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Volume: 1

Issue: 3

Month:

Year: 2007

Pages: 165-

Article:
Functional assessment and positive support strategies; Case illustration of process and outcomes.

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Functional Assessment and Positive Support Strategies

Case Illustration of Process and Outcomes

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This article examines the effects of a proactive approach to improving social competence in young children with challenging behavior. It features the use of functional assessment and positive behavior support within an evidence-based practices framework. Two case illustrations are featured to demonstrate outcome evaluation using goal attainment ratings as a quantitative method for examining intervention effects. The case-based approach highlights the process of implementing functional assessment and positive behavior support along with progress monitoring procedures within early childhood classrooms. Both cases were found to demonstrate significant social and behavioral improvements in their social competencies as a result of the functional assessment and positive support planning process. Future directions for facilitating evidence-based approaches within early childhood classrooms are discussed along with considerations for future research.

Key Words: functional assessment, positive behavior support, evidence-based practice, collaborative teams, outcome assessment

Early Childhood Services
Volume 1, Number 3, pp. 165–179

Introduction

Envision the young child galloping around the room and kicking over chairs during transition periods; a kindergartner hitting a classroom peer when attempting to join in a game or to obtain a toy; or a youth who is socially isolated during free-choice activities. Such conduct is often referred to as "challenging behaviors" as they test the limits of even master educators and caregivers. Challenging behavior has been defined as any behavior displayed by an individual that may impede his or her learning and development or that is harmful to that individual as well as others (Chandler, Dahlquist, Repp, & Feltz, 1999). Behavioral concerns that predominantly exemplify this definition include physical and verbal aggression, disruptive behavior, negative social interaction, tantrums, and noncompliance. Challenging behaviors limit a child's ability to learn, use acquired skills, or assume a level of independence and social competence appropriate for his or her developmental level (Campbell, 1992; Sugai & Horner, 2002).

Support for managing challenging conduct has been documented as the single most common technical assistance request from teachers (Sugai & Horner, 1999) as well as the concern for which early childhood teachers report being least prepared or willing to accommodate in their classrooms (Gettinger, Stoiber, Goetz, & Caspe, 1999; Stoiber, Gettinger, & Goetz, 1998). In the study by Stoiber and her colleagues, 128 preschool teachers ranked 12 disability profiles in terms of (a) ease of accommodation, and (b) their skills to address children's needs. Children who were believed to require the greatest adaptation were those with challenging behaviors; at the same time, teachers reported being least prepared to provide services to these children. In another study by Gettinger et al., early childhood educators identified challenging behaviors as the most significant barrier to including children with disabilities in their classrooms.

Current legislation, policies, and directives within psychology and education emphasize the need for a commitment to evidence-based (or sometimes referred to as scientific-based or research-validated) practices to improve school readiness and outcomes in young children with challenging behaviors (Knowledge Utilization in Education Act, 2004; Shavelson & Towne, 2002; Stoiber & Kratochwill, 2002; Stoiber & Waas, 2002). Evidence-based practices (EBP) is a term that refers to infusing professional activities with practices proven to be effective in improving outcomes for children, youth, and/or families. Evidence-based practices are based either on (a) prior research findings, or (b) data-based decision making (Shavelson & Towne, 2002; Stoiber & Kratochwill, 2002; Stoiber, Lewis-Snyder, & Miller, 2005). That is, a teacher may implement an evidence-based practice that has been shown to produce positive outcomes based on prior research. Another way for a teacher to be an evidence-based practitioner is to employ data-based outcome assessment strategies that allow one to examine and demonstrate the effectiveness of a particular intervention approach.

At national, state, and local levels there exists concern that early childhood professionals employ practices that lack adequate empirical support, and thus may deter or drain limited resources available to foster children's healthy development. In particular, there is a need for early childhood educators to engage in practical "evidence-based" prevention and intervention practices that fit and accommodate the unique needs and circumstances of children with social and behavioral challenges (Hood, 2002; Knowledge Utilization in Education Act, 2004). Through a commitment to evidence-based practices that target young children's social competence needs, early childhood practitioners embrace unique opportunities to enhance instructional approaches and inform intervention decisions. By incorporating evidence-based practices, early childhood educators should increase the likelihood that young children's social competencies will be improved.

