POSITIVE BEHAVIOURAL SUPPORT: AN EXAMPLE OF PRACTICE IN THE EARLY YEARS

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ABSTRACT

Behavioural support is a critical element of intervention with students with special needs and their families. This paper compares traditional and current approaches for dealing with problem behaviour, highlights an important shift towards antecedent control of problem behaviour, and presents an illustrative case study in positive behavioural support. A behavioural intervention in this case study succeeded in reducing tantruming behaviour by a 4-year-old girl with Williams syndrome. Three imperatives in the implementation of positive behavioural support identified in this case study are time, teaming, and training.

DEALING WITH PROBLEM BEHAVIOUR: INTRODUCTION

Dealing with problem behaviour is a crucial part of teaching students with special needs. If teachers are not competent in this area, they may spend more time reacting to problem behaviour than focusing on instruction. Not only teaching and learning are affected. Management of problem behaviour has been linked to poor teacher morale, low self-esteem, work stress, and teacher burnout (Jordan & Jones, 1999; Marozas & May, 1988; Rogers, 1992; Weigle, 1997).

It is recommended in the literature that school staff and families adopt an approach known as positive behavioural support (Horner et al., 1990; Ruef, Poston, & Humphrey, 1999). This approach is not new. Its effectiveness in reducing problems in students with special needs has been well-documented over the last 15 years (e.g., Donnellan, LaVigna, Negri-Shoultz, & Fassbender, 1988; Evans & Meyer, 1985; Hitzing, 1996; Janney & Snell, 2000; Kern Koegel, Koegel, & Dunlap, 1996; Reichle & Wacker, 1993; Scotti, & Meyer, 1999; Strain & Hemmeter, 1997; Sugai & Horner, 1994; Wheeler, 1998).

> Positive behavioral support *is a general term that refers to the application of positive interventions and systems to achieve socially important behavior change. PBS was developed initially as an alternative to aversive interventions used with students with significant disabilities who engaged in extreme forms of self-injury and aggression....More recently the technology has been applied successfully with a wide range of students, in a wide range of contexts...and extended from an intervention approach for individual students to an intervention approach for entire schools. (OSEP Center on Positive Behavioral Interventions and Supports, 2000, p. 133)*

PBS is beginning to affect the theory and practice of behaviour management. Theory development has relied on the principles of applied behaviour analysis (Schloss & Smith, 1998). Practice has relied on traditional behaviour modification (Datlow Smith, 1993). PBS has transformed this traditional conceptualisation of problem behaviour, and has redefined the strategy base for reducing problem behaviour. PBS adds a values-base to applied behavioural analysis and refocuses strategies towards

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interventions that are positive and that improve quality of life. PBS is providing a qualitatively different orientation to behaviour management, not only in segregated settings, but also in regular settings.

DEALING WITH PROBLEM BEHAVIOUR: THE PBS SHIFT

The antecedent-behaviour-consequence (ABC) model has been used widely in behavioural intervention efforts by professionals. The ABC behavioural model is important in traditional and current approaches dealing with problem behaviour. PBS features three critical changes in practice that have emerged from the ABC model. These three changes represent a technological shift from traditional application of the behaviour modification model. The fourth change represents a qualitative shift in ethos that changes the whole approach to intervention. This change enables the professional to support the person rather than control the problem behaviour.

The first critical change within PBS concerns the operationalisation of behaviour (B) in the ABC model. In the traditional application of the ABC, form defined behaviour. Practice thus emphasised full and precise description of the problem behaviour. The form of behaviour was specified in terms of a behaviour's topography (physical appearance), frequency, duration, and intensity when baseline data were collected. In PBS, form provides insufficient information for intervention planning. An hypothesis about the function of the problem behaviour (i.e., why the behaviour occurs) needs to accompany the specific description of the problem behaviour.

Communicative function is an underlying premise of PBS. In PBS, it is argued that problem behaviour serves a legitimate function (LaVigna & Donnellan, 1986) and that all problem behaviour is communicative in nature (Berotti & Durand, 1999; Carr et al., 1994; Donnellan, Mirenda, Mesaros, & Fassbender, 1984). With most problem behaviours, communication is intentional and can be interpreted by another person (i.e., a two-way process). With some problem behaviours, especially stereotypic behaviours, communication is a private event (Shore & Iwata, 1999) that cannot be interpreted as intending to communicate with another person. According to O'Neill, Horner, Albin, Storey, and Newton (1997), most behaviours communicate functions related to either getting (obtaining) or avoiding (escaping) something.

The second critical change within PBS concerns the shift in focus of intervention from consequence control (B-C) to antecedent control (A-B). Traditional approaches managed problem behaviour directly. The aim of intervention was to eliminate this behaviour from the person's repertoire when it occurred (B-C). This approach, therefore, used consequential, situational, and reactive strategies to reduce problem behaviour. These reductive strategies, including punishment, have proven effectiveness in managing some problem behaviour. Foxx (1982) categorised the B-C strategy repertoire and provided the least restrictive treatment model with three levels of procedures organised in terms of their intrusiveness, aversiveness, and severity. His model recommended implementation of procedures at the lowest level (i.e., differential reinforcement and satiation at Level 1) before considering more intrusive and aversive procedures (e.g., nonexclusionary timeout and overcorrection at Level 2). This model for selective use of aversive procedures aimed to counter the randomness of everyday practice within behaviour modification.

In PBS, consequence control is restricted to only Foxx's (1982) two positive Level 1 procedures, and this narrow focus on controlling behaviour through consequences (B-C) is broadened systematically to incorporate antecedent control. Antecedent control refers to situations, others' behaviours, environmental variables, and materials under which certain behaviours should be performed (Donnellan et al., 1988). Intervention within PBS uses the whole ABC model. It not only deals with the behaviour when it does occur (B-C), but also prioritises proactive and preventative intervention when the behaviour is not occurring (A-C).

The third critical change operates in tandem with the second change in behavioural intervention. Within the B-C component of the ABC model, the traditional approach sought rapid control of the problem behaviour by using a single, direct intervention procedure. These behavioural procedures, implemented in isolation, typically came from Foxx's least restrictive treatment model and typically involved Level 2 and 3 procedures. The PBS model attends differently to the problem behaviour: it uses more concurrent procedures (i.e., multicomponent). Some of these multicomponent procedures can be applied directly to the problem behaviour in order to either manage the situation safely or rapidly reduce the problem behaviour. When the behaviour occurs, PBS adopts neutral but direct strategies to ensure the safety of everyone involved (e.g., interrupting the behaviour chain by using feedback, active listening, introduction of an unexpected stimulus event, etc.). When the problem behaviour cannot wait for gradual improvement (e.g., some aggressive behaviour), then reinforcement-based and stimulus-based procedures are directly implemented. Most of these multicomponent procedures can be applied indirectