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ARTICLES

Building Systems for Successful Implementation of Function-Based Support in Schools

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Supporting the full range of students with behavioral challenges requires that schools build the capacity to implement evidence-based behavioral interventions. Fortunately, a substantive body of research documents behavioral interventions are available to both decrease problem behavior and enhance prosocial skills. To date, however, this intervention technology has not been implemented widely. This article maintains that one reason for limited implementation is schools are missing the systems needed to support high-quality behavioral interventions. This article both summarizes key features of function-based behavioral interventions used to support students with more intense behavior support needs and identifies the systems needed for these interventions to be implemented with efficiency and sustainability. This article provides a case example to demonstrate the systems needed for implementation. Implications are offered for improving the large-scale adoption of function-based behavioral supports in education.

Keywords: Behavioral intervention, behavioral management, behavioral outcomes, positive behavior intervention support, response to intervention, school

When provided with effective behavioral intervention, even students with significant problem behaviors can be successful in school (Lane, Falk, & Wehby, 2006; Reitman & Hupp, 2003). Although a robust body of research supports the effectiveness of behavioral interventions in schools, widespread adoption of these practices has not occurred (Conroy, Peck Stichter, & Fox, 2001). One reason for this research to practice gap may be that insufficient attention has been focused on the administrative and organizational systems needed for high fidelity, sustained adoption of evidence-based practices including functional behavior assessment (FBA) and function-based interventions.

Linking evidence-based interventions with organizational systems is a core theme of School-Wide Positive Behavioral Interventions and Supports (SWPBIS; Horner, Sugai, & Anderson, 2010). This emphasis is of special importance for the complex practices used in intensive, individualized behavior support (Anderson & Scott, 2009). SWPBIS consists of three interconnected tiers of intervention.

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TABLE 1
Summary of the Practices and Systems of Intensive Positive Behavior Support

Function-Based Support Practices	*Data Systems for Function-Based Support*	*Organizational Systems for Function-Based Support*
• Functional behavior assessment matched to complexity of problem	• Universal screening and formative evaluation	• Commitment to support for all students
• Comprehensive, multicomponent interventions	• Progress monitoring of student outcomes	• Personnel policies (hiring, evaluation, and training)
• Environmental redesign	• Monitoring implementation fidelity	• Team process (people, time, and procedures)
• Teaching functionally equivalent behaviors	• Using data for decision-making	• District behavioral expertise
• Consequences to increase appropriate behavior		• Coordination at district and school building
• Consequences to decrease inappropriate behavior		• Data systems for active decision-making

Tier I interventions are designed for all students, all locations and all times. The goal of Tier I interventions is to establish a positive, predictable, consistent, and safe social culture where behavioral expectations are clearly defined, taught, and acknowledged. Tier II interventions are designed for students at moderate risk for problem behavior and typically involve standardized intervention packages that can be implemented with high efficiency (Anderson & Borgmeier, 2010). Tier III, intensive interventions are for students emitting serious behavioral challenges that have not been responsive to less intensive efforts. Tier III interventions are individualized and are derived from functional behavior assessment (FBA). The process of FBA and support planning has been described in detail in numerous books, chapters, and articles and is, thus, not expanded on here. Interested readers are referred to Anderson and Scott (2009), Hanley (2011), or O'Neill et al. (1997) for descriptions of the FBA and the support-planning process. We, instead, focus on the less often described organizational structures and systems school and district leadership teams should consider as they plan for large-scale implementation of function-based practices. These include the use of data for decision-making and systems-level organization. Table 1 provides an overview of these practices and systems.

DATA-BASED DECISION-MAKING

A significant contribution of applied behavior analysis is the emphasis on collection and use of data for decision-making. This contribution stands out in the process of function-based support. The process of effective function-based support requires use of data in at least four ways: universal screening, FBA, monitoring fidelity of implementation, and evaluating intervention effects (i.e., progress monitoring).

Universal Screening

Universal screening involves periodic (e.g., quarterly or twice per year) assessment of the social behavioral functioning of all students in a school (Severson, Walker, Hope-Doolittle, Kratochwill, & Gresham, 2007) to identify students who might benefit from additional supports. Universal screening allows problems to be identified earlier while they are smaller in magnitude, which may increase responsiveness to less intensive interventions. This might include students exhibiting disruptive behavior, as well as students who are exhibiting behaviors more consistent with diagnoses of anxiety or depression. Universal screening must be both effective for identifying students in need of more supports and efficient—teachers must be able to complete the evaluation fairly quickly, and school staff should be able to assess the results in a timely manner. Universal screening can be accomplished via periodic review of office discipline referral patterns provided schools have established decision rules for their use (Irvin et al., 2006). Other extant sources of data might include absenteeism records, tardiness data, and visits to the nurse's office. Alternatively, a school might use a norm-referenced behavior rating scale for school-wide screening. B. Walker, Cheney, Stage, and Blum (2005) compared results of a norm-referenced and widely used universal screener (Systematic Screening for Behavior Disorders; H. M. Walker & Severson, 1992) to office referral patterns and found that, although both were useful for identifying students exhibiting disruptive behaviors, office referrals alone were insufficient for identifying students with or at risk for anxiety or depression-related difficulties. They suggest schools use a combined approach—yearly or biannual school-wide screening and more frequent review of office referrals to identify students in need of additional supports.

