickland-Cohen & Horner, 2014) and contextual fit (see Horner et al., 2003). Strategies outlined in the BSP included (a) interspersing easy (mastered) tasks with difficult tasks (i.e., Language for Learning ® lessons), (b) setting a timer to indicate how long work sessions will last, (c) providing a more dense schedule of reinforcement during difficult tasks, (d) embedding choice throughout the work session, (e) precorrection and modeling how to request break/help/a different activity prior to difficult tasks, (f) a token economy with break/bouncing on ball as backup reinforcer, and (g) prompting the student to request break/help/different activity when he engages in problem behavior. See Appendix D for a further description of strategies included in the BSP for the student in Dyad 2.

For Dyad 3, the student did not have a FBA or individualized BSP, but was in a highly structured classroom where a classroom BSP was in place for all students. This

BSP included strategies such as token economy systems, precorrection, high rates of praise statements, and individualized schedules. The student was also on a modified day and attended school from 8:00 a.m. to 11:30 a.m. The classroom teacher and district IPBIS specialist indicated that they felt a FBA was not necessary, as the classroom BSP would be sufficient in improving student behavior if implemented with fidelity. To verify this possibility, the researcher conducted a FBA (see Loman & Horner, 2013) to determine the function of the student's problem behavior and reviewed the classroom BSP to determine the extent to which strategies outlined in the classroom BSP addressed the function of problem behavior. The FBA indicated problem behavior (elopement, protest, and off-topic talk) was maintained primarily by escape from demands. See Figure 4 for the competing behavior pathway for the student in Dyad 3.

The classroom BSP already in place for the student in Dyad 3 included several strategies to address the function of problem behavior including (a) frequent breaks, (b) interspersing breaks with task demands, (c) a token economy system with a break or preferred items/activities as the backup reinforcer, and (d) precorrection on how to request a break before transitioning academic demands. Given the congruence between these strategies and the identified function of problem behavior, the classroom BSP served as the basis upon which treatment fidelity was measured. See Appendix E for a description of strategies included in the BSP for the student in Dyad 3.

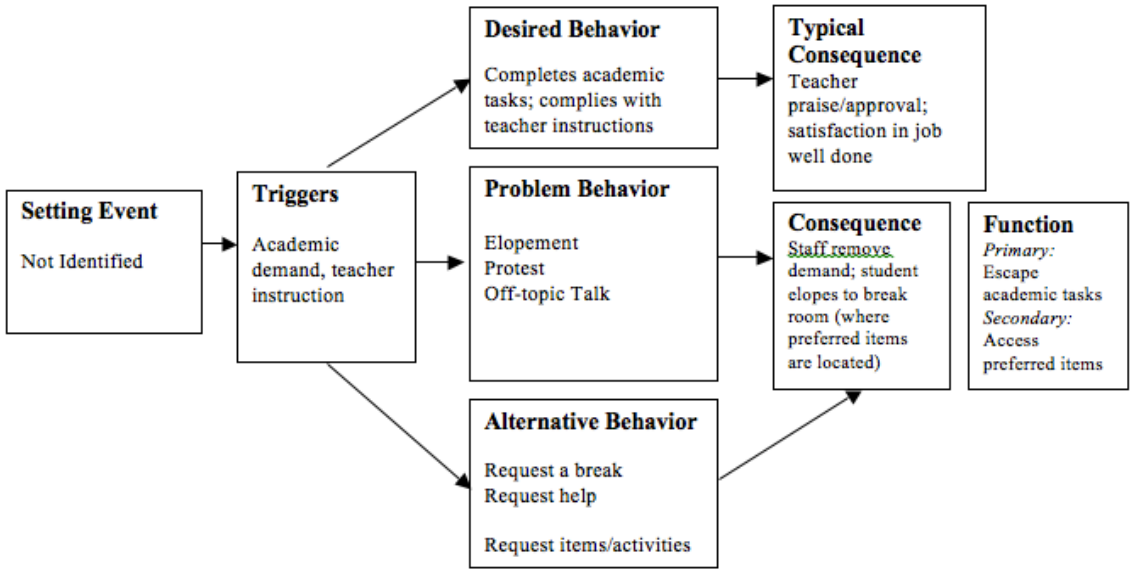

Figure 4. Competing behavior pathway for the student in Dyad 3 based on results from the FBA conducted by the researcher.

Baseline

During baseline, EAs continued implementing the student's BSP as usual. No feedback was provided regarding plan implementation, student progress, etc. The only change during baseline was that observers were present in the classroom to collect data on EA treatment fidelity and student problem behavior and academic engagement.

ISIS-SWIS

The researcher acted as an ISIS-SWIS Facilitator (see PBIS Applications Training Team, 2013a) by training teachers how to use the features of ISIS-SWIS and providing follow-up support. Teachers were trained individually. The training lasted approximately 2 hours and consisted of didactic instruction, modeling, practice, and feedback. The researcher used the ISIS-SWIS training materials developed by the University of Oregon PBIS Applications Training Team (see PBIS Applications Training Team, 2013b) and assisted teachers in setting up data collection measures for EA fidelity and student

outcomes. See Appendix N for an outline of the topics covered during the training. At the end of the training, the student file was setup in ISIS-SWIS and ready for use.

One to four days following ISIS-SWIS training with the classroom teacher, the researcher met with the EA to train her how to self-assess fidelity and enter fidelity and student outcome data in ISIS-SWIS. To assist EAs in self-assessing fidelity, EAs were given a fidelity checklist that outlined components of the student's BSP. This checklist also included the rating scale to be used when self-assessing fidelity (0= 0-10% of components implemented, 1= 11-30% of components implemented, 2= 31-50% of components implemented, 3= 51-70% of components implemented, 4= 71-90% of components implemented, 5= 91-100% of components implemented). See Appendices O, P, and Q for the fidelity checklists given to the EAs in Dyads 1, 2, and 3 respectively. For student outcome measures, the researcher described the measure and answered any questions. The researcher used verbal instruction, modeling, practice, and feedback to train the EA on how to use ISIS-SWIS to enter fidelity and student outcome data. The training lasted approximately 45 min. The day following training, the researcher stopped by the classroom to check-in, answer any questions, and remind the EA to enter fidelity and student behavior daily.

Three to four days following this check-in and once a week thereafter, the researcher meet with the teacher and EA to provide feedback regarding ISIS-SWIS use and to review treatment fidelity and student outcome data. Feedback for ISIS-SWIS included (1) praise for using components of ISIS-SWIS regularly and accurately, (2) identifying components of ISIS-SWIS teachers are not using, (3) modeling, practice, and feedback regarding how to use neglected components, and (4) discussing and agreeing

upon components the teacher will begin to use. To review treatment fidelity and student outcome data, the researcher asked the teacher or EA to generate graphs in ISIS-SWIS, refer to the graphs, and indicate (1) if the plan is being implemented with fidelity, (2) if the plan is effective in minimizing problem behavior, and (3) if any changes need to be made. The researcher followed a fidelity checklist outlining the above components (see Appendix R). A second trained observer was present during 33% of meetings to collect IOA data on procedural fidelity (agreements/ agreements + disagreements, multiplied by 100%).

Interobserver Agreement

A second trained observer collected IOA data on direct observation measures (treatment fidelity, student problem behavior, and academic engagement) for a minimum of 20% of sessions per phase per dyad. Cohen's kappa was used to calculate IOA. This statistic was selected because it accounts for the conditional probability that the two observers agree or disagree by chance. For each IOA session, Cohen's kappa was calculated separately for each dependent variable per dyad. From these data, an average kappa for each dyad and an average kappa for each dependent variable were calculated. To obtain average kappa per dyad, kappa values for all dependent variables (for that dyad) were summed and divided by the total number of IOA sessions for that dyad. To obtain an average kappa per dependent variable, kappa values for each dependent variable (across all dyads) were summed and divided by the total number of IOA sessions. Table 4 displays the average kappa for each dyad and dependent variable. For Dyad 1, average Cohen's kappa was 0.77 (K = 0.77), ranging from 0.67 to 0.95. For Dyad 2, the average Cohen's kappa was 0.90 (K = 0.90), ranging from 0.78 to 0.98. For Dyad 3, the

average Cohen's kappa was 0.86 (K = 0.86), ranging from 0.85 to 0.98. In regard to the dependent variables, Cohen's kappa for treatment fidelity was 0.81 (K =0.81), ranging from 0.67 to 0.98. For student problem behavior, average Cohen's kappa was 0.91 (K = 0.91), ranging from 0.85 to 0.95. For student academic engagement, average Cohen's kappa was 0.86 (K = 0.86), ranging from 0.77 to 0.90.

Table 4

Cohen's kappa for Each Dyad and Dependent Variable

	Treatment Fidelity	Problem Behavior	Academic Engagement	Average
Dyad 1	0.67	0.95	0.68	0.77
Dyad 2	0.78	0.94	0.98	0.90
Dyad 3	0.98	0.85	0.90	0.86
Average	0.81	0.91	0.85	

A second trained observer was present for 33% of the weekly meetings to collect IOA on procedural fidelity (agreement/ agreement plus disagreements multiplied by 100%). The researcher and IOA observer used a procedural fidelity checklist (Appendix R) to indicate if the researcher addressed each meeting item. There were a total of six meetings, two of which IOA data were collected. IOA was 100% for both meetings.

CHAPTER III

RESULTS

Direct Observation Data

Direct observation data were collected on EA treatment fidelity, student problem behavior, and student academic engagement. Figure 5 displays the percentage of BSP components implemented (i.e., treatment fidelity) and the percentage of 10 s intervals with problem behavior and academic engagement for all three dyads across baseline and ISIS-SWIS conditions. Fidelity data are plotted on the primary y-axis, and problem behavior and academic engagement are plotted on the secondary y-axis. The dashed lines on the x-axis denote spring break.