Evidence-based prevention and intervention efforts emphasize a new model of service delivery that includes an active decision-making component for determining educational needs and a strong evaluation component to document improved outcomes for children, especially those at risk or already diagnosed with disabilities (Conroy, Dunlap, Clarke, & Alter, 2005; Shavelson & Towne, 2002; Stoiber et al., 2005). Functional assessment fits within an evidence-based framework by providing a systematic process for identifying factors that contribute to and maintain problem behavior, as well as a sound structure for determining intervention strategies and their effects (Artesani, 2001; Ingram, Lewis-Palmer, & Sugai, 2005; Repp, 1999). By understanding the environmental, personal, and instructional factors that potentially trigger the child's challenging behavior, psychologists and educators can design intervention or positive support plans to counter such triggers and conditions. Requisite positive support elements include interventions that are (a) derived from functional assessment results, (b) developed within an ecologic perspective, (c) embedded in systemic change, (d) comprehensive in structure and scope, (e) contextually appropriate, and (f) guided by data-based decision making (Crone & Horner, 2005; Safran & Oswald, 2003; Stoiber, 2004; Sugai & Horner, 2002).

To guide the selection of intervention strategies, prior research has demonstrated benefits in including three components or types of strategies in the positive support plan (PSP) (Chandler & Dahlquist, 2002; Gettinger & Stoiber, 2006; Stoiber, 2004). The three types of strategies are those designed to (a) buffer against or eliminate setting conditions or triggers that set off the prioritized concern (*environmental strategies*), (b) develop competencies or skills that serve as alternatives to the prioritized concern (*teach competencies*), and/or (c) alter responses that have been maintaining the prioritized concern (*alternative response*). In contrast to traditional, reactive behavioral management, this proactive method extends beyond the elimination of problem behavior to the enhancement of academic and social competence, as well as the provision of contextual accommodations and enrichments necessary for successful outcomes.

Although current theory and the extant evidence base on effective intervention suggest positive support as a promising approach to accommodating challenging behavior and enriching social competence, few studies demonstrating outcomes of functional assessment are reported in the literature (Conroy et al., 2005; Ervin et al., 2001). A decade ago Horner (1994) argued that although the literature is replete with descriptions of functional assessments, little attention has been given to explicating how to use the information gleaned from the functional assessment to design effective intervention strategies. In particular, there is a paucity of studies demonstrating outcomes of functional assessment for young children with challenging behavior, especially those not identified as having a disability. In prior studies we have demonstrated the effects of functional assessment in improving child outcomes both based on classroom observational data (Gettinger & Stoiber, 2006) and teacher and parent ratings of social competence behaviors (Gettinger, Stoiber, & Koscik, in press; Stoiber & Gettinger, 2006). The specific goals of this article are (a) to illustrate the process of implementing a functional assessment, (b) to feature methodology for conducting progress monitoring and data-based decision-making within the functional assessment and positive support planning procedures, and (c) to examine outcomes linked to the use of functional assessment combined with positive support plans using a case-based approach to evidence-based practices.

Study Procedures

Collaborative teams consisted of the classroom teacher, school psychologist, and at least one additional special service provid-

er (e.g., social worker, speech and language therapist, occupational therapist). Teams were provided with professional development training by the first two authors in the use of the *Functional Assessment and Intervention System* (FAIS; Stoiber, 2004), which is an assessment leading to an intervention package that includes a referral form, interview structure, a Classroom Competence Observation Form, a structured FAIS Record Form, and a compendium of evidence-based intervention strategies. The FAIS combines a focus on (a) understanding the child's challenging behavior by addressing the underlying intent or function of that behavior, (b) designing effective interventions and positive support plans, and (c) monitoring and evaluating the effects of the positive support plan on intended outcomes. More specifically, the FAIS incorporates a five-step process to guide effective decision making:

Step 1: Identify Concern, Function, and Positive Alternative Behavior
Step 2: Set Meaningful Goal and Benchmarks Toward Goal
Step 3: Design Positive Support Plan
Step 4: Implement Positive Support Plan and Monitor Progress
Step 5: Evaluate Outcomes and Plan Next Steps.

The five steps are specified on the FAIS Record Form, which guided teams through the functional assessment and positive support planning process. Teams used the record form to document the priority concern and behavior change goal, describe positive support strategies, graph progress-monitoring data, and evaluate intervention outcomes and plan for next steps in meeting the child's needs.

Functional Assessment Procedures.

At the start of participation, each teacher completed ratings about the target child's competence by completing the Social Competence Performance Checklist (SCP Checklist; Stoiber, 2004), which is included as a screening measure and for determining the priority concern in Step 1 of the FAIS. The SCP Checklist is designed to help the team determine the primary problem that should be addressed, called the priority concern. In addition, the SCP Checklist includes positive behavior ratings so team members note that children with challenging behavior often have positive aspects that can be built upon when designing an intervention. The team hypothesized the function of the priority concern, and identified alternatives to the priority concern that would achieve the same function or payoff for the child. The collaborative team participants also received a goal and benchmark planner (Step 2) to help set goals and benchmarks or standards for assessing progress (contained in the FAIS manual). Procedures for monitoring student progress based on the established goal and benchmarks using goal attainment scaling were reviewed. Goal attainment scaling is a process in which a student's progress (or lack of progress) is scaled along a seven-point benchmark continuum, with 0 indicating baseline performance or no change. Benchmarks may be thought of as "rungs of a ladder" leading to the desired outcome. Specifically, a benchmark helps the teacher and other team members establish what, when, and how a student improves, fails to improve, or experiences negative change. If the goal is to promote a positive behavior, the benchmarks are scaled from -3 (Much Worse) to +3 (Occurs Often, Behavioral Goal Attained), with 0 indicating baseline performance. Using a seven-point scale, the following benchmark points can be used to guide the determination of benchmarks:

+3 Competent behavior occurs often; progress is better than expected; success—goal reached.

+2 Competent behavior occurs sometimes; progress is somewhat better; competent behavior somewhat developed.

+1 Competent behavior occurs rarely; progress is a little or minimally improved; represents emerging competence.

0 No apparent change or progress; consistent with typical or baseline functioning.

-1 Behavior or performance is minimally worse; slight deterioration; performance is somewhat below typical or baseline performance level.

-2 Behavior or performance is somewhat worse; progress is less than expected; performance is far below expected or typical level.

-3 Behavior or performance is much worse; progress much worse than expected; behavior is unacceptable, extremely below what is expected.

PSP Development

Once functional assessments were completed for children with targeted concerns, the collaborative team participants received instruction on characteristics of effective positive support plans (Step 3), which were described as those that (a) provide a link to the why or function of the child's challenging behavior, (b) incorporate an integrated, multicomponent set of strategies, (c) emphasize preventative and positive approaches (as opposed to reactive and negative approaches), and (d) promote the child's development of key social and academic competencies (Gettinger & Stoiber, 2006; Stoiber, 2004). Teams were provided with guidelines for developing positive support plans that integrate three types of intervention strategies: (1) Environmental; (2) Teaching Competence; and (3) Altered Response. Descriptions and examples of these three types of intervention strategies are detailed in the FAIS manual and a research-based intervention manual developed by the first two authors, titled *Happy Children Peaceful Classrooms,* which was provided to the team. In order to more efficiently and effectively select strategies having empirical support, the teacher or intervention team was directed to review environmental, teaching competence, and altered response strategies, and consider those strategies that will be minimally intrusive yet maximally effective.

PSP Implementation

Teams implemented the positive support plan over an 8- to 10-week period. The authors met with the experimental teachers within their collaborative team midway (after 4-5 weeks) to discuss intervention implementation and progress monitoring of the target child. The teacher monitored the target child's progress by rating the child based on the established Goal Attainment Scale benchmarks (Figures 1 and 2).

Case Illustrations

Two case illustrations are featured to demonstrate the application of evidence-based practices within a functional assessment framework. The primary objective of the case illustration is to provide evidence of functional assessment (FA) and positive support plans (PSP) as a promising approach to early intervention with young children from diverse cultural backgrounds.

Moreover, these cases delineate how the intervention strategies in the PSP are derived from information obtained in the functional assessment, as well as the effects of the PSP on intended child outcomes. The analyses were attained from a collaborative university-school project conducted by the first two authors to promote a

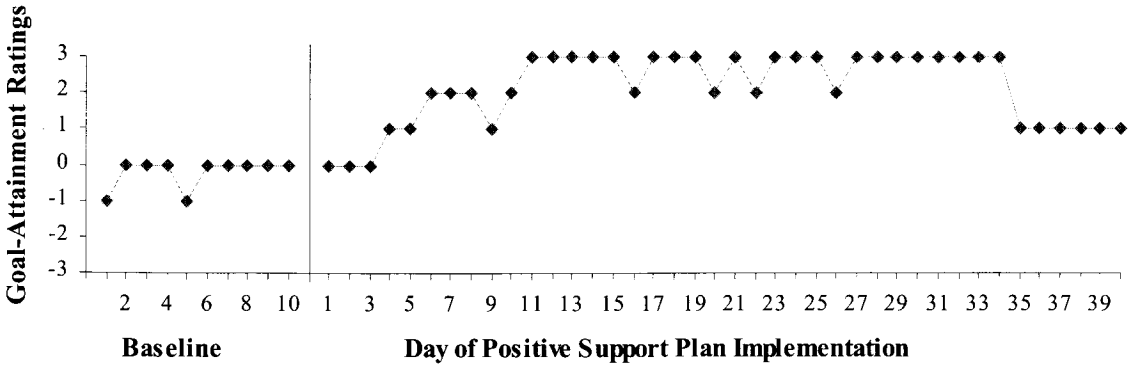

Figure 1. Mean daily goal-attainment ratings of Julian's compliant behavior using his set benchmarks during baseline and positive support plan implementation. (+3 = performance outcome goal; 0 = baseline or initial level of functioning; -3 = significant decline in social competence.)