FBA

FBA involves the collection of objective data to develop hypotheses about environment–behavior relations. The FBA process (at minimum interviews and direct observations) and the outcomes of the assessment should be documented so that teams can refer to assessment results to

make intervention changes as needed. Although many school teams rely primarily or exclusively on interviews or rating scales to develop hypotheses about behavioral function, best practice in function-based support includes the collection of objective data documenting the occurrence of problem behavior and events that reliably precede and follow the response (Drasgow, Yell, Bradley, & Shriner, 1999). The manner in which such data are collected varies depending on the severity of the challenging behavior and the complexity of the situation. Sometimes brief "ABC" observations, which involve simply recording instances of challenging behavior and events that precede and follow challenging behaviors, are sufficient. Alternatively, a structural analysis may be used. In a structural analysis, contextual variables (e.g., 1:1 instruction) hypothesized to evoke challenging behavior are arranged and the occurrence of problem behavior in the presence and absence of those contexts are recorded. Data are collected as well on consequences—the goal is to gather further evidence about contextual variables that evoke problem behavior and consequences that follow and appear dependent on problem behavior (e.g., Campbell & Anderson 2011; Martens, DiGennaro, Reed, Szcech, & Rosenthal, 2008). In some cases, such as when problem behavior occurs very frequently across multiple contexts or when other, less intensive methods of FBA have not yielded clear findings, an experimental functional analysis may be warranted.

Assessing Effects

The most common use of data within behavior support efforts is to assess outcomes. Measurement of effects of a behavior support plan on student behavior is at the heart of all effective support. Both reductions in problem behavior and increases in prosocial behavior should be monitored. Effects can be monitored in a variety of ways including teacher-completed rating scales and direct observation—we describe efficient methods for monitoring intervention effects in the next section. If a plan is effective, then a decision to sustain implementation follows. If data indicate that the plan is not effective (but is being implemented as designed), a revision of the behavior support components is in order. For students receiving behavior supports as part of special education services, the behavior support plan and individualized education plan (IEP) goals should be aligned, and progress monitoring data should be used to determine the effects of the behavior support plan, as well as progress toward IEP goals.

Fidelity of Implementation

An important but oft-overlooked use of data collection in schools is the monitoring of treatment integrity (e.g., Gable, Henderson, & Van Acker, 2001). A number of studies document that fidelity of implementation is not often monitored even in clinical or school-based research studies (e.g., McIntyre, Gresham, DiGennaro, & Reed, 2007), and it stands to reason that these data are collected even less often by school-based practitioners overseeing or implementing interventions. This is unfortunate as research suggests that even fairly simple self assessment of fidelity has positive effects on the integrity with which an intervention is implemented (Petscher & Bailey, 2006). It is important to monitor fidelity of implementation to determine whether lack of student progress might be due to poor implementation, rather than to an intervention mismatch.

THE SYSTEMS NEEDED TO SUPPORT INDIVIDUALIZED BEHAVIOR SUPPORTS IN SCHOOLS

We shift now from emphasis on the practices and data of intensive individualized supports to the systems needed to establish, implement, and sustain effective function-based support practices. The importance of considering the unique context of the system, as well as the overarching goal of improved student outcomes, cannot be overstated. This is especially true in contexts where collaboration with experts outside the system is not easily accessible, for example, in rural settings. As leadership adjusts the systems features to support student outcomes, collaborative practices to support students may be enhanced.

Organizational Commitment

A foundational systems variable is a formal commitment to educating children with problem behavior in their home schools. If the basic operating policy and procedure in a school is to identify, refer, and remove students with problem behavior, then investment in implementing function-based support practices will remain limited. The first organizational variable that affects implementation of effective, individualized behavior support practices is, thus, the extent to which administrators establish a clear policy of support for children with problem behavior. If the policy is to provide support locally, rather than labeling and placing outside the school, then all other intensive support practices become more feasible.

Personnel Practices

Selecting, training, and supporting personnel with both theoretical and practical knowledge related to behavior support is essential for effective implementation of function-based behavior support. Four core personnel practices for embracing and sustaining individualized behavior support practices focus on position announcements, participation in support planning, conducting annual orientations, and providing access to training. Leadership in

hiring practices and policies is critical here—leaders can provide guidelines and position descriptions emphasizing the skill sets needed and minimum requirements for positions across schools. In addition, schools that have limited access to support might consider incorporating technology (e.g., attending Web-based trainings, consulting using video-conference tools, online orientation materials) to facilitate communication and collaboration.

First, for key positions related to behavior support (e.g., school psychologist, behavior specialist, and counselor), hiring position announcements should state that documented knowledge and expertise in FBA and support planning is required. Administrators often are faced with the need to form individual behavior support teams but lack individuals with the technical expertise or time to implement function-based support well. A significant challenge for educational administrators who are committed to behavior support is investment in the hiring and coordination of specialists who have the time and talent to help student-focused teams build and implement the behavior supports we now know can be effective. Leadership teams need to support building administrators in this process by providing guidelines for evaluating expertise in function-based support. Skills in behavior analysis are often not apparent simply based on terminal degrees or certification; thus, a thoughtful screening process, perhaps involving interviews and reviews of applicant-guided FBAs and intervention plans, is required. It also may be helpful to present hypothetical scenarios during the interview to allow the interviewee to demonstrate fluency in FBA and support plan development.

Second, administration should set the expectation for teachers and staff to attend and participate in support planning for students in their rooms, and this could be included in teacher and staff annual evaluations. Although those most knowledgeable in FBA and support plan development will facilitate the meeting, teachers and staff should be actively involved in the creation of support plans for their students. This active participation is likely to increase teacher investment in the process and contextual fit of plan implementation (Benazzi, Horner, & Good, 2006).