Treatment Fidelity

During Baseline, the level of treatment fidelity was modest to low with a decreasing trend for each of the three dyads. Mean level of fidelity was 22%, 45% and 29% of BSP components implemented for Dyads, 1, 2 and 3 respectively. Following the introduction of ISIS-SWIS, each of the dyads demonstrated an immediate and sustained increase in level, with mean fidelity of 93%, 91%, and 85% for Dyads 1, 2 and 3 respectively. There were no overlapping data points between Baseline and ISIS-SWIS conditions, and variability following ISIS-SWIS was low with a range of 100% to 71% of BSP components across the three dyads.

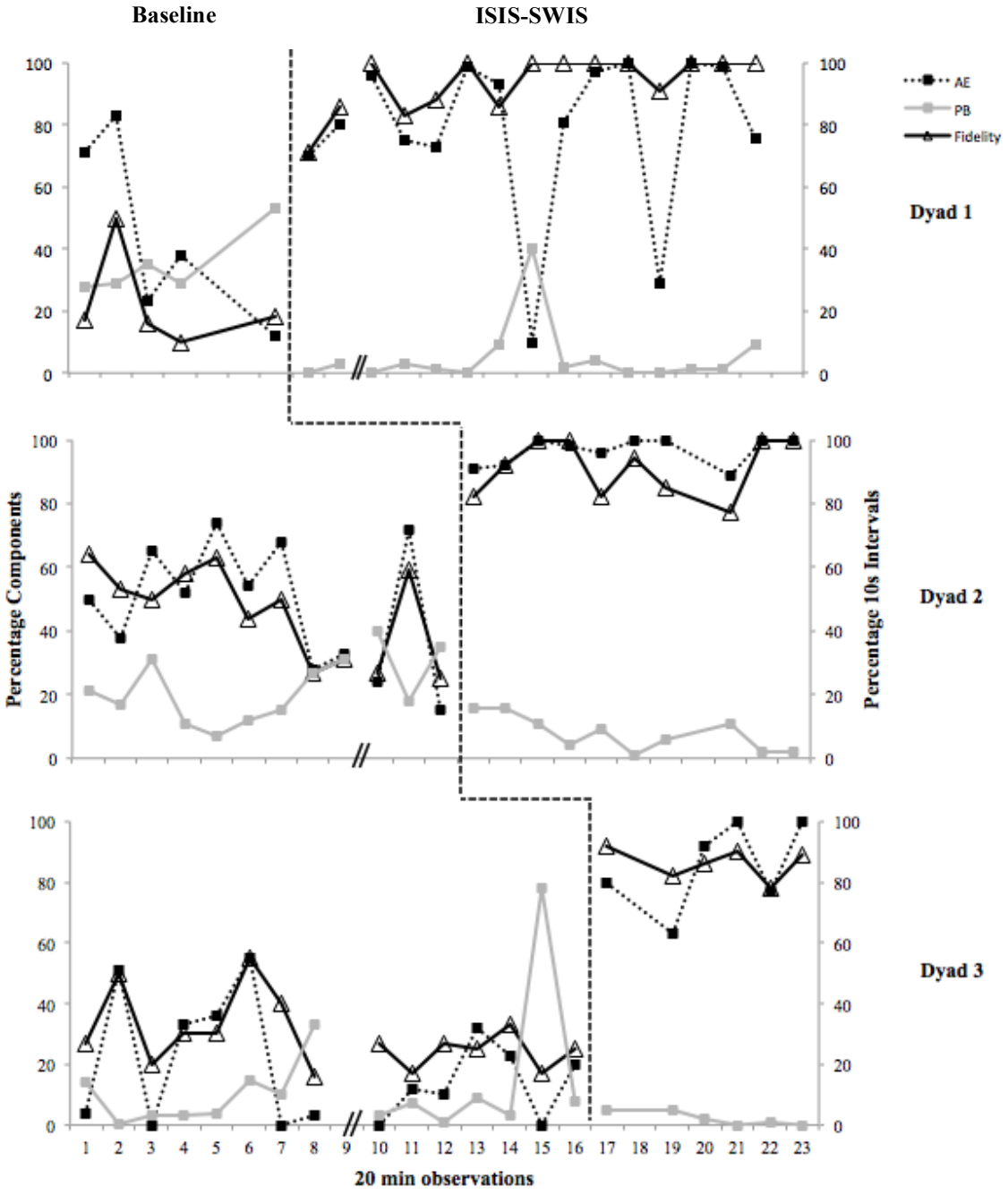

Figure 5. Percentage of BSP components implemented (treatment fidelity) and percentage 10 s intervals with problem behavior (PB) and academic engagement (AE) observed during 20 min observation sessions.

Problem Behavior

During Baseline, the level of problem behavior was moderate to low for all three dyads, and an increasing trend was observed for Dyads 1 and 3. Mean level of problem behavior in Baseline was 34%, 22%, and 12% of 10 s intervals for Dyads 1, 2, and 3 respectively. Following the introduction of ISIS-SWIS, there was an immediate decrease in level for Dyad 1, and a decreasing trend was observed for Dyads 2 and 3. Levels for all three dyads remained low and data were stable, with the exception of observation 15 for Dyad 1. Per teacher report, the student in Dyad 1 had an altercation with a peer before school on this day, and the student engaged in protest behavior most of the morning following the altercation, despite the EA implementing the BSP with high fidelity. Mean level of problem behavior during the ISIS-SWIS condition was 4%, 7%, and 2% of 10 s intervals for Dyads 1, 2, and 3 respectively. There was one overlapping data point between the Baseline and ISIS-SWIS condition for Dyad 1, and several overlapping data points for Dyads 2 and 3.

Academic Engagement

During Baseline, the level of academic engagement was moderate to low for all Dyads. A sharp decreasing trend was observed for Dyad 1, and data for Dyads 2 and 3 were variable. Mean level of academic engagement during Baseline was 45%, 48%, and 18% of 10 s intervals for Dyads 1, 2, and 3 respectively. Following the introduction of ISIS-SWIS, there was an immediate increase in level for all three dyads. Mean level of academic engagement was 78%, 96%, and 85% of 10 s intervals for Dyads 1, 2, and 3 respectively. For Dyad 1, academic engagement data were variable in the ISIS-SWIS condition, ranging from 10% to 100% of 10 s intervals. For Dyad 2, academic

engagement remained high and stable. For Dyad 3, an increasing trend was observed and continued throughout the duration of the study. There were several overlapping data points between Baseline and ISIS-SWIS conditions for Dyad 1, and no overlapping data points for Dyads 2 and 3.

Statistical Analysis of Direct Observation Data

Following the recommendation of Kratochwill et al., (2010; 2012), visual analysis was supplemented with a statistical analysis of effect size. Tau U was the statistic selected for this analysis given the control it provides for within phase trend, control for serial dependency in the data, and the consistency in logic with single-case visual analysis (Parker, Vannest, Davis, & Sauber, 2011; Parker, Vannest, & Davis, 2014). For treatment fidelity for each dyad, Tau U = 1.0 and was found to be statistically significant. For Dyad 1, Tau U = 1.0 ($p = 0.0011$). For Dyad 2, Tau U = 1.0 ($p = 0.0001$). And for Dyad 3, Tau U = 1.0 ($p = 0.0005$). Tau U scores range from 0.0 – 1.0. Because there are no overlapping data points for treatment fidelity, Tau-U has a ceiling of 1.0.

Self-monitoring of Treatment Fidelity

To examine the relationship between observed treatment fidelity and EA self-monitoring of fidelity, correlational analyses were conducted to determine the extent to which observed fidelity data were correlated with self-monitoring data. Additionally, direct observation of fidelity data were plotted against EA self-monitoring of fidelity data. Figure 6 displays the percentage BSP components observed (primary y-axis) and EA self-monitoring of fidelity (secondary y-axis).

For Dyad 1, observed treatment fidelity and EA self-monitoring of fidelity were strongly correlated, $r = .68$, $p < .01$. When reviewing Figure 6, there is an increasing

trend for both observed fidelity and EA self-monitoring of fidelity. Beginning around session 15, levels of both fidelity measures remained at or near 100% (for observed fidelity) or 5 (for ISIS fidelity) throughout the duration of the study.

For Dyad 2, there was a weak correlation of .28 (p = n.s.) between observed treatment fidelity and EA self-monitoring of fidelity. When reviewing Figure 6, the EA in Dyad 2 self-rated herself more conservatively as compared to observed fidelity. It may be important to note that the BSP for the student in Dyad 2 was more complex and included strategies that required precision with timing. For example, the BSP included strategies such as setting a visual timer immediately when the work session began, delivering tokens on a variable interval (VI) 3 min schedule during mastered tasks and a VI 30 s schedule during difficult tasks, and delivering a token immediately upon arrival to work in the absence of problem behavior. During direct observations, trained observers calculated the rate with which EAs delivered tokens to ensure the rate of delivery met or exceeded the reinforcement schedule requirements (i.e., VI 3 min or VI 30 s). The EA did not self-monitor her token delivery with the same degree of precision and may have been more conservative when indicating if she delivered reinforcers at such a rate.

For Dyad 3, observed treatment fidelity and EA self-monitoring of fidelity were strongly correlated, $r = .89$, $p < .05$. When reviewing Figure 6, EA self-monitoring of fidelity covaried with observed fidelity, although values for EA self-monitoring were more extreme. Observed fidelity varied slightly throughout the intervention condition. And while EA self-monitoring followed in a similar direction to observed fidelity, the values for self-monitoring produced a steeper slope than the slope for observed fidelity.