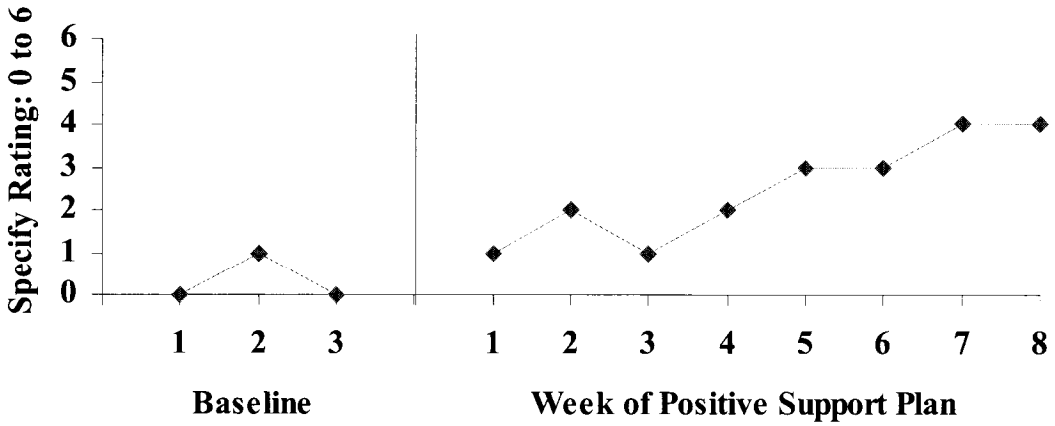

Figure 2. Mean weekly goal-attainment ratings of Scott's social interactions based on his established benchmarks during baseline and positive support plan implementation. (6 = performance outcome goal; 3 = minimal social competence evidenced; 0 = baseline or initial level of functioning.)

team-based, solution-oriented model to service delivery. As such, the cases also demonstrate the effectiveness and capability of early childhood school-based teams to employ functional assessment and positive support strategies.[1]

Participants and Setting Descriptions

Julian, a 4-year-old male of African-American heritage, was enrolled in an inclusive Pre-Kindergarten program in an urban charter school. Julian was described by his classroom

[1]Only outcomes of the functional assessments based on the goal-attainment ratings are reported in this article. Additional outcome data using rating scales and behavioral observations as well as comparison data with children not receiving FA + PSP were collected and corroborate with the positive change shown with the goal attainment ratings. These results are presented in other research publications (see Gettinger & Stoiber, 2006; Gettinger, Stoiber, & Koscik, in press; Stoiber & Gettinger, 2006), and are available upon request.

teacher as a "demanding child" who can be affectionate and has fairly adaptive problem-solving skills. His teachers reported that Julian would frequently refuse to terminate tasks upon request, and in particular would not form a line during transitions. Rather, Julian would exhibit verbal outbursts of "*no*!" and continue to engage in whatever activity he wanted to do. When reprimanded or redirected, he was observed to often either crawl under the table or run away from the teacher, or display tantrum behaviors, such as crying, yelling, and throwing objects. Although Julian often failed to comply with requests, his teachers noted on the SCP Checklist that he appeared to enjoy assisting adults.

Scott is a 5-year-old Euro-American male kindergartner who attended a suburban school district. Scott's teacher portrayed him as a "perplexing" child with a cheerful disposition. More specifically, his teachers described him as engaging in inappropriate social interactions. For example, during unstructured activities, Scott frequently would dance or run in circles in close proximity to his peers. If he approached a classmate, he often would yell "weird, disconnected" statements, such as "You ugly!," use "potty language," or nonsense words. In terms of positive behavior, his teachers noted that he delighted in manipulative construction, demonstrated appropriate adult help-seeking behavior, and generally demonstrated acceptable frustration tolerance.

Neither child was identified as having a disability or received special educational services. Assessment and intervention components were conducted within the classroom context during routine activities. The FAIS procedures, which included conducting a functional assessment, designing a positive support plan, monitoring and reviewing progress, and planning next steps, required approximately 90 to 120 minutes of collaborative team time for each child.

Functional Assessment Results

Information derived from Step 1 of the FA methods was examined to determine the conditions associated with the prioritized behavioral concerns, the consequent events potentially maintaining the challenging conduct, as well as the hypothesized functions or underlying intents or purposes of the challenging behaviors. Subsequently, the educational teams formulated a summary statement of these findings, which is guided by the framework provided in the FAIS Record Form.