Third, leadership will need to provide orientations at the beginning of each school year to orient new staff to the culture of the district and school. Separate orientations likely will be necessary for different positions such as administrators, teachers, school psychologists, etc. Orientation should emphasize policy with regard to supporting all students and should articulate the role individuals in that position play in ensuring policy is followed. In addition to orienting new staff, leadership should plan to incorporate updates and reviews for all staff. The importance of FBA in guiding intervention development should be emphasized to ensure the focus remains on assessment linked to intervention, rather than assessment for the sole purpose of identification or diagnosis and placement.

Finally, administrators and staff should be provided the opportunity to attend high-quality training on FBA and support planning. To facilitate attendance and participation, administrators will need to (a) locate trainers with expertise in school-based FBA and team-based support planning, (b) provide a mechanism for attendance such as payment for attending after school training or securing substitutes, and (c) secure post-training coaching for all attendees to increase the likelihood that skills learned in training will be transferred into the school setting. Of course, training via workshops and didactic instruction alone is unlikely to produce meaningful outcomes. Thus, schools should be sure trainers can provide follow-up, on-site coaching and technical assistance to facilitate skill acquisition. The nature of the support may vary greatly depending on the context of the school and the proximity to high-quality resources (e.g., universities and training centers), and technology may be used in some cases to provide ongoing support for practices in contexts where collaboration is not easily available. For example, school personnel could participate in online discussion boards or Web-based video conferences for follow-up support.

Identification of Students in Need

For teachers to feel supported when working with students exhibiting behavioral challenges, schools need to provide a mechanism by which teachers can request and receive assistance in a timely manner. A "request for assistance" system includes forms that allow teachers to formally document a student need, for example, by recording key information such as the behaviors of concern and the routines within which problem behavior does and does not occur (O'Neill et al., 1997). To facilitate rapid assistance, someone with behavioral expertise in the school should review forms at least weekly and make preliminary decisions regarding whether the student might benefit from participating in an existing Tier II school intervention or if FBA is warranted. In addition, it is important that systems are in place to ensure students who have already been placed in Tier II interventions are progressing appropriately. If teachers request additional assistance or student data suggest a change is warranted, teachers should be included in the decision-making process with regard to intervention selection and development.

Behavior Support Team Process

All tiers of the SWPBIS approach rely on team-based decision-making. The basic assumptions are that a group of well-trained professionals provided with the right information, at the right time and with clearly defined policies will be more efficient and effective at implementing durable change (for the school or a student) than individuals acting alone. The decisions administrators

make to establish systems of effective team operation are critical. Who is on teams, how they operate, the extent to which they have access to accurate information, the extent to which the team has decision-making authority, and the regular involvement of administration affect the success of school-based teams (Newton, Horner, Algozzine, Todd, & Algozine, 2012). The implementation of intensive positive behavior support (IPBS) typically involves decisions made by three teams within a school: a school-wide "leadership team," an "intensive behavior supports team," and a "student-focused team." These teams operate with different names in different schools, but the core functions are as follows.

School-wide leadership team. Implementation of comprehensive behavior support practices requires school-wide coordination to implement the universal tier of SWPBIS, evaluate office referral patterns to guide further refinement of the universal tier, embed new programs and initiatives within the SWPBIS framework, and so on. (Horner et al., 2010; B. Walker et al., 2005). Membership on the leadership team is not determined by job title but instead is dependent on functional roles within a school. A leadership team needs a team coordinator, someone with decision-making authority (i.e., an administrator), and someone with expertise in implementing SWPBIS. Further, all staff and students should feel represented on the leadership team. Leadership teams in most schools meet monthly, and meetings are structured around action plans developed on an annual basis delineating goals, delegating responsibility for tasks, and setting timelines for meeting goals.

IPBS team. Implementation of quality interventions for students who are not responsive to universal supports requires a focus on the practices, data sources, and systems outlined in this article. In many schools, an additional school team conducts this level of coordination, although some schools find it easiest to combine these responsibilities with the responsibilities of the Leadership team, thus forming one "coordination team." Regardless, responsibilities include using data to conduct formative evaluations, identifying students who may benefit from additional supports (e.g., via assessing office referral patterns, teacher-completed requests for assistance), and monitoring students who are receiving Tier II or Tier III supports. As is true with the leadership team, membership on this team is determined by functional roles and, thus, includes a coordinator, someone with expertise in FBA, an individual who coordinates targeted interventions, a person with decision-making authority, and representatives from regular and special education. Different people may fill these roles, or in some cases one person may fill more than one role. For example, a special education teacher might both have knowledge in function-based support and represent special education in the school. Schools implementing response to intervention models for academics often have one team for both academic and social supports—the team meets weekly, focusing on academics one week and social behavior the next.

In our experience, teams usually meet on alternate weeks for about 1 h. Prior to the meeting, the team coordinator develops an agenda for the meeting and prompts members to review and summarize data to be reported at the team meeting. At each meeting, the Tiers II and III intervention coordinators provide a summary of student progress. The summary includes the total number of students on an intervention and the proportion of students meeting preset goals. For example, the Tier III coordinator might report, "There are 9 students with function-based support plans and 7 are making adequate progress towards goals." The team then spends a few minutes problem solving around students who are not making adequate progress. If a solution cannot be developed within that time, the student-focused team (described next) is asked to convene. In addition, the coordination team devotes a portion of each meeting to review office discipline referrals. The team determines a course of action for students who receive more than a predetermined number of referrals—for example students might begin a Tier II intervention.