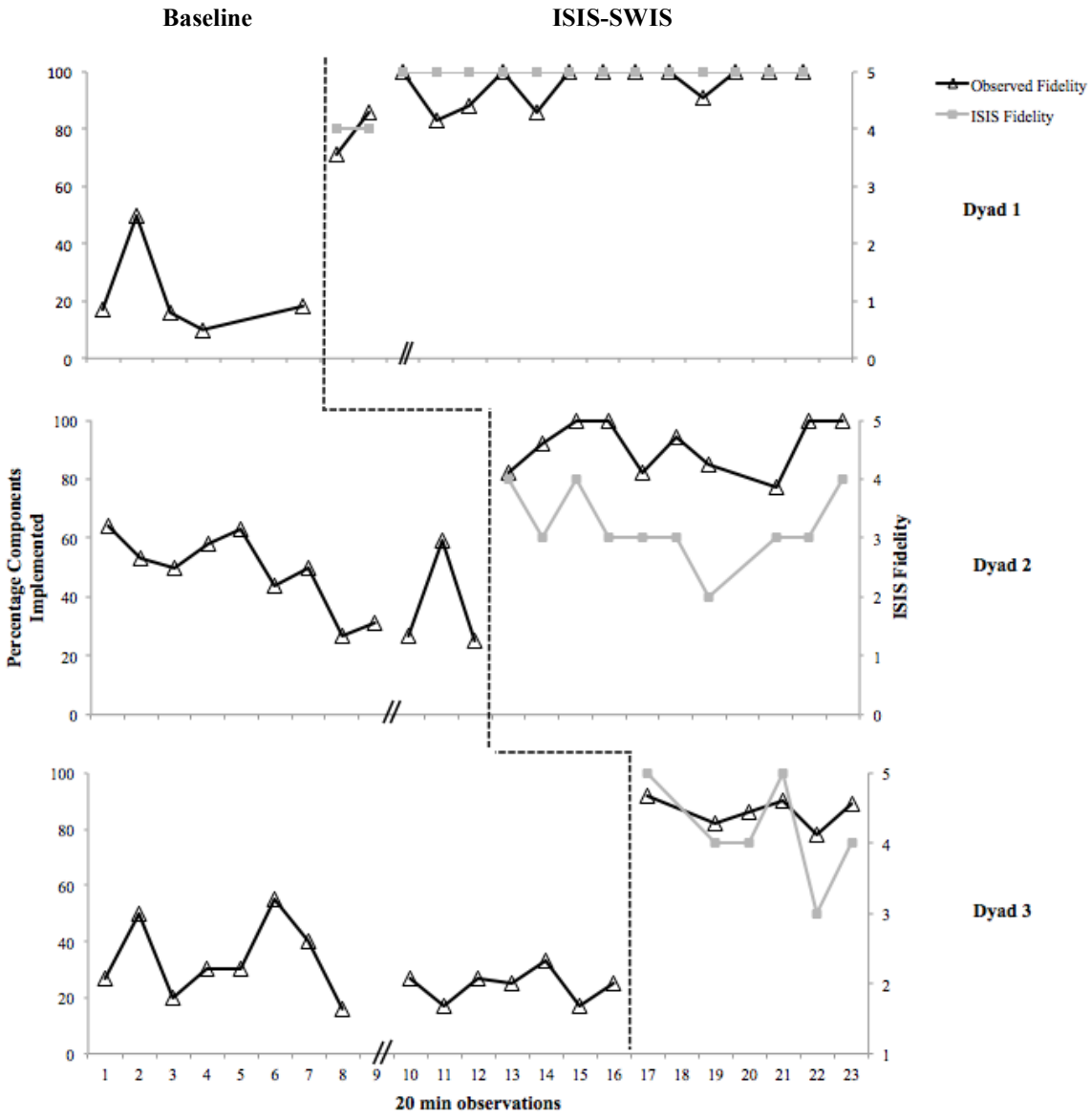

Figure 6. Percentage of BSP components observed (observed treatment fidelity) and EA self-assessment of fidelity via ISIS-SWIS.

Social Validity

Participant responses to the social validity questionnaire are summarized in Table 5. A Likert Scale was used for participants to rate each of the 12 items in the questionnaire (1 = strongly agree to 5 = strongly disagree). EAs indicated the greatest agreement with collecting data on student behavior (M = 1.00), that using ISIS-SWIS made it more likely they would collect data on student behavior (M = 1.66), that using ISIS-SWIS made it more likely they would reflect on how accurately they implemented the student's plan (M = 1.66), and that ISIS-SWIS is easy to use (M = 1.66). Classroom teachers indicated the greatest agreement with the importance of collecting data on student behavior (M = 1.33), the importance of collecting data on staff fidelity (M = 1.33), and that by using ISIS-SWIS they were more likely to reflect upon how accurately they implemented their student's plan (M = 1.33). Item 4, "ISIS-SWIS assisted me in making instructional decisions," was the item rated with the lowest agreement for both EAs (M = 2.66) and teachers (M = 2.33).

ISIS-SWIS Data Entry Use

The researcher kept an on-going record for each dyad to ensure EAs were entering data on treatment fidelity and student outcomes on a daily basis. With the exception of one day, all EAs entered data for both measures into ISIS-SWIS daily without reminders from the researcher. This exception was on April 7th, when the EA in Dyad 1 did not enter data for either measure. That afternoon, the researcher emailed the EA to remind her that data should be entered every day. The EA entered data the following morning and continued entering data daily throughout the duration of the study.

Table 5

Participant Responses to Social Validity Questionnaire Items

Item	Educational Assistants (n = 3)		Classroom Teachers (n = 3)	
	M	Range	*M*	Range
1. Collecting data on student behavior is important	1.00	1	1.33	1 - 2
2. By using ISIS-SWIS, I was more likely to collect data on student behavior.	1.66	1 - 3	1.66	1 - 2
3. By using ISIS-SWIS, I was more likely to review data on student behavior (i.e., viewing graphs).	2.00	1 - 3	1.66	1 - 2
4. ISIS-SWIS assisted me in making instructional decisions.	2.66	1 - 4	2.33	2 - 3
5. Collecting data on staff fidelity of implementation is important.	2.33	1 - 4	1.33	1 - 2
6. By using ISIS-SWIS, I was more likely to reflect how accurately I implemented my student's BSP/plan.	1.66	1 - 2	1.33	1 - 2
7. By using ISIS-SWIS, I was more likely to implement my student's BSP/plan more accurately.	1.66	1 - 2	1.66	1 - 2
8. ISIS-SWIS helped determine if my instruction was helping my student.	2.00	1 - 3	2.00	1 - 3
9. ISIS-SWIS helped me better communicate with other team members.	2.33	2 - 3	2.00	2
10. ISIS-SWIS is easy to use.	1.66	1 - 2	2.00	2
11. ISIS-SWIS is a useful tool.	2.00	2	1.66	1 - 2
12. I recommend other teachers and staff use ISIS-SWIS.	2.33	2 - 3	1.66	1 - 2

Note. Likert Scale responses for educational assistants (n = 3) and classroom teachers (n = 3). Responses ranged from 1 = strongly agree to 5 = strongly disagree.

CHAPTER IV

DISCUSSION

General Discussion

The effective implementation of evidence-based interventions to teach socially appropriate behavior and prevent and decrease problem behavior for students who require individualized supports (i.e., Tier III) is of utmost importance in schools. Effective implementation of function-based behavior support strategies are impacted by an array of variables including technical adequacy of the FBA and BSP, contextual fit of the BSP, treatment fidelity, and data-based decision making. ISIS-SWIS is a data management and decision-making application within the SWIS Suite that allows school teams to store plan documents, enter data on staff fidelity and student outcomes, and review these data for the purpose of decision-making and problem solving. The current study used a multiple baseline design across three student-staff dyads to examine the effects of ISIS-SWIS on treatment fidelity of student BSPs and student behavior. The study also examined the extent to which observed treatment fidelity aligned with staff self-monitoring of fidelity. During baseline, treatment fidelity for all dyads was low. Following the introduction of ISIS-SWIS, there was an immediate increase in level that remained high throughout the duration of the study and student behavior improved. EAs self-monitored treatment fidelity fairly accurately, given that EA self-monitoring scores in ISIS were positively correlated with observed treatment fidelity. In general, EAs and teachers found ISIS-SWIS to be a beneficial and useful tool to assist in the implementation of student BSPs. The results of this study provide support that a data management and decision-making system (i.e., ISIS-SWIS) can be used to assist in the implementation of Tier III

interventions by providing staff with an efficient means to (a) self-monitor treatment fidelity, (b) collect data on student outcome behavior, and (c) review these data for decision-making and problem solving.

Implementation

Considerable efforts have been put forth over the past several decades to identify evidence-based practices and programs to improve student outcomes (Fixsen et al., 2013a). In regard to the prevention and treatment of problem behavior, a vast literature base documents the efficacy of function-based behavior interventions and supports in teaching socially appropriate behavior and preventing and decreasing problem behavior (see Conroy et al., 2005; Dunlap & Carr, 2007; Dunlap & Fox, 2012; Dunlap et al., 2003; Ingram et al., 2005; Iwata et al., 1994; Marquis et al., 2000; Newcomer & Lewis, 2004). However, the effective implementation of these strategies in schools continues to be a challenge. The discrepancy between what research indicates as best practice and what occurs in applied settings is a concern across human service industries. "It has been well documented in many disciplines that major gaps exist between what is known as effective practices (i.e., theory and science) and what is actually done (i.e., policy and practice)" (Fixsen et al., 2005, p. 2). This *research-to-practice gap* has spurred recent interest in developing a technology of implementation. Regardless as to how effective an intervention may fare when subjected to experimental research, the intervention must be implemented with fidelity to produce anticipated effects on student behavior. Fixsen et al. (2013a) outline a formula for successful use of evidence-based practices:

Effective interventions X effective implementation = improved outcomes

(Fixsen et al., 2013a)

Results of the current study indicate that *improved outcomes* occurred when *effective interventions* (i.e., function-based positive behavior support strategies) and *effective implementation* were combined. Visual analysis of direct observation data indicate a functional relation between ISIS-SWIS use and improved treatment fidelity and student behavior. ISIS-SWIS is a tool that provided the school team with necessary implementation supports that enhanced their implementation of Tier III interventions. ISIS-SWIS use was functionally related to improved treatment fidelity, an increase in student academic engagement, and a decrease in student problem behavior. The use of ISIS-SWIS in schools holds great promise with regard to supplying school teams with the tools needed to support implementation, therefore bridging the *research-to-practice* gap and improving the outcomes of students who require intensified supports.

Data-based Decision Making in Schools

The importance of collecting and using data for decision-making and team-based problem solving in schools continues to receive ample attention (Schildkamp et al., 2012). An important caveat to data-based decision making is *type* of data that are collected. Data used for decision-making need to be meaningful and useful to the extent that important decisions can be made that result in improved student outcomes. To reach this end, data on treatment fidelity are crucial. Data on treatment fidelity allow the school team to assess the extent to which interventions are being implemented as planned and described (Cooper et al., 2007). Without these data, there is no way to determine whether there is a functional relation between the intervention and student behavior. Unfortunately,

collecting and reporting data on treatment fidelity is often neglected in education (Fixsen et al., 2005; Gresham, Gansle, & Noell, 1993; Gresham, Gansle, Noell, & Cohen, 1993; McIntyre, Gresham, DiGennaro, & Reed, 2007; Newton et al., 2012; Peterson, Homer, & Wonderlich, 1982; Sanetti, Gritter, & Dobey, 2011). In the present study, treatment fidelity data were gathered by means of EA self-monitoring of fidelity. EAs used a fidelity checklist to review BSP components, rate the degree to which they implemented the BSP, enter those data into ISIS-SWIS, and review those data with the school team. EA self-monitoring was fairly accurate when compared to observed fidelity. In addition to data on treatment fidelity, data on student outcomes is important to determine the effects of the intervention on student behavior. Without data on student outcomes, the school team cannot determine if the intervention should be continued, revised, or discontinued. In the present study, EAs collected data on student outcomes by measuring the number of points earned per day (Dyad 1), the frequency of problem behavior (Dyad 2), and the number of teacher-directed tasks completed (Dyad 3). ISIS-SWIS provided EAs with an efficient method to enter data on treatment fidelity and student outcomes. Results from the social validity questionnaire indicated that EAs found ISIS-SWIS to be an easy to use tool that made it more likely they would collect data on treatment fidelity and student outcomes and implement student BSPs accurately.

In addition to the value of data-based decision making at the formative level (i.e., assessing the extent to which an intervention is being implemented and affecting student behavior), data-based decision making is also important at the summative level. At the summative level, data can be used for large-scale decision-making and problem solving. Data can be used compare performance across schools, districts, states, or other education

agencies (Newton et al., 2011). Insight gleaned from data at this level can allow school administrators to problem-solve areas of concern and develop systems-level interventions that will better enable staff to implement effective instructional practices. Further, it has been found that data-based decision making at the formative level can lead to changes at the summative level (Algozzine & Algozzine, 2009; Bradley, Danielson, & Doolittle, 2007; Fuchs & Deshler, 2007; Newton et al., 2011; Sailor, Doolittle, Bradley, & Danielson, 2009; Sugai et al., 2005).

Unfortunately, effective data-based decision making continues to be difficult for schools (Dunn et al., 2013; Newton et al., 2012; Schildkamp et al., 2012; Telzrow et al., 2000). This challenge may in part be due to the lack of efficient tools and systems to assist schools in collecting data, organizing data, and summarizing data for decision-making. A *data collection and decision system* has been identified as one aspect of Organization Drivers that support effective implementation (Fixsen, Blase, Naoom, & Duda, 2013). Organization Drivers are one category of Implementation Drivers, or the "key components of capacity and functional infrastructure supports that enable a program's success" (Fixsen et al., 2013b, p. 1). There are three categories of Implementation Drivers: Competency Drivers, Organization Drivers, and Leadership Drivers. Figure 7 outlines Implementation Drivers as described by Fixsen et al. (2013b).

Figure 7. Implementation Drivers that enable a program's success identified by Fixsen et al. (2013b).

Organization Drivers include systems intervention, facilitative administration, and decision support data systems. These components are mechanisms that enable and support the development and sustainability of effective environments at the systems level (Fixsen et al., 2013b). Organizational supports come from *facilitative administration* (i.e., superintendents, principals, district behavior specialists) who work to change organizational practices and develop *systems interventions* to support staff in the effective implementation of interventions (The National Implementation Research Network, n. d.). A *decision support data system* is "an essential component for guiding the processes of establishing the innovation, the implementation supports for practitioners, and the assessments of immediate outcomes" (The National Implementation Research Network, n.

d.). In the present study, ISIS-SWIS served as a *decision support data system* that enabled the school team to coordinate and monitor interventions for students requiring Tier III supports. EAs entered data on treatment fidelity and student outcomes daily, and reviewed these data weekly with the school team (the teacher, the EA, and the researcher) to determine if the intervention was being implemented, if the intervention was producing a change in student behavior, and if any changes needed to be made. Results of the present study suggest that ISIS-SWIS could be an effective *decision support data system*, a feature of Organization Drivers that contribute to the effective implementation of evidence-based practices in schools.

Self-delivery of Performance Feedback

Performance feedback has been documented as an effective strategy in improving the fidelity with which staff implement interventions (see Codding et al., 2005; DiGennaro et al., 2005; Fixsen et al., 2005; Fox et al., 2011; Fullerton et al., 2009; Joyce & Showers, 2002; Mortenson & Witt, 1998; Noell et al., 2005; Noell et al., 2000; Rodriguez et al., 2009; Schepis et al., 2001; Sterling-Turner et al., 2002; Wickstrom et al., 1998). Parsons and Reid (1995) and O'Reilly et al. (1992) are among the original studies to describe performance feedback, and researchers continue to use components of these protocols. Although effective, performance feedback procedures are often not feasible in typical school environments because it is time and resource extensive (Simonsen et al., 2013). And while performance feedback is often discussed in terms of an expert or coach delivering the feedback to staff, performance feedback can also be self-delivered. In the present study, expectations for EA behavior were made clear by outlining components of the student's BSP in a checklist. EAs then used the checklist to reflect upon their

behavior and indicate if they implemented each of the components. This self-monitoring strategy provided an opportunity for the EA to self-deliver feedback on treatment fidelity. By reviewing the fidelity checklist, EAs (a) identified components they implemented correctly, (b) identified components they implemented incorrectly, and (c) could at any time ask the teacher questions if they did not understand aspects of the components not implemented. Having classroom staff self-monitor treatment fidelity might offer a way for performance feedback to occur in manner that is not resource extensive for schools.

Relating the theory of reactivity (the change in behavior as a result of self-monitoring) described by Nelson and Hayes (1981) to the self-delivery of performance feedback, the act of self-delivering performance feedback serves as a specific self-monitoring procedure by which reactivity will likely result. The specific activities included in self-delivering performance feedback (observing one's behavior, identifying components implemented and not implemented, and asking questions to clarify) serve as discriminative stimuli that signal the availability a reinforcer (i.e., student success, teacher/supervisor praise) that is contingent on a response (i.e., accurate implementation of the BSP).

Accuracy of Self-monitoring

Empirical studies have indicated that the accuracy with which an individual self-monitors their behavior is not an important factor in producing reactivity (see Broden, Hall, & Mitts, 1971; Fixsen, Phillips, & Wolf, 1972; Hayes & Cavior 1977, 1980; Herbert & Baer, 1972; Lipinski & Nelson, 1974; Nelson & Hayes, 1981). This is an interesting finding, and suggests that the extent to which an individual accurately self-monitors their behavior has no bearing on the effectiveness of self-monitoring in

producing behavior change. In the current study, the extent to which EA self-monitoring was an accurate reflection of treatment fidelity was addressed descriptively rather than experimentally. EA self-monitoring data were strongly correlated with observed fidelity data for Dyads 1 and 3, and improvement in EA behavior was observed for all three dyads. While self-monitoring may used to produce behavior change, researchers and practitioners should exercise caution when using self-monitoring data as the sole measure to determine the extent to which an intervention is being implemented with fidelity, as these data may be inaccurate. One possibility to address this issue is to conduct periodical external observations in addition to frequent self-monitoring. In this paradigm, self-monitoring serves to improve treatment fidelity and external observations assist in improving self-monitoring accuracy and provide an accurate measure of treatment fidelity. Over time, the frequency of external review can be reduced as self-monitoring accuracy improves.

Future Research

Results of the present study and previous research in the area of implementing Tier III interventions in schools present several important areas for additional research. First is the need to consider the role of self-monitoring in education. Results of the current study corroborate previous research indicating the potential benefits of self-monitoring to improve instructional effectiveness in an easy and cost efficient manner. Further investigation is needed to define the features of self-monitoring that make it an effective strategy for improving treatment fidelity. When an individual uses a self-monitoring checklist, the checklist could serve as a discriminative stimulus or prompt (when the checklist is reviewed prior to implementation), or as a reinforcer or corrective

feedback (when reviewed following implementation). When referencing the theory of reactivity described by Nelson and Hayes (1981), the features of the self-monitoring procedure can be conceptualized as a discriminative stimuli that set the occasion for behavior (BSP implementation) that will contact delayed contingencies of reinforcement (student success, supervisor praise). The present study did not include measures to assess when or how frequently EAs reviewed the checklist. Future research should explicitly examine the effects of reviewing the checklist before and after implementation, how often checklists are reviewed, and specific components of checklists that increase the likelihood of their effectiveness (e.g., number of items on the checklist, scoring of items, etc.).