The following summary statement was generated for ***Julian***:

The behavior of concern of noncompliance (i.e., refuses to engage in activity and verbal outbursts) and temper tantrums (i.e., crying and crawling under table) **(Priority Concern)** occurs in transitional settings in situations when he must terminate a preferred activity and/or an adult redirects his actions **(Contextual Conditions)**. The functions of needing to avoid tasks or events that he finds aversive and/or control the situation underlie the behavior. The student has the following competencies: an interest in others and problem-solving skills. Taking the function and these competencies into consideration, *leadership* and self-management skills will serve as the positive alternative for the concern.

The following summary statement was developed for ***Scott***:

The behavior of concern of inappropriate social interactions (e.g., "silly" behavior, such as dancing/running around peers or talking in "bizarre" language) **(Priority Concern)** occurs in free-choice settings in situations when Scott is attempting to engage in play with a group of peers and/or initiate peer interactions **(Contextual Conditions)**. The functions of needing to gain peer attention, peer affiliation, and/or communicate his needs underlie the behavior. The student has the following competencies: Cheerful disposition and successful interactions with adults. Taking the function and these competencies into consideration, peer-directed social communication skills will serve as the positive alternative for the concern.

Performance Outcome Goal

Performance outcome goals and benchmark criteria were devised as data-based indicators of intervention efficacy and goal attainment. Goal attainment scaling is an ongoing performance-based assessment in which a child's competence advancement is examined through observations and subsequent ratings of behavior according to established benchmark criteria. Goal attainment scaling has been found to be a reliable and valid methodology in consultation and intervention evaluation (Sladeczek, Elliott, Kratochwill, Robertson-Mjaanes, & Stoiber, 2001; Stoiber & Kratochwill, 2002). Benchmarks are used to evaluate and rate the child's progress toward (or away from) the goal behavior. In determining benchmarks, they may be altered along several dimensions as a way to specify progress toward a goal (Stoiber, 2004). The following dimensions should be considered when developing benchmarks:

Level of Support Needed
Example: No more than three→ two→one teacher prompt(s)

Frequency of Behavior
Example: Follows directions one→ two→three time(s) per activity, hour, or day

Severity of Behavior
Example: Rough physical aggression →mild physical aggression→verbal aggression

Difficulty of Task
Example: Completes 1 piece puzzle→3 piece separate-hole puzzle→multiple, interlocking piece puzzle

Time Allotted or Needed to Complete Task
Example: Completes worksheet within 20→15→10 minutes

Amount of Work Completed
Example: Completes 25%→50%→ 75% of task

Level of Attending
Example: Attends during 50%→ 70%→90% of circle time

There are two seven-point scaling options for defining and rating benchmarks. Benchmarks are scaled from -3 (Much Worse) to +3 (Occurs Often, Goal Attained!) when the behavior may decline. If the goal focuses on the development of a social competence and the rater is only interested in monitoring improvement toward the goal, then ratings from 0 (Baseline) to +6 (Goal Achieved) may be used. In both schemes the zero point is used to indicate the child's initial level of functioning or baseline functioning (i.e., functioning prior to the intervention). Baseline functioning is established as part of the identification of the priority concern.

Julian's outcome goal and benchmarks were scaled from -3 (Much Worse) to +3 (Occurs Often) as follows:

+3 Benchmark *(Outcome Goal Behavior)*: Within 8 weeks, Julian will comply with requests to terminate an activity and line up with peers during six of eight daily transitions, with one teacher prompt (i.e., goal achieved).

+2 Benchmark *(Somewhat Improved)*: Complies with requests to terminate activity and line up with peers during four of eight daily transitions, with two to three teacher prompts.

+1 Benchmark *(Minimally Improved)*: Complies with requests to terminate activity and line up with peers during two or three of eight daily transitions, with three to four teacher prompts.

0 Benchmark *(Baseline Behavior)*: Julian will comply with requests to terminate an activity and line

up with peers during one of eight daily transitions with five to six teacher prompts (current behavior; no progress).

-1 Benchmark *(Minimally Worse)*: Complies with requests to terminate activity and line up with peers during one of eight daily transitions, with seven to eight teacher prompts.

-2 Benchmark (*Somewhat Worse Behavior*): Complies with requests to terminate activity and lineup with peers during zero of eight daily transitions, with seven to eight teacher prompts.

-3 Benchmark *(Much Worse Behavior)*: Complies with requests to terminate an activity and line up with peers during zero of eight daily transitions as well as exhibits physical aggression (i.e., significant decline in functioning).

Scott's benchmarks were scaled along a seven-point continuum ranging from 0 (Baseline) to +6 (Goal Achieved, Much Success) using the following criteria for rating his behavior:

+6 Benchmark *(Outcome Goal Behavior)*: Scott uses adaptive peer-directed social communication skills to make social bids during free-choice periods, including (a) positive expressive language (e.g., "Can I play?") and (b) appropriate social engagement behavior (walks calmly toward classmates to initiate interaction or enter into play) during seven to eight free-choice periods per week, with one to two teacher prompts.