Student-focused teams. Implementation of function-based support is an individualized process that requires participation from those who know the student well. Thus, this support generally is accomplished via a small, student-focused team. In our experience, most schools have some type of problem solving team; however, such teams are focused on determining eligibility for special education or making suggestions for interventions without the benefit of FBA. Sustained and effective implementation of function-based supports in schools requires teams consisting of someone with expertise in FBA and behavior support plans (this person generally is a member of the intensive behavior support team), any teachers and specialists who are concerned about the student, an administrator and often the student's parents. Older students and those without significant cognitive limitations may participate in this process as well. Thus, team membership is not constant but changes for each student. The FBA is conducted prior to the initial meeting of the student-focused team; thus, the initial meeting begins with a review of the hypothesis statement gleaned from the FBA. Once consensus is reached on the hypothesis statement, the team works to develop an intervention. An individual with expertise in behavior support leads intervention development as research has shown that plans developed without this expertise often are not effective (Benazzi et al., 2006). In addition to identifying components of the intervention, the student-focused team plans logistics of the intervention such as determining who will be trained in the intervention, what materials are needed to implement the intervention, and who will review the intervention with the student. The team

determines as well the desired behavioral outcomes (goal) and develops a system for progress monitoring.

Access to Behavioral Expertise

The discussion of team membership and team process emphasizes the importance of selecting team members who have the skills and time to complete assessments, including family and community input, developing comprehensive support, implementing that support with fidelity, and monitoring student progress with sufficient precision to allow ongoing adaptation. This is a daunting list. All too often behavior support fails due to administrative decisions that do not allow a team access to adequate expertise, time or support. Educators often spend a significant amount of time conducting pre-intervention assessments. This investment will pay off only if the team has access to leadership from an individual with the expertise to determine appropriate assessments and use assessment information in the construction of appropriate and effective plans of support. The expectation is that the support plan for a student will be technically consistent with the assessment information and provide the "contextual fit" that facilitates implementation of the plan in the specific social and academic context (Albin, Lucyshyn, Horner, & Flannery, 1996; Benazzi et al., 2006).

Data Systems for Decision-Making

Function-based behavior support involves adjusting educational, social and community resources to meet the unique, individual needs of a student. To achieve this goal, school teams need information. They need information to identify students in need of supports and information to guide the design of appropriate, efficient, and effective supports. They need information to assess if the support plan is being implemented, and they need regular and accurate information about the impact of supports on the social and academic progress of the student (Deno, 2005; Ysseldyke & Algozine, 2006). We described earlier how use of data for decision-making is a core feature of function-based support. The "systems" implications of the reliance on data are that administration has the obligation to (a) provide administrators, teams, teachers, and specialists with the information they need for decision-making in a form they can use and at a time that fits the decision-making process in schools and (b) build the staff development opportunities, meeting schedules, and coordination opportunities that will allow professionals in schools to use information effectively.

Often data systems are designed for decision-making at the district or state level and do not meet the core information requirements of local school decision-makers. For an information system to provide the data needed at the local level it should provide information (a) that is no more than 48 h old, (b) that is valid and reliable, (c) about school-wide patterns of problem behavior, and (d) about individual student problem behavior patterns that allows sufficient detail to define (1) what a student does, (2) where she or he engages in the problem behaviors, (3) when she or he is most likely to engage in the problem behaviors, (4) with whom problem behaviors are performed, and (5) the maintaining reinforcer.

The use of data for decision-making is a "practice" that is a core element of function-based support. The development of a data collection system that provides the right information to the right people at the right time is a "systems" feature that all too often is lacking. In addition to collecting school-level data to support decision making, intervention teams should ensure student behavior support plans are developed to document fidelity of implementation and to assess the individual social and academic outcomes addressed by the support plan. It is essential that the data collection system is not overly complex and is feasible for the setting in which it is intended to be used. For example, a data collection system to be used by a general education teacher teaching a large class of second-grade students will likely look different than a system implemented by a special educator with specialized training and a low student to teacher ratio. An example of such a data collection system is provided in the Case Study next.

CASE STUDY

The following case study is provided to illustrate the process of developing capacity at Tier III in an elementary school. This case study also illustrates an efficient method for monitoring effects of the intervention and fidelity of implementation. The district in which the school was located collaborated with Cynthia M. Anderson and Robert H. Horner to enhance building capacity in Tiers II and III of SWPBIS, and Broadview Elementary elected to take part in this process, which the district called IPBS. All data reported here were collected by educators in the school as part of their IPBS process.

Broadview Elementary School, located in the Pacific Northwest region of the United States, served 465 public school students in kindergarten through fifth grade. The school had been implementing Tier I of SWPBIS for 3 years with high fidelity as documented via the School-wide Evaluation Tool (Horner et al., 2004). To enhance capacity in function-based support, the school's counselor attended a series of three half-day workshops on function-based support during the first year of implementation. The district behavior specialist (Brianna Stiller) and Cynthia M. Anderson provided the workshops. The first workshop focused on the principles underlying FBA and on completion of FBA interviews and observations. Subsequent workshops focused on intervention development, implementation, and monitoring. The counselor was paired

with an individual with expertise in function-based support (Brianna Stiller) and, working in tandem with the expert, conducted three FBAs and built support plans in her school. During the second and third years of implementation, the counselor again attended FBA training but brought additional school-based educators with her to increase the capacity of the building in conducting function-based support. Working with the district behavior specialist and Cynthia M. Anderson and Billie Jo Rodriguez, the school developed a behavior support team (IPBS team) in Year 2 to monitor the progress of students receiving Tiers II and III supports. The IPBS team met weekly, focusing on monitoring the progress of students receiving academic supports one week and behavior supports the next. Broadview Elementary School's principal, counselor, and academic supports specialist participated in IPBS team meetings, as did a special education teacher and a regular education teacher. The team also reviewed office referrals and teacher-completed requests for assistance to identify and match students to appropriate Tier II interventions or to function-based support. The district behavior specialist, Cynthia M. Anderson, or Billie Jo Rodriguez attended all IPBS team meetings for the first year of implementation to coach the team in using data for decision-making. The implementation of the IPBS team process required a significant shift for the school personnel. Previous to the IPBS team, the school utilized a student support team process that was not necessarily data based, and instead focused on responding to the referrals in the order in which they were received by scheduling individual meetings with each referring teacher. Although the school agreed the new teaming process was more efficient and effective, challenges related to training teachers and implementing the new teaming structure had to be overcome in Year 2. For example, some teachers initially were concerned that their "voice" would not be heard or that progress monitoring would be too time consuming. To assist in addressing concerns and to facilitate ongoing training, the school's counselor (the support team leader) attended monthly district-team meetings focused on developing solutions for building-level concerns, enhancing systems for progress monitoring, and data-based decision-making. These meetings were led by the district behavior specialist and attended by Cynthia M. Anderson.