In addition to examining self-monitoring itself, future research should consider approaches to professional development within a self-monitoring framework. The extent to which a supervisor is involved in this professional development model will be an important variable to control for (and systematically manipulate), given issues related to accuracy of self-monitoring data and the varying degrees of supervisor involvement in the published self-monitoring literature. Additionally, contingencies affecting behavior when fidelity data are readily available to the supervisor (and entire team) are very different than when data are housed in the classroom and available only to the teacher. When the entire team can review data (i.e., by logging into ISIS-SWIS), it seems more likely teachers will take steps to improve fidelity. This public review of data can be conceptualized as a positive reinforcement contingency in that teacher improvement of fidelity behavior is reinforced by supervisor approval/praise and student success. It could also be conceptualized as a negative reinforcement contingency whereby teacher

improvement in fidelity results in avoiding or escaping of corrective feedback or student problem behavior. Because positive reinforcement is preferred over negative reinforcement, variables should be considered that increase the likelihood of creating a positive reinforcement contingency for teacher behavior, such as incentive systems where teachers receive some kind of reinforcer for high fidelity behavior.

Future research should also identify the most efficient method to assess fidelity and how school teams review those data for decision-making and problem solving. In the present study, EAs self-monitored fidelity on a daily basis using a rating scale and reviewed those data weekly. Questions regarding the best metric to measure fidelity (i.e., rating scale, frequency, etc.), who should measure fidelity (i.e., self-monitoring or supervisor direct observation), and the frequency with which fidelity should be measured and reviewed by the school team (i.e., daily, weekly, monthly) have yet to be answered. As discussed previously, individuals are not always accurate self-assessors of their behavior, and the accuracy with which individuals self-monitor their behavior has minimal affect on reactivity (see Broden, et al., 1971; Fixsen, et al., 1972; Hayes & Cavior 1977, 1980; Herbert & Baer, 1972; Lipinski & Nelson, 1974; Nelson & Hayes, 1981). Future research should examine how to improve the accuracy of self-monitoring if schools are going to use self-monitoring as a main measure of treatment fidelity. It will be important to establish data collection protocols that are minimally intrusive and efficient. When determining the degree of *efficiency* of the data collection protocol, considerations should be made in regard to accuracy, validity, and reliability of the data, response effort required by the data collector, and the degree to which data can be easily summarized for decision-making. In other words, fidelity data need to be accurate, valid,

reliable, easy to collect, and easy to interpret. Lines of research in this area should include dependent measures to capture the extent to which these data collection protocols lead to meaningful decision making, increased treatment fidelity, and improved student outcomes. Attention should be given to specific activities that school teams engage in to effectively use these data for decision-making and problem solving. The research is clear that data on both treatment fidelity and student outcomes is crucial, yet research on *how* school teams should collect, summarize, and analyze these data is needed. Wayman (2005) describes how schools can be *data rich*, yet *information poor*. Regardless as to if schools are collecting data, they need to effectively use the data to inform decision-making. Researchers have begun to investigate activities involved in team-based problem solving (see Newton et al., 2012), and this line of research holds promise for the field in understanding how school teams can use data to arrive at decisions and solutions that benefit students.

Future research should also examine the effects of ISIS-SWIS with larger units of analysis (i.e., schools, districts, states). While a *decision support data system* has been identified as an Implementation Driver that enables a school's success (Fixsen et al., 2013b), research must be conducted to guide the field in how best to implement such data systems in schools. Specific research projects could examine how to best support school teams and administrators in collecting and using data in meaningful ways that benefit students, staff, and the school as a whole. Randomized clinical trials (RCTs) should be conducted that investigate the effects of ISIS-SWIS on measures of school effectiveness such as the frequency and type of office discipline referrals and suspensions, truancy, and student achievement.

Limitations

There are several limitations of this study worth noting. First, the intervention was ISIS-SWIS use, which included (a) self-monitoring treatment fidelity, (b) collecting data on student behavior, and (c) reviewing these data on a weekly basis. Given that the intervention included these three components, there is no way to determine which component or components produced the change in EA behavior (i.e., improvement in treatment fidelity). To make this determination, a component analysis would need to be conducted to determine the individual effects of each of these components of the treatment package.

Another limitation of the study is inherent to the behavior support strategies themselves. In the current study, each of the students' problem behavior was maintained by escape from academic demands, and student BSPs included strategies to address this function. It is possible that strategies to address escape-maintained problem behavior are easier for staff to implement as compared to strategies to address problem behavior with other maintaining consequences (i.e., attention, tangible, or automatically maintained), or for problem behavior that is controlled by multiple functions. In addition, the topographies of problem behavior in the present study were mild-moderate in severity (e.g., noncompliance, verbal refusal, mild property destruction). EAs would likely require (and for ethical and safety reasons should receive) additional training and support in the form of expert-delivered performance feedback and coaching to implement BSP strategies for more serious topographies of problem behavior such as self-injurious behavior and aggression.

With the exception of the teacher in Dyad 1, the teachers and EAs in the present

study had several years of experience working with students with special needs and had previously received district-wide training in PBIS. Although baseline data indicated low levels of treatment fidelity, it is possible that this previous training affected their ability to implement BSPs with minimal coaching and support following the introduction of ISIS-SWIS. In the current study, there was no content knowledge test to determine the extent to which EAs understood the basic principles of behavior or behavioral interventions. As such, it is possible that previous training in PBIS supplied EAs with necessary/ foundational content knowledge, and the addition of self-monitoring (self-delivered performance feedback) was sufficient in improving treatment fidelity. This content knowledge (previous PBIS training) and support (self-delivered performance feedback) relates to the recommendations of Joyce and Showers (2002) in that effective staff training must include information regarding the theory of the intervention, followed by performance feedback (expert-delivered). Additional research should examine the extent to which similar experimental effects would be observed with staff who received varying degrees of previous training.

To self-monitor treatment fidelity in the current study, the researcher gave EAs a fidelity checklist describing specific components of the student's BSP and asked them indicate on rating scale how many components they implemented. It is possible that similar results would not be observed had the EAs not received such a detailed fidelity checklist. It is likely that the explicit expectations for behavior, as outlined in the fidelity checklist, were crucial aspects of the self-monitoring procedure. Kruger and Dunning (1999) describe a phenomenon where individuals with limited knowledge of a particular topic tend to overestimate their abilities in regard to that topic, and that these individuals

are also unaware that they inflate their abilities. In the context of the current study, this phenomenon would have been observed if EAs self-rated treatment fidelity high when observed treatment fidelity was low. Although this was not observed in the current study, it is worthy of note. It seems probable that the explicit expectations given to EAs in the form of the fidelity checklist enabled them to more accurately self-monitor their behavior. Additionally, in the current study, self-monitored fidelity data were visible to the entire team in ISIS-SWIS. This public reporting feature could have produced more conservative self-assessments of behavior.

Another important consideration when interpreting the results of the present study is the adequacy of student BSPs. In the present study, student BSPs were reviewed by the researcher and revised to meet criteria for technical adequacy (Strickland-Cohen & Horner, 2014) and contextual fit (Horner et al., 2003). As such, the BSPs included elements that would be necessary to produce student behavior change. If the BSPs did not meet such criteria (i.e., they were technically inadequate or lacked contextual fit), an elegant intervention such as ISIS-SWIS would likely not produce an improvement in student behavior. ISIS-SWIS assisted in the efficient implementation of student BSPs, but a poor BSP used in ISIS-SWIS would produce poor results.

Conclusion

The current study provides evidence that school teams consisting of the EA, the classroom teacher, and a behavior specialist (the researcher) can use ISIS-SWIS to assist in the efficient implementation and monitoring of Tier III interventions. ISIS-SWIS allowed EAs to (a) efficiently self-monitor treatment fidelity (and self-deliver performance feedback), (b) collect data on student behavior, (c) enter, store, and organize

these data, and (d) review these data with the team to assess the extent to which the student's plan was implemented and the extent to which the plan was affecting student behavior. In addition to the favorable experimental effects observed in the current study, EAs and teachers indicated that ISIS-SWIS was a beneficial and easy to use tool that increased the likelihood they would collect data and implement behavior interventions with fidelity. Results of this study have implications for policy, research, and practice regarding the efficiency with which schools can coordinate and monitor interventions and supports for students who require tertiary interventions.

APPENDIX A

EXAMPLE OF AN ABC DATA SHEET

Student:	IOA	Date:	Time begin:
Observer:	Observer:	Location:	Time end:

Hit (indicate if peers [Pf [S])	Kick (indicate if peers [P] or staff [S])	Verbal protest (e.g., “no!”)	Elopement	Touching peers	Other :	Group (i.e., circle)	Free play or recess	Academic work	Independent work	Academic task given	Request to join/participate in group	Independent work task given	Preferred activity ends	Transition to lunch, recess, gym, etc.	Peer approach	Other :	Verbal reprimand or redirection	Demand removed	Request repeated	Peer attention (e.g., comment, laugh)	Removed from activity/ class	Access to preferred item/activity	Other :	(Y or N)?
Behavior						**Setting**				**Antecedent**							**Consequence**							

APPENDIX B

EXAMPLE OF A BSP FIDELITY CHECKLIST

Date: Primary Observer:
Participant ID: IOA Observer:

Components of the BSP	**Implemented?** Yes (Y) or No (N)
Tape outline marking the student's "spot" is visible on the carpet (in front of teacher).	Y N
Teacher demonstrates (by modeling) what appropriate sitting and raising hand looks like within 3 min of the beginning of carpet time.	Y N
Teacher reinforces hand raising, having a quiet mouth, and/or sitting appropriately (i.e., "body basics") with stickers.	Y N
Teacher or staff provide at least 5 praise statements to the student for appropriate or neutral behaviors (e.g., "sitting quietly", "body basics") within the 20 min observation period.	Y N
In response to problem behavior*:	
Staff provide minimal attention (i.e., no eye contact limited verbal prompting) when problem behavior occurs.	Y N N/A
If the student was removed from the group*:	
Total "time-out" does not exceed 3 min	Y N N/A
When the student is quiet and seated for several seconds (1 min or less) he is asked to re-join the group.	Y N N/A
Percent:	

*If no problem behavior occurred or time out was not used, mark N/A.

Observer notes:

_____

_____

***Note** any additional information that might be helpful. For example, if the classroom schedule was different today, or the staff have begun fading use of the color spots and increasing verbal praise.

APPENDIX C

BSP FIDELITY CHECKLIST FOR DYAD 1

Components of the BSP	**Implemented?** Yes (Y) , No (N), or no opportunity (N/O)
Prevention	
Provide a scheduled 5 min break for every half hour of work.	Y N
If student appears "agitated," teacher prompts the student to ask for a break or help.	Y N N/O
Teaching	
'Break' and 'help' visual on student's desk/clipboard/ point sheet area.	Y N
Just prior to academic/demand activities, precorrect by reminding the student if they get frustrated, they can ask for a break or help.	Y N
Just prior to an independent assignment, precorrect by reminding the student if they try the task & it's too much, they can raise their hand and request less problems/questions; a certain number of problems then a break; skip hard ones, etc.	Y N N/O
Reinforcement	
Provide descriptive verbal praise and color spots approximately every 5 min, or tallies every 10 min for appropriate behavior such as remaining on task, following directions, interacting appropriately with peers, etc.	Y N N/O
When student earns 10 color spots, he earns 5 min of a preferred activity. Or for tallies, student earns time with teacher (this time can be cashed in at a later time, not immediately after earning).	Y N N/O
When student appropriately asks for help grant the request by helping him complete the activity until he is successful and can successfully do the task independently.	Y N N/O
When student appropriately requests a break, grant the request by allowing 5 min break (set timer)	Y N N/O
During independent work task, when student appropriately asks for a modified task, grant the request by allowing the modification. If the modification is unreasonable, compromise to an appropriate modification.	Y N N/O
Consequence-based Strategies	
Repeat expectation. Or if student engages in property destruction or yelling, prompt him to either complete the task or request a break/help (or modification if independent work task). Verbally prompt in a neutral tone using no more than 2 sentences.	Y N N/O
If student continues to engage in PB, repeat prompt every 2 min	Y N N/O
When student returns from break, precorrect by reminding him that if he gets frustrated, he can ask for a break or help.	Y N N/O
When student returns from break, have him complete the activity he was working on prior to break.	Y N N/O
Percent:	

APPENDIX D

BSP FIDELITY CHECKLIST FOR DYAD 2

Components of the BSP	**Implemented ?** Yes (Y) , No (N), or no opportunity (N/O)
Prevention	
Prompt student to check visual schedule (in binder) at each transition.	Y N
When appropriate, use a visual timer or how much/how log board to show how long an activity will last. Set timer immediately.	Y N N/O
Build choice into activities as much as possible – choices of materials, activities, etc. This does not include choice of which folder activity.	Y N
Intersperse easy tasks with difficult tasks (does not include easy/preferred tasks that are given following PB)	Y N
Before transitions and when preferred activities are ending, prompt when the transition will occur (using timer, visual, or verbal cues). When transitioning to a non-preferred activity, deliver token immediately when he arrives if no PB (e.g., transitioning back to work from break/ contact with reinforcer).	Y N N/O
Teaching	
Precorrect before academic activities by reminding him he can say I need help; I need a break; I want something different.	Y N
Reinforce replacement behavior by granting request, providing verbal praise, and a token.	Y N N/O
Reinforcement	
Deliver tokens approximately every 3 min for working, following directions, transitioning successfully, using his words, etc.	Y N
Use descriptive verbal praise when delivering tokens.	Y N
Prompt student to choose what he would like to earn before starting.	Y N N/O
When student has earned all tokens, give access to reinforcer. Set a timer for 3-5 minutes (or identify the number of bounces, ball throws, location of walk, etc.).	Y N
Student puts all tokens on & takes all tokens off.	Y N
Provide higher rate of reinforcement during difficult activities.	Y N N/O
If student gets off the iPad/other reinforcer willingly the first time, give him his first token immediately and provide verbal praise.	Y N N/O
Remind how many tokens he has left to earn reinforcer.	Y N N/O
Consequence-based Strategies	
Prompt replacement behavior.	Y N N/O
Differentially reinforce appropriate behavior.	Y N N/O
Use no more than 2 sentences to prompt or redirect.	Y N N/O
Percent:	

APPENDIX E

BSP FIDELITY CHECKLIST FOR DYAD 3

Components of the BSP	**Implemented?** Yes (Y), No (N), or no opportunity (N/O)
Prevention	
5:1 positive (reinforcing) to negative (corrective) statements. Pos: Neg:	Y N
Descriptive verbal praise provided at least 3 times: 1 2 3	Y N
Teacher/student choice sheet visible to student.	Y N
6-8 academic "teacher choice" activities interspersed amongst 4 "student choice" activities. Could fill in "student choice" 1 by 1. Schedule is followed.	Y N
Student choice activities last 6-8 min; timer is set a beginning of activity	Y N
Teacher/student choice completed before work begins.	Y N
Color spot or Pride Cards visible to student	Y N
Color spots or Pride Cards delivered approx. every 5 min for being on task, following rules, etc.	Y N
Once color spot card is filled in, student chooses prize from treasure chest.	Y N N/O
Stars cashed in at class store on Friday	Y N N/O
Teaching	
Before transitioning to work tasks, staff reminds student to ask for break/help if they become frustrated.	Y N
If student requests break, break is granted.	Y N N/O
If student requests help, teacher helps student complete task.	Y N N/O
Descriptive verbal praise for engaging in replacement behaviors.	Y N N/O
Consequence-based Strategies	
If student engages in PB during a work task, staff offer choice: finish task or request break/help. If elopement, staff refers to teacher/student choice sheet and reminds that his choice is after work; prompts student to complete work first.	Y N N/O
When student returns to task, staff provide verbal praise and a color spot or Pride Card.	Y N N/O
Percent:	

APPENDIX F

PARTIAL INTERVAL DATA SHEET FOR DYAD 1

Student ID: Dyad 1 Date: Time Start:
Observer: IOA Observer: Activity:

+	**Academic Engagement**	During work time (academic or social; individual, 1:1, or group), the student's shoulders and eyes are directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive seconds. If the teacher has instructed students to orally respond, raise their hands, write, etc., the student engages in the requested behavior. Attending to teacher when giving instructions. This does not include attending to activities when on break (e.g., toys, book, etc.)
—	**Not Academically Engaged**	During work time (academic or social; 1:1 or group), the student's shoulders and eyes are not directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive sec.
OT	**Off Topic Talk**	Student makes a comment or asks a question that does not relate to the current task at hand. "Stalling". Asking an unnecessary/simple question that is not gaining information needed to complete activity.
OS	**Out of Seat**	Student's buttocks are not in contact with the seat for a minimum of 3 consecutive sec. (at a time when the expectation is to be seated).
P	**Protest/ task refusal**	Student does not initiate teacher request/direction within 5s. Yelling; saying "no" or other words to indicate he will not comply with teacher request. Shaking head "no".
D	**Disruption**	Noises made with mouth; touching peers with body or objects; commenting or asking questions at a time when the expectation is to be quiet. Property destruction (tearing instructional materials or crumpling paper with hands). Taping pencil or other object on desk. Stomping feet.

	0-10s	11-20s	21-30s	31-40s	41-50s	51-60s
1	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
2	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
3	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
4	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
5	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
6	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
7	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
8	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
9	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
10	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D

+	**Academic Engagement**	During work time (academic or social; individual, 1:1, or group), the student's shoulders and eyes are directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive seconds. If the teacher has instructed students to orally respond, raise their hands, write, etc., the student engages in the requested behavior. Attending to teacher when giving instructions. This does not include attending to activities when on break (e.g., toys, book, etc.)
—	**Not Academically Engaged**	During work time (academic or social; 1:1 or group), the student's shoulders and eyes are not directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive sec.
OT	**Off Topic Talk**	Student makes a comment or asks a question that does not relate to the current task at hand. "Stalling". Asking an unnecessary/simple question that is not gaining information needed to complete activity.
OS	**Out of Seat**	Student's buttocks are not in contact with the seat for a minimum of 3 consecutive sec. (at a time when the expectation is to be seated).
P	**Protest/ task refusal**	Student does not initiate teacher request/direction within 5s. Yelling; saying "no" or other words to indicate he will not comply with teacher request. Shaking head "no".
D	**Disruption**	Noises made with mouth; touching peers with body or objects; commenting or asking questions at a time when the expectation is to be quiet. Property destruction (tearing instructional materials or crumpling paper with hands). Taping pencil or other object on desk. Stomping feet.

	0-10s	**11-20s**	**21-30s**	**31-40s**	**41-50s**	**51-60s**
11	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
12	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
13	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
14	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
15	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
16	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
17	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
18	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
19	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D
20	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D	+ — OT OS P D

Totals:

Academic Engagement	/ 120	%
Not Academically Engaged	/ 120	%
Problem Behavior	/ 120	%

APPENDIX G

PARTIAL INTERVAL DATA SHEET FOR DYAD 2

Student ID: Dyad 2 Date: Time Start:
Observer: IOA Observer: Activity:

+	**Academic Engagement**	During work time (academic or social; 1:1 or group), the student's shoulders and eyes are directed toward the teacher or the activity the teacher is leading for a minimum of 5 consecutive sec. Attending to teacher instructions. This does not include attending to activities during breaks.
—	**Not Academically Engaged**	During work time (academic or social; 1:1 or group), the student's shoulders and eyes are not directed toward the activity the teacher is leading for a minimum of 5 consecutive sec. *If student is given preferred task (i.e., folder activity), code as Not Academically Engaged & denote intervals with asterisk.
PD	**Property Destruction**	Throwing items; tearing materials; otherwise damaging materials. Pushing materials away from the instructional area.
AG	**Aggression**	Grabbing others with hands/arms. *Other topographies observed? If so, please describe:*
PR	**Protest**	Saying "no," "I'm done," or other words to indicate he will not comply with teacher request. Shaking head "no". Not initiating teacher request within 5s.
D	**Disruption**	Noises made with mouth; yelling; singing.

	0-10s	**11-20s**	**21-30s**	**31-40s**	**41-50s**	**51-60s**
1	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
2	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
3	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
4	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
5	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
6	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
7	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
8	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
9	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
10	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D

+	**Academic Engagement**	During work time (academic or social; 1:1 or group), the student's shoulders and eyes are directed toward the teacher or the activity the teacher is leading for a minimum of 5 consecutive sec. Attending to teacher instructions. This does not include attending to activities during breaks.
—	**Not Academically Engaged**	During work time (academic or social; 1:1 or group), the student's shoulders and eyes are not directed toward the activity the teacher is leading for a minimum of 5 consecutive sec. *If student is given preferred task (i.e., folder activity), code as Not Academically Engaged & denote intervals with asterisk.
PD	**Property Destruction**	Throwing items; tearing materials; otherwise damaging materials. Pushing materials away from the instructional area.
AG	**Aggression**	Grabbing others with hands/arms. *Other topographies observed? If so, please describe:*
PR	**Protest**	Saying "no," "I'm done," or other words to indicate he will not comply with teacher request. Shaking head "no". Not initiating teacher request within 5s.
D	**Disruption**	Noises made with mouth; yelling; singing.

	0-10s	**11-20s**	**21-30s**	**31-40s**	**41-50s**	**51-60s**
11	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
12	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
13	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
14	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
15	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
16	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
17	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
18	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
19	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D
20	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D	+ — PD AG PR D

Totals:

Academic Engagement	/ 120	%
Not Academically Engaged	/ 120	%
Problem Behavior	/ 120	%

APPENDIX H

PARTIAL INTERVAL DATA SHEET FOR DYAD 3

Student ID: Dyad 2 Date: Time Start:
Observer: IOA Observer: Activity:

+	**Academic Engagement/ Teacher Choice**	During work time (academic or social; 1:1 or group; or "teacher choice" activity), the student's shoulders and eyes are directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive sec. Attending to teacher instructions. This does not include attending to activities during breaks, free choice, etc.
—	**Not Academically Engaged**	During work time (academic or social; 1:1 or group), student's shoulders and eyes are not directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive sec.
OT	**Off Topic Talk**	Student makes a comment or asks a question that does not relate to the current task at hand.
E	**Elopement**	Student leaves designated area without permission. Score all intervals out of designated area.
P	**Protest**	Yelling; saying "no" or other words to indicate he will not comply with teacher request. Student does not initiate teacher request/direction within 5s.
D	**Disruption**	Noises made with mouth; touching peers with body or objects; commenting or asking questions at a time when the expectation is to be quiet.

	0-10s	**11-20s**	**21-30s**	**31-40s**	**41-50s**	**51-60s**
1	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
2	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
3	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
4	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
5	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
6	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
7	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
8	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
9	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
10	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D

+	**Academic Engagement/ Teacher Choice**	During work time (academic or social; 1:1 or group; or "teacher choice" activity), the student's shoulders and eyes are directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive sec. Attending to teacher instructions. This does not include attending to activities during breaks, free choice, etc.
—	**Not Academically Engaged**	During work time (academic or social; 1:1 or group), student's shoulders and eyes are not directed toward the activity the teacher is leading or the task the teacher assigned for a minimum of 5 consecutive sec.
OT	**Off Topic Talk**	Student makes a comment or asks a question that does not relate to the current task at hand.
E	**Elopement**	Student leaves designated area without permission. Score all intervals out of designated area.
P	**Protest**	Yelling; saying "no" or other words to indicate he will not comply with teacher request. Student does not initiate teacher request/direction within 5s.
D	**Disruption**	Noises made with mouth; touching peers with body or objects; commenting or asking questions at a time when the expectation is to be quiet.

	0-10s	**11-20s**	**21-30s**	**31-40s**	**41-50s**	**51-60s**
11	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
12	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
13	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
14	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
15	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
16	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
17	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
18	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
19	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D
20	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D	+ — OT E P D

Totals:

Academic Engagement	/ 120	%
Not Academically Engaged	/ 120	%
Problem Behavior	/ 120	%

APPENDIX I

ISIS-SWIS DATA ENTRY RECORD

Circle Y (yes) or N (no) to indicate if fidelity and outcome data were entered for that day.

Date	Participant 1		Participant 2		Participant 3		Participant 4		Participant 5		Participant 6	
	Fidelity	Outcome	Fidelity	Outcome	Fidelity	Outcome	Fidelity	Outcome	Fidelity	Outcome	Fidelity	Outcome
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

APPENDIX J

FBA PROCEDURAL ADEQUACY CHECKLIST

(Loman & Horner, 2013, p. 99)

FBA PROCEDURAL ADEQUACY CHECKLIST

Participant #: _____

1. FACTS parts A & B completed with a staff member who works with the student during routines where problem behavior occurs? Yes OR No

2. Problem behavior was defined in observable and measurable terms? Yes OR No

   Operational definition of the problem behavior?

   _____

3. Was a routine prioritized for direct observations? Yes OR NO

   Routine where observations conducted? _____

4. An antecedent event was defined as triggering the problem behavior? Yes OR No

   Antecedent event identified: _____

5. Only ONE prioritized maintaining function of the problem behavior was identified? Yes Or No

   Maintaining function of the problem behavior identified:

APPENDIX K

CRITICAL ELEMENTS OF THE BSP CHECKLIST

(Strickland-Cohen, 2012)

Critical Elements of the BSP	Rating
Operational (i.e., observable, measurable) description of the problem behavior(s)	Y N
Identification of settings/routines where problem behavior is most likely to occur	Y N
Antecedents (including setting events, if applicable) are identified	Y N
Identified antecedents are consistent with FBA summary statement	Y N
The function of the problem behavior is identified	Y N
The identified function is consistent with the FBA summary statement	Y N
Includes strategies for preventing the problem behavior(s) from occurring (i.e., antecedent strategies, strategies to address any identified setting events)	Y N
Includes at least one prevention strategy that is consistent with the FBA summary statement, and does not include contraindicated strategies	Y N
Includes an instructional strategy for teaching alternative behavior(s)/routines	Y N
Teaching strategies are consistent with the FBA summary statement	Y N
Includes strategies for reinforcing alternative behavior	Y N
At least one strategy for reinforcing alternative behavior that is consistent with the FBA summary statement, and does not include contraindicated strategies	Y N
Includes strategies for minimizing rewards for problem behavior	Y N
At least one strategy for minimizing rewards for problem behavior is consistent with the FBA summary statement, and does not include contraindicated strategies	Y N
Includes strategies for reinforcing desired behavior	Y N
Reinforcement strategies are consistent with the FBA summary statement	Y N

Includes Implementation Plan that specifies the person(s) responsible for implementation of intervention strategies	Y N
Includes an Evaluation Plan that: a) documents a system for assessing the fidelity with which the plan has been implemented AND…	Y N
b) documents a system for assessing the impact of the plan on student outcomes	Y N
Technical adequacy score for this behavior support plan:	

APPENDIX L

CONTEXTUAL FIT RATING SCALE

(Horner, Salentine, & Albin, 2003)

The purpose of this interview is to assess the extent to which the elements of a behavior support plan fit the contextual features of your school environment. The interview asks you to rate (a) your knowledge of the elements of the plan, (b) your perception of the extent to which the elements of the behavior support plan are consistent with your personal values, and skills, and (c) the school's ability to support implementation of the plan.

Name of Interviewee: _____ Role : _____
Support plan reviewed: _____

Knowledge of elements in the Behavior Support Plan.

1. I am aware of the elements of this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

2. I know what I am expected to do to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Skills needed to implement the Behavior Support Plan

3. I have the skills needed to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

4. I have received any training that I need to be able to implement this behavior support plan.

   No training needed _____

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Values are consistent with elements of the behavior support plan

5. I am comfortable implementing the elements of this behavior support plan

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

6. The elements of this behavior support plan are consistent with the way I believe students should be treated.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Resources available to implement the plan

7. My school provides the faculty/staff time needed to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

8. My school provides the funding, materials, and spaced needed to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Administrative Support

9. My school provides the supervision support needed for effective implementation of this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

10. My school administration is committed to investing in effective design and implementation of behavior support plans.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Effectiveness of Behavior Support Plan

11. I believe the behavior support plan will be (or is being) effective in achieving targeted outcomes.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

12. I believe the behavior support plan will help prevent future occurrence of problem behaviors for this child.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Behavior Support Plan is in the best interest of the student

13. I believe this behavior support plan is in the best interest of the student.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

14. This behavior support plan is likely to assist the child to be more successful in school.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

The Behavior Support Plan is efficient to implement

15. Implementing this behavior support plan will not be stressful.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

16. The amount of time, money and energy needed to implement this behavior support plan is reasonable.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Scoring the Self-Assessment of Contextual Fit

This instrument may be used to build a summary score and sub-scale scores that have been helpful both for researchers and for individuals building behavior support plans. To build Contextual Fit scores calculate the mean score per subscale, and then build a total score by calculating the mean of the subscale scores.

Contextual Fit Subscale	Score on first question	Score on second question	Mean equals Subscale Score
Knowledge of BSP elements			
Skills to implement BSP			
Values consistent with BSP			
Resources to implement BSP			
Administrative Support			
Anticipated effectiveness of BSP			
BSP is in best interest of student			
BSP is efficient to implement			
Contextual Fit Total Score			Mean =

APPENDIX M

SOCIAL VALIDITY QUESTIONNAIRE

Teacher: _____ Date: _____

This questionnaire consists of 12 items. For each item, please indicate the extent to which you agree or disagree with each statement. Thank you!

1.	Collecting data on student problem behavior is important.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2.	By using ISIS, I was more likely to collect data on student problem behavior.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3.	By using ISIS, I was more likely to review data on student problem behavior (i.e., graphs, reports).	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4.	ISIS assisted me in making instructional decisions.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5.	Collecting data on teacher implementation fidelity is important.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6.	By using ISIS, I was more likely to reflect on how accurately I implemented my student's BSP.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7.	By using ISIS, I was more likely to implement my students BSP more accurately.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8.	ISIS helped determine if my instruction was producing a change in student behavior.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9.	ISIS helped me better communicate with other team members.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10.	ISIS is easy to use.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11.	ISIS is a useful tool for teachers.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
12.	I recommend other teachers use ISIS.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Please provide any additional information that might be important for us to know regarding the use of ISIS in classrooms:

Thank you for your time! ☺

APPENDIX N

OUTLINE OF ISIS-SWIS TRAINING WITH TEACHERS

(PBIS Applications Training Team, 2013a)

SWIS Facilitator Outline for
Swift at ISIS-SWIS

Agenda
Overview of ISIS-SWIS
Basic ISIS-SWIS Navigation
Student File Set-up & Management
Data Entry
Reports
User Resources

Goals:

1. Demonstration of Basic ISIS-SWIS Navigational Features
2. Demonstration of Basic ISIS-SWIS Student File Set-Up & Management
    a. Person Management
    b. Creating Student Files
    c. Team Members
    d. Documents
    e. Measures
3. Demonstration of Basic ISIS-SWIS Data Entry
4. Demonstration of Basic SWIS Reporting Options

Set up:

Before	• Schedule 3-hour (uninterrupted) block with all ISIS-SWIS coordinators and other identified participants and follow-up meetings with each coordinator. • Allow 2-3 weeks for the school's ISIS-SWIS account to be set up, so schedule your Swift at ISIS-SWIS training accordingly. *The live account should not be used during the training, but can be used during wrap-up.* a. Ask each coordinator to bring 1-2 student case files and data. b. Use SAMI to verify that the ISIS-SWIS account has been set up. c. One week prior to training confirm date, time, location, and expectations with all participants. • Room Requirements a. Request computer with internet access for each participant. b. Request projector and computer for demonstration.
During	• Materials ☐ ISIS-SWIS Manual (ISM) ☐ Swift at ISIS-SWIS Training Outline ☐ Demo Student Files (electronic) ☐ Demo Student File Set-Up Checklists (Brian & Carly) ☐ 1-2 case files per coordinator ☐ ISIS-SWIS Demo account ☐ ISIS-SWIS Facilitator account • Sections a. Overview of ISIS-SWIS (30 minutes) b. Student File Set-Up (90 minutes) c. Data Entry and Report Generation (45 minutes) d. Data Entry & Report Schedule (15 minutes)

APPENDIX O

SELF-MONITORING FIDELITY CHECKLIST FOR DYAD 1

ISIS-SWIS Fidelity Score

Rating	*Percent Components Implemented*
5	91- 100%
4	71- 90%
3	51- 70%
2	31- 50%
1	11- 30%
0	0-10%

Thank You!
☺

Components of the Plan
1. Provide a scheduled 5 min break for every half hour of work. Or, give him 2 min with preferred staff for every 10 min of continuous work.
2. If student appears agitated/ frustrated, prompt him to ask for a break/help/modification.
3. 'Break' and 'help' visual on student's desk/clipboard/point sheet area.
4. Just prior to academic activities, precorrect by reminding the student if they get frustrated, they can ask for a break or help. If independent assignment, remind the student if they try the task & it's too much, they can raise their hand and request less problems/questions, a certain number of problems then a break, etc.
5. Provide descriptive verbal praise and color spots approximately every 5 min for appropriate behavior such as remaining on task, following directions, interacting appropriately with peers, etc. When he earns 10 color spots, he earns 5 min of a preferred activity.
6. When he appropriately asks for help, break, or modified task, provide descriptive verbal praise and grant the request. For *help*, assist until he can complete the task independently. For *breaks*, set timer for a 5 min break. For *modification*, allow the modification. If the modification is unreasonable, compromise to an appropriate modification.
7. If he engages in problem behavior (i.e., noncompliance, property destruction, or disruption) repeat the expectation and consequences (e.g., will stay in to complete work during recess, etc.) and prompt him to complete task or request a break/help/modified task. Verbally prompt in a neutral tone with minimal eye contact using no more than 2 sentences. Repeat prompt every 2 min as needed.
8. When student returns from break, precorrect by reminding him that if he gets frustrated, he can ask for a break or help.
9. When student returns from break, have him complete the activity he was working on prior to break.
10. Point sheet is filled out with the student following each activity (unless he is agitated or "on edge").

APPENDIX P

SELF-MONITORING FIDELITY CHECKLIST FOR DYAD 2

ISIS Fidelity Score		
ISIS Rating 5 4 3 2 1 0	*Percent Components Implemented* 91- 100% 71- 90% 51- 70% 31- 50% 11- 30% 0-10%	Thank You! ☺
Components of the Plan		
1. When he arrives to work, immediately give him a token (if no problem behavior) and set visual timer. Tell him how long they have to work until recess.		
2. Before beginning work, remind him he can say "I need help," "I need a break," or "something different."		
3. Rotate between easy tasks and Language for Learning (L for L). Start with an easy task, then do L for L, then an easy task, etc. Keep L for L as short as possible. *Easy tasks:* Mastered L for L, number flashcards, new folder activities, etc.		
4. Give tokens every 3 min. Give specific praise when giving tokens, such as "Great quiet voice!" "Good job following directions!"		
5. Give tokens every 30 seconds during L for L.		
6. Give him choices as much as possible. For example: - Show him 2 tasks and let him choose which to work on. - Let him choose which materials to use.		
7. When he goes back to work after a preferred activity (e.g., bouncing on ball), give him a token immediately.		
8. If he gets frustrated, prompt him to say "I need help," "I need a break," or "something different."		
9. If he asks for a break, help, or something different, grant the request: *For a break:* Give 5 min break. Set a timer for 5 min. *For help:* Show him how to do the task. *For something different:* Give him a choice between 2 different tasks		
10. If he says "I'm done," prompt him to say, "something different." Once he says "something different," give him a choice between 2 different tasks. **Be careful not to give him an easy folder when he whines or says "I'm done." Instead, prompt him to say "something different," then give him a choice between 2 other work tasks.*		

APPENDIX Q

SELF-MONITORING FIDELITY CHECKLIST FOR DYAD 3

ISIS-SWIS Fidelity Score

Rating	*Percent Components Implemented*
5	91- 100%
4	71- 90%
3	51- 70%
2	31- 50%
1	11- 30%
0	0-10%

Thank You!
☺

Components of the Plan

1. Teacher/student choice sheet:
    1. Fill out with him during calendar.
    2. You choose 6-8 teacher activities and he chooses an activity to follow those activities. Be specific and write how many pages or problems he needs to complete.
2. Just before starting a teacher choice activity, remind him:
    1. How many pages/problems and that he'll earn a Pride Card
    2. Which student choice he gets after work.
    3. He can ask for help or a break if he gets frustrated.
3. Give specific praise for working, following directions, etc.
    - Examples: "Awesome job following directions!" "Great job coming back to work!"
4. Give 1 Pride Card after each teacher choice activity.
    - He can "cash in" Pride Cards to talk with you (his choice of topic), principal chair, an extra student choice, a "work pass", school store (Wed), popcorn (Fri), choose something from treasure box, 3rd grade recess with you, etc.
5. Student choice activities last 6-10 min. Set a timer at the beginning and remind him how long he has for the activity. Give reminders at about 4 and 2 min.
6. When the timer for student choice goes off, ask him to check the Choice Sheet to see what's next. Remind him that after 1 teacher choice, he gets another student choice.
7. When he returns to work after student choice, give specific praise and a Pride Card right away.
8. When he earns a 2 on his point sheet at the end of an activity, show him the point sheet and provide specific praise for being safe, respectful, and doing his personal best. At the end of his day, give him a star for all 1s and 2s.
9. If he needs a break & requests it, give a 5 min break and set a timer for 5 min.
10. If he engages in problem behavior during work:
    1. Repeat the expectation (what he should be doing).
    2. Refer to Choice Sheet and remind him how much he has to do until it's student choice.
    3. Prompt him to finish work or request break/help.
    4. Repeat #1-3 every 2 min as needed.
    5. Prompt him to take a break if be becomes highly escalated (i.e., aggression, etc.).
    6. Provide minimal attention.
    7. Prompt calm-down routine.
    8. Once calm, give a simple request (i.e., sit with safe body for 2 min). Provide specific praise once he complies with request.
    9. Once calm, return to work.

    **Don't give access to student choice activities after he engages in problem behavior or while on break/ calming down. His choice activities are for after work.*

APPENDIX R

FIDELITY CHECKLIST FOR DELIVERING FEEDBACK AND REVIEWING DATA WITH TEACHERS

Teacher ID: Date:

Feedback Regarding ISIS-SWIS Use	**Implemented?** Yes (Y) or No (N)
1. The researcher provides verbal praise to the teacher for using components of ISIS-SWIS regularly and accurately (e.g., entering fidelity or outcome data, uploading documents, etc.).	Y N
2. The researcher identifies components of ISIS-SWIS the teacher is not using and vocalizes this to the teacher.	Y N
3. The researcher models how to use the neglected component(s).	Y N
4. The researcher prompts the teacher to practice using the neglected component(s) that was just modeled.	Y N
5. If the teacher uses the neglected component(s) correctly, the researcher provides verbal praise. If the teacher uses the neglected component(s) incorrectly, the researcher provides verbal prompts and/or an additional model until the teacher is successful.	Y N
6. The researcher and teacher agree upon components the teacher will begin to use.	Y N
Review of Data	**Implemented?** Yes (Y) or No (N)
1. The researcher asks teacher to generate graphs in ISIS-SWIS (for student outcome and fidelity measures).	Y N
2. The researcher prompts the teacher to indicate if the plan is being implemented with high treatment fidelity.	Y N
3. The researcher prompts the teacher to indicate if the plan is effective in minimizing problem behavior/ increasing appropriate behavior.	Y N
4. The researcher prompts the teacher to indicate if any changes need to be made.	Y N

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