+5 Benchmark *(Much Improved)*: Uses positive expressive language and appropriate social engagement behavior to initiate interaction or enter into play during four to six free-choice periods per week, with one or two teacher assists.

+4 Benchmark *(Quite Improved)*: Uses positive expressive language and appropriate social engagement behavior to initiate interaction or enter into play during three to four free-choice periods per week, with two or three teacher assists.

+3 Benchmark *(Somewhat Improved)*: Uses positive expressive language and appropriate social engagement behavior to initiate interaction or enter into play during three to four free-choice periods per week, with three to five teacher prompts (i.e., some social competence evidenced).

+2 Benchmark *(A Little Improved)*: Scott uses positive expressive language and appropriate social engagement behavior to initiate interaction or enter into play during two free choice periods per week, with three to five or more teacher prompts.

+1 Benchmark *(Very Little Improved)*: Scott uses positive expressive language and appropriate social engagement behavior to initiate interaction or enter into play during one free choice periods per week, with five or more teacher prompts.

0 Benchmark *(Baseline Behavior indicating no progress)*: Scott uses positive expressive language and appropriate social interaction behavior to enter into play during zero or no free-choice periods per week, with six or more

teacher prompts and/or physically "charges into" peers three times per week.

Positive Support Plan

Comprehensive positive support plans (PSP) were developed to be implemented with Julian and Scott in their natural educational setting. The PSP incorporated three intervention components, environmental strategies, teaching modifications, and altered response strategies. Environmental modifications were devised to alter the setting event and potential triggers that "set off" the priority concern. Teaching techniques were designed to enhance social competence through the instruction of positive alternative behaviors that serve an analogous function to the challenging behavior. In developing the alternative competencies, the child's need should be met consistently and require less effort for the child to perform compared to the priority behavior of concern. Altered response techniques replace prior ineffective responses so as to promote the child's movement toward the desired outcomes or behavioral goals. Tables 1 and 2 provide the specific PSP strategies for Julian and Scott, respectively.

Outcome Evaluation and PSP Results

To evaluate Julian's and Scott's performance toward their desired outcome goals, classroom teachers were taught to use progress-monitoring procedures through applying goal-attainment scaling. Goal-attainment ratings were conducted for 8 to 10 weeks during implementation of the PSP. Progress-monitoring findings are averaged and graphed in the FAIS protocol for a visual display of progress (or failure to make prog-

Table 1. Positive Support Plan Developed for Julian

Environmental Modifications	Teaching Techniques	Altered Response Strategies
1. Provide a snack along with a fun activity with a specific adult (speech therapist) prior to the start of classroom activities. 2. A consistent schedule with preferred activities intermixed with perceived aversive tasks. 3. Reduce number of large-group transitions. 4. During transitions use adult proximity control and a peer partner with advanced social competence as a model. 5. Foreshadow expectations verbally and visually (e.g., amount of time remaining to complete activity, subsequent task components). 6. Permit/expand choices in tasks and activity partners.	1. Provision of leadership role (e.g., passing out task materials, feeding class pet) on a daily basis to enhance this positive skill and meet his hypothesized need for power and control of situations. 2. Teach self-control through the use of cues and prompts. For example, model "walking away" from potential trouble and "counting to five" to stop impulsive behavior. 3. Provide instructional assistance, sing-along task completion songs, and "joining in tasks" to lessen his avoidance of aversive situations and increase the likelihood of compliance.	1. Monitor conduct during transitions with choice of reward (e.g., computer time or special lunch with teacher and a friend) when specified criterion was attained. The monitoring instrument consisted of a sticker chart to help motivate Julian's to engage in positive alternative competencies through a visual display of his progress. 2. Limit responses by permitting his selection of one response from a menu of two or three potential, appropriate responses to meet his need for control and build upon his problem-solving strength (e.g., would you like to help put away the blocks or the crayons?) .

Table 2. Positive Support Plan Developed for Scott

Environmental Strategies	Teaching Techniques	Altered Response Strategies
1. Arrange for a small number of peers with successful social functioning to act as playtime partners with Scott during free-choice periods. 2. Modify seating at lunch by granting Scott the opportunity to select a lunchtime buddy who sits next to him during lunch. However, seat Scott at the end of the table so that he is less likely to "get in the face" of the lunchtime buddy and instruct Scott how to stay within an imaginary "bubble" so as to keep the boys within an appropriate social distance. Reward the peers who are selected as the "lunchtime buddy" to make it desirable.	1. Model how to make social bids through puppet play and other role-playing activities. 2. Guide positive social initiations and responses by prompting him with nonintrusive cues or signals (point to eyes to indicate to "make eye contact" and point to lips to indicate asking "Can you play?" 3. Implement classwide friendship activities to promote positive peer relationships and assuage current social rejection (e.g., positive reporting of positive comments made to another peer to add another building to the "friendship factory."	1. Rather than reprimanding him for inappropriate interactions, look for opportunities to provide specific, verbal praise for adaptive social interactions. 2. Apply consistent and logical consequences for aversive social interactions, such as loss of a turn to add a puzzle piece to the "friendship maze" if he hits or spits at a child during free play. 3. Resist use of "time-out" as it reduces Scott's friendship-making opportunities. Instead respond to inappropriate social interactions by sending him to the classroom "peace place" where he takes turns with the peer in talking about feelings or actions (e.g., what bugged him).

ress). A positive linear relationship indicates intervention efficacy or the development of social competence and/or the reduction of challenging behavior. In addition, the educational professionals documented their observations using qualitative narrative techniques to enrich the outcome data.

To examine differences in degree of change between baseline measurement and post-intervention, reliable change indices (RCIs) were calculated[2] for the two cases based on teacher ratings of the child's goal attainment. The RCI is interpreted similar to a z score, and is appropriate for measuring change using single-participant designs (Nunnally & Kotsche, 1983). An RCI greater than 1.96 would indicate a statistically significant change at the $p < 0.05$ level. That is, because 95% of the scores fall within 1.96 standard deviations from the mean, given a normal distribution, an RCI ≥ 1.96 is considered a statistically significant change, or a change not likely observed as the result of measurement error ($p < .05$); An RCI ≥ 2.33 corresponds to $p < .01$. Goal-attainment findings indicated that Julian appeared to manifest consistent advancement toward his behavioral goal of compliant conduct with an average benchmark rating of +2 and the attainment of the desired intervention outcome by the fourth week of PSP implementation (see Figure 1). Moreover, the goal

[2]The SCP Checklist and progress monitoring scaling can be used by teachers and teams to examine change from preintervention to postintervention using a method called the reliability change index (RCI). To calculate the RCI the following formula is used:

$$RCI = \frac{\text{(Mean Post-Test Score - Mean Pre-Test Score)}}{SE_m}$$

attainment scale results suggested a clinically significant rate of change, *RCI* = -2.33, p = .01. What this means is that the likelihood that the degree of change shown for Julian was due to chance (as opposed to being due to the implementation of the positive support plan) was less than 1 in 100.

Qualitatively, the school-based team documented the complete dissipation of Julian's previously observed anger outbursts that occurred prior to the PSP intervention. The collaborative team members who were involved in Julian's FA and PSP posited that the leadership role and individual engagement with the speech-language therapist at the onset of the school day appeared to facilitate Julian's successful functioning. A precipitous decline in goal-attainment ratings was evident during the eighth week of PSP, which corresponded to the resignation of the speech-language therapist and subsequent discontinuation of the morning breakfast and play strategy.

Successful outcomes were similarly actualized for Scott, as he attained an average performance benchmark +2 (see Figure 2). In addition, Scott's benchmark rating results intimated a clinically significant rate of change, RCI = -2.17, p = .02. Thus, in terms of the level of significance, there is only a 2 in 100 chance that the change in behavior Scott showed was due to chance. Anecdotally, the school-based team noted enhanced social relationships, as Scott received invitations to play with his classmates. In examining the reasons for Scott's progress, his collaborative team surmised that the proactive prompts for positive social interactions made by Scott as well as his involvement in friendship activities with selected socially competent peers seemed to facilitate Scott's progress.

Procedural Acceptability and Integrity

The FAIS Manual includes a procedural checklist for teams to follow while conducting the FA and implementing the PSP. Both collaborative teams accurately completed at least 95% of the components delineated in the FAIS Procedural Checklist, thus suggesting a high degree of procedural integrity. Perhaps the structure contained within the FAIS protocol enhanced fidelity, as it simply yet explicitly guides educational professionals though the FA + PSP procedures. Future research on the effects of using a structured format for conducting functional assessments versus a less structured format is needed to clarify how the FAIS Procedural Checklist influenced procedural integrity.

Overall, the procedural acceptability feedback was positive, as team members described the FA + PSP framework as a beneficial and pragmatic way to address behavioral challenges. In addition, teachers on both teams indicated the collaborative team assistance and step-by-step procedures in designing the positive support plans as major advantages of the FA + PSP process. One of the teachers described the FAIS procedures as "putting her into an automatic pilot mode" as opposed to "clunking along and getting lost" in finding solutions to children's challenging behavior. Time constraints related to finding "common" time to participate in collaborative team meetings were noted as the only concern associated with these procedures. At the end of the process, the educational personnel rated themselves as fairly to highly competent in conducting and developing subsequent support plans with children manifesting an array of challenging behavior.

Discussion

The present case studies extend extant empirical findings along several avenues. First, the case analysis provides an illustration of research to practice with findings suggesting functional assessment and positive support plans as a promising approach in improving social competencies in young children with challenging behavior. As this study was conducted entirely within the natural classroom setting, the positive results shown in the children's functioning suggest

more than their behavioral change. The results support educators' implementation of proactive and positive practices to facilitate children's successes and optimal functioning, rather than the use of reactive approaches to remediate youths' deficits and failures. In particular, the cases demonstrate the value of a comprehensive intervention plan that includes enriching and adapting the environment to promote children's healthy development. Second, although the school-based team possessed limited experiences with children with challenging behavior and no prior experience in conducting an FA, they completed at least 95% of activities or steps noted on the FAIS Record Form. The level of implementation fidelity found for our two cases indicates a high level of consistency in following the functional assessment and positive support plan procedures that they were taught and guided to use. This finding is essential, as the success of formulating a proactive and positive behavioral management philosophy within our nation's schools will depend upon educators' perceptions of the feasibility and the accurate application of such procedures. Third, favorable outcomes were actualized and maintained with the application of descriptive, practical functional assessment methods. These assessment techniques avoid intrusive disruptions to classroom routines and extensive resources to implement. Consequently, given the myriad ethical, practical, and external validity constraints associated with functional analysis (Anderson, Freeman, & Scotti, 1999; Ervin et al., 2001; Gable, 1999), such a prescribed "experimental" method may be an unnecessary component when evaluating children's performance and planning interventions, especially young children with behavioral challenges.

The current case illustrations contribute to the early intervention and the evidence-based practice literature; however, several limitations should be noted. First, although encouraging, the findings are limited to implementation of one type of functional assessment approach that explicitly links the functional assessment results to positive support intervention strategies. Also noteworthy is that the teams participated in professional development that was designed to maximize the extent to which educators implemented the FAIS steps, along with feedback and guidance by the consultants (first two authors). It would be useful to examine cases using other functional assessment procedures (see Chandler & Dahlquist, 2002; Crone & Horner, 2003), or positive support approaches that are not based on function-based assessment (see Division for Early Childhood, 1999; Fox, Dunlap, & Powell, 2002). Additional single-participant designs across child and teacher characteristics and additional randomized control studies are needed to further validate this early intervention practice. Second, the parents were not involved in the FA + PSP procedures conducted with Julian and Scott, thus precluding the generalization of effects beyond the school setting. Although their parents were invited to participate on the team, they were unable to attend the meetings due to work schedule conflicts. Obviously, our conception of positive support plans as comprehensive and as incorporating ecologic components corresponds to a philosophy that recognizes the influence of the family as an important social context within which children develop. As parents are viewed as essential partners in addressing and improving outcomes of children with challenging behavior, the lack of parents as participants in the functional assessment and intervention process was a limitation of our study. Future studies and intervention practices would likely benefit from including parents throughout this process and extending PSP implementation to the home environment.

Conclusion

This article aimed to elucidate the process of conducting functional assessments (FA) linked to positive support plans (PSP). Functional assessment is regarded as a technology that strengthens the efficiency and efficacy of interventions in that this

methodology eliminates trial-and-error approaches derived solely from the topography of the difficult conduct (Ingram et al., 2005). Moreover, FA provides a structure for PSP development that extends beyond the mere reduction of behavioral challenges to the enrichment of children's environments and competence (Gettinger & Stoiber, 2006). When incorporating outcome evaluation through the use of progress monitoring, FA + PSP procedures correspond to the guidelines and principles of evidence-based practice (EBP). This study adds to the literature by illustrating FA + PSP procedures as a promising approach to opening the door to children's academic and social success. Our findings of positive outcomes and the acceptability of its use by collaborative teams suggest that FA + PSP implementation is a beneficial approach to designing effective interventions for young children with challenging behavior.

Acknowledgments: We dedicate this article in memory of Michelle Allison Miller, who assisted greatly with the data collection and positive support plans highlighted in this study. We also thank the teacher teams that were involved in this study, and in particular, the Oconomowoc School District for its participation. This study was supported in part by the Office of Special Education and Rehabilitation Services, the Office of Special Education Programs, U.S. Department of Education, PR/Award Number H324D010019. The contents do not necessarily represent the positions or policies of the Office of Special Education and Rehabilitation Services, the Office of Special Education Programs, or the U.S. Department of Education, and endorsement by the federal government should not be assumed.

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