School Outcomes

Schools implementing IPBS use data to guide decision-making and we present here the data collected by the school in this regard. Schools implementing IPBS in this district assessed implementation of IPBS using the Individual Student System's Evaluation Tool (ISSET; Anderson et al., 2011). They examined effects of implementation on student behavior across the school via office discipline referral patterns. Finally, they assessed outcomes of students participating on IPBS via progress monitoring over time. With the exception of the ISSET (implemented by Cynthia M. Anderson in her role as consultant to the district), all data were collected by school staff.

To examine the school's capacity at Tier III we administered the ISSET in the spring of each year. The ISSET is completed by evaluators who are not involved with the school and involves interviewing the school's principal and Tier II and III coordinators, as well as an extensive review of permanent products including team meeting records and completed FBAs and support plans. The ISSET consists of three subscales, a Foundations subscale designed to assess a school's readiness for Tiers II and III supports, a Tier II subscale assessing the quality of implementation of Tier II supports, and a Tier III subscale assessing the quality of Tier III supports (the focus for this case). To complete the subscale, the external evaluators examine three randomly selected FBAs and accompanying support plans (if a school had < 3, then a lower score would result). The Tier III subscale consists of three parts, Assessment, Implementation, and Evaluation and Monitoring. The three items in Assessment focus on the quality of the FBAs, assessing whether target responses were operationally defined and used to develop a hypothesis about events that evoked and maintained problem behavior. A final item focused on the individuals completing the FBA, assessing whether individuals are knowledgeable about the student, the context in which problem behavior most often occurred, and function-based planning participation. The implementation section consists of six items assessing the support plans themselves. These items evaluate whether plans included components to alter the context to prevent problem, to teach and reinforce desired behavior, and to decrease reinforcement for problem behavior. Finally, the two items in Evaluation and Monitoring assessed whether the plan included a process for monitoring outcomes and fidelity of implementation.

As can be seen in the top panel of Figure 1, Broadview Elementary School's capacity for implementing Tier III supports improved following training and implementation of capacity building. The school increased capacity in both assessment and implementation in Year 1, making subsequent gains in the following years. Broadview Elementary did not show improvements in monitoring and evaluation until Year 3, and this remained a challenge for the school. This finding is similar to what we have observed in other schools; training and consultation results in increased capacity in conducting FBAs and in developing technically adequate support plans, but schools are slower to begin to monitor progress of interventions or monitor fidelity. In this school, progress monitoring was observed for about one-third of interventions evaluated in baseline and the first 2 years of implementation, but the school did not begin monitoring fidelity until Year 3 and, even then, fidelity was monitored for only one-third of all plans assessed.

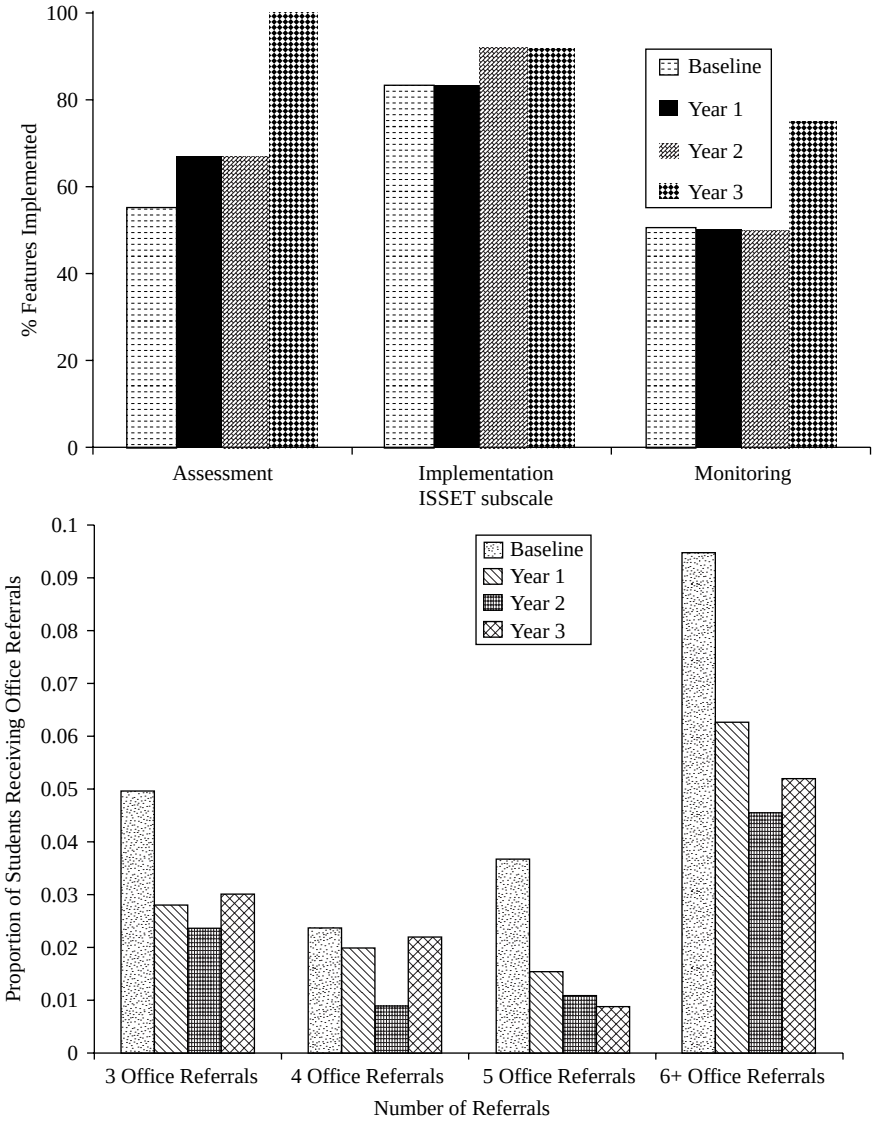

FIGURE 1 Outcomes documented for Broadview Elementary School. The top panel depicts scores on the Individual Student System's Evaluation Tool (ISSET), and the bottom panel depicts the proportion of students receiving 3, 4, 5, or 6 or more office referrals over the course of the academic year.

An important goal of function-based support is to enhance outcomes for students; however, the provision of adequate interventions should reduce the frequency with which students receive office referrals or other disciplinary actions. We examined office referral patterns to determine whether the process of building capacity at Tiers II and III affected the frequency with which students generated office referrals. Broadview Elementary School used a Web-based information system (Schoolwide Information System; May et al., 2003) to monitor office referral patterns, had defined problem behaviors in operational terms, and trained staff in identifying behaviors that should and should not result in office referrals, thus increasing the reliability of their office referral system (Irivin et al., 2006). Referral patterns from Broadview Elementary School data are depicted in the bottom panel of Figure 1. Because students receiving multiple referrals are most likely to require function-based support, we focused on patterns for students who received three or more referrals over the school year. IPBS was correlated with reductions in the proportion of students receiving multiple office referrals. Between baseline and Year 3, a 39%, 9%, 76%, and 45% reduction in the proportion of students receiving three, four, five, and six or more referrals, respectively, was noted. These reductions likely occurred because the school was able to intervene effectively more rapidly with students.

Outcomes for an Exemplar Student

Tony was a typically developing first-grade student for whom English was a second language. Tony was in general education but received Title I reading supports. At the time

of intervention, he was reading well below grade level. The school counselor requested assistance in conducting FBA after the Tier II intervention check-in/check-out was unsuccessful in addressing Tony's behavioral concerns. The district provided ongoing assistance to all schools in implementation of comprehensive supports, and the counselor attended two FBA and support-planning workshops. She was paired with Cynthia M. Anderson for coaching in FBA and support planning. The FBA and support plan were developed during Year 2 of implementation.

FBA and intervention development. A comprehensive FBA was conducted that included the FBA interview of Tony's teacher and Title I instructor and five direct observations. The FBA revealed problem behavior included disruption and noncompliance in classroom settings. Tony most often exhibited disruptive behavior in an escalating sequence. Tony typically implemented "mild" disruptive behaviors, such as tapping his pencil repeatedly or sighing loudly, and escalated to very disruptive behaviors, including banging his fist on his desk, hanging out of his chair, moving around the room, yelling, and grabbing items that belonged to other students. Tony also reportedly refused to follow teacher requests and ignored class expectations, for example by remaining seated on the floor when the expectation was to be at his desk. When milder instances of disruption occurred, Tony's teacher generally ignored them (e.g., if Tony was turned around in his chair or sitting under a desk, his teacher generally continued instruction). If Tony engaged in behavior that disrupted the learning of others, his teacher usually provided an instruction specifying what Tony should be doing (e.g., "Please sit in your chair"); although Tony briefly complied with such requests, he almost always began to emit disruptive behavior again within $<$ 1 min. If the teacher did not respond to Tony's disruptive behavior, he generally began to exhibit more intense behaviors, continuing until asked to stop. If Tony's behavior continued to escalate, his teacher often had him sit in a chair in the back of the room (the "refocus chair") until Tony indicated he was willing to work. This occurred three times during our observations. Although Tony willingly sat in the refocus chair, he never stated that he was willing to work. After varying amounts of time—4 to 8 min—Tony stood and began engaging in disruptive behavior again. When this occurred, his teacher either again prompted him to sit in the chair or sent him to the office. During the prior month, Tony had received 20 office discipline referrals and been sent home from school early 12 times. Results of observations in the classroom and in Title I (small group) reading revealed both disruption and noncompliance occurred most often in large-group instruction or when reading tasks were challenging for Tony. From the FBA we formed the following hypothesis: Difficult reading tasks or lack of frequent adult attention evoked disruptive behavior and noncompliance that were maintained by adult attention. Tony's teachers agreed with the hypothesis.

The hypothesis derived from the FBA was used to develop a comprehensive intervention. Intervention development occurred in a team meeting guided by Cynthia M. Anderson and attended by the school counselor, Tony's teachers, his mother, and the school principal. The intervention consisted of environmental redesign, reinforcement of functionally equivalent responses, and contingency manipulations. First, the team agreed to present independent reading activities only at Tony's current instructional level. When reading occurred in his classroom (at grade level), Tony was expected to listen but would no longer be asked to participate in either choral reading or individual responding. When independent reading occurred, Tony was provided with a book at his instructional level. The team also agreed to implement "demand fading" by reducing the amount of work Tony was expected to increase and then systematically increasing requirements. The FBA indicated that Tony typically would work on independent worksheets or remain seated during large-group instructions for only about 2 min before engaging in disruptive behavior. Thus, the team agreed to set an initial goal for 2 min of work. During large-group instruction, if Tony remained seated and following instructions for 2 min, his teacher or the classroom aide praised Tony briefly and continued with instruction. Tony was given two "jump up" cards he could use if he wanted to leave the group for up to 2 min at a time (interestingly, Tony never chose to use the cards). During independent work, Tony was told he had to complete two worksheet problems of his choice. He circled the problems he wanted to complete and raised his hand (functionally equivalent response) to ask the teacher for help or to check his work. After completing the problems, he could either circle two additional problems or take a 2-min break, and then return to the worksheet.

Tony's team also agreed on a systematic response for undesired behavior. If Tony engaged in disruption or noncompliance, his teacher provided a prompt specifying what Tony was to do (e.g., "Please keep your eyes on me"). If Tony followed the instruction, his teacher provided praise. If disruption or noncompliance continued, the prompt was repeated twice and, if he did not comply, was followed by a 2-min sit in the refocus chair. After 2 min, Tony was given the choice to rejoin the group or remain in the refocus chair for 2 min more (he always chose to rejoin the group). If Tony engaged in disruptive behavior in the refocus chair or engaged in disruptive behavior within 30 min after sitting in the refocus chair, he was referred to the office. The principal kept several instructional tasks in the office that Tony was required to complete before returning to class. More important, the team agreed that discussions with Tony about his behavior would no longer occur following problem behavior; instead he would simply be instructed in desired behavior and then

given the choice of whether to comply. The school counselor and Cynthia M. Anderson provided coaching and problem solving to Tony's teacher. During the first 2 weeks, this consisted of classroom observations and follow-up conversations two to three times per week. Observations were reduced to weekly and then monthly after initial implementation.

Results

The team monitored Tony's progress using the data sheet in Figure 2. The teacher estimated the percentage of time Tony exhibited quiet voice and quiet body at the end of each instructional activity (five activities in the morning and five activities in the afternoon). She also rated fidelity of implementation using the table in the bottom panel of Figure 2. If Tony received a rating of 50% or higher for quiet voice/body in the morning or afternoon, then he was permitted to go to the office to tell the receptionist and principal about his day. If he received a rating of 50% or higher for quiet voice/body for an entire day, the principal called his mother and told her about Tony's day with Tony standing next to the phone. As Tony's behavior improved, expectations for work were gradually increased until he was completing the same amount of work as his peers. Further, criterion for reinforcement was increased from ratings of 50% to 80%.

Tony's results are shown in Figure 3. As is shown in the top panel, for the week prior to intervention his teacher completed the point card based on Tony's behavior in the classroom. After the intervention was introduced, Tony's behavior quickly and dramatically improved. Further, the team was able to increase the criterion for reinforcement after 6 weeks, and Tony continued to meet the set goals. Over the remainder of the school year, his teacher gradually increased her expectations until Tony was participating in large-group instruction for the duration of the activity and was completing the same level of independent work as his peers. Tony's teacher also indicated the intervention was implemented with a high degree of fidelity throughout the remainder of the school year.

Lessons Learned

It is important to place any systems change work within the context it occurred. This particular school had a solid foundation for which to implement additional intensive supports in that they had been implementing SWPBIS with fidelity for over 5 years. Further, administration (school and district level) was highly committed to both the SWPBIS and IPBS processes. Most schools in the district were implementing SWPBIS, and the district had a PBIS coordinator. The district also had developed a plan to introduce IPBS in a few schools—including this school—and gradually build capacity across the district. Thus, there was both building-level and district-wide support for school staff. During the first year of implementation,

Day/Date: M T W TH F Date: ___/____/_____

Circle one: 1st Grade Title

Expectations	% of Time Expectations Were Met Morning	Afternoon
Quiet Voice	>5% >20 >50 >80 >100	>5% >20 >50 >80 >100
Quiet Body	>5% >20 >50 >80 >100	>5% >20 >50 >80 >100
	1 2 3 4 5	1 2 3 4 5

Time in Refocus: _____ Did he go to office? Y N

Did I implement the Plan as designed?

	Completely			Not At All
Morning	3	2	1	0
Afternoon	3	2	1	0

FIGURE 2 Tony's teachers used this data sheet to record ratings of Tony's behavior during instruction. In the top portion, his teachers rated the percentage of time Tony used a quiet voice and had a quiet body across given instructional activities in the morning and the afternoon. Teachers rated fidelity of implementation using a 4-point scale with the table in the bottom panel of the figure.

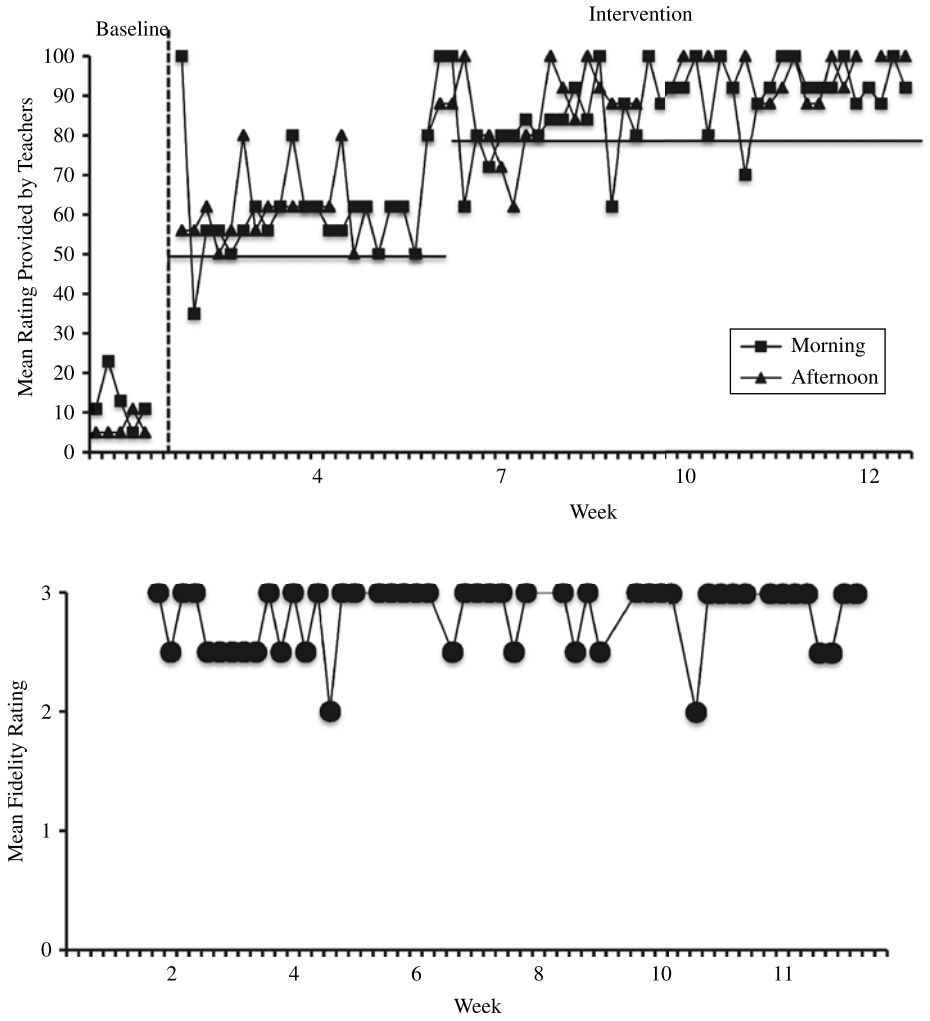

FIGURE 3 Outcomes achieved with Tony are in the top panel. Weeks are on the *x* axis, and the mean rating provided by teachers is on the *y* axis. The mean rating for morning activities is represented by the squares, and the mean rating for afternoon activities is represented by the triangles. The dashed line indicates when the intervention was introduced, and the two vertical lines indicate the criteria for reinforcement (office visits and phone calls home). Mean fidelity ratings are in the bottom panel.

enthusiasm was so high for IPBS the leadership team had to struggle a bit to maintain commitment to the Tier I system—teachers were neglecting to teach school-wide expectations, and use of the school-wide incentive system seemed to become a bit less intentional. The school leadership team had hoped to begin implementing Tier III supports in Year 1; however, most of this year was spent getting staff accustomed to a new way of requesting and receiving assistance and to developing processes to document decision-making. Full implementation of Tier III supports, including capacity to conduct high-quality FBAs, build support plans, and monitor outcomes required about 3 years.

This case study clearly illustrates that systems change is slow. For schools lacking significant support from the district or access to high-quality technical assistance, we recommend focusing on one or two small changes that will produce a large effect. First, if the school does not have a solid Tier I intervention in place, including systems for monitoring student progress, begin there. Next, implement evidence-based Tier II interventions with fidelity. These two steps alone should significantly reduce the number of students requiring intensive supports. In beginning the Tier III process, seek out highly qualified individuals with expertise supporting students similar to those in the building. For example, if most students exhibiting behavior challenges are typically developing, then be sure expertise with typically developing children in school settings is prioritized. Be sure to obtain assistance, not just in conducting FBAs and building support plans, but also in monitoring progress and making data-based decisions about student outcomes. Schools should obtain commitment from leadership to develop an ambitious but reasonable timeline with short and long term action items.

CONCLUSION

Interventions derived from FBA are well supported by the literature. There is no doubt function-based supports can have a positive and durable impact on the social and academic behavior of students. The challenge is not simply to further document the utility of function-based supports (further demonstrations of function-based supports with typically developing students will be beneficial) but, rather, an investment in delineating systems needed to allow schools to develop and sustain the capacity to implement function-based supports for all students who have not responded to less intensive interventions. This certainly will require an increase in the capacity of training programs to produce behavior analysts competent to practice applied behavior analysis in schools. In addition, however, behavior analysts can help schools develop comprehensive systems to support the implementation of function-based support. This will include developing systems for data-based decision-making, training multiple individuals to conduct FBAs, the use of evidence-based interventions matched to the intensity of student problem behavior, and the use of school teams to support staff behavior. Leadership is essential for schools implementing intensive supports and includes commitment to relevant data systems, resources and ongoing training, and ensuring that technical expertise is available in schools.

The presented model builds on the broad SWPBIS approach and requires a number of key elements be in place. Leadership committed to implementing function-based support practices should have experience implementing a Tier I intervention and commitment to this approach should be evidenced by the presence of district-provided resources for the system. As leadership prepare to implement function-based behavior supports, they will need to build capacity by ensuring that a sufficient number of faculty and staff have advanced expertise in the provision of behavioral interventions and that a schedule for ongoing professional development exists.

Our basic message is twofold. The behavioral, educational and community intervention technology exists for successfully supporting students with severe problem behavior. Often overlooked, however, is the need to define the systems administrators must establish for this technology to be applied effectively. The development of systems requires a vision, commitment and durable focus that are worthy of admiration. One of the major areas for future research, technical assistance, and program development needs to be the impact of educational and organizational "systems" on the implementation of interventions derived from the science of behavior analysis.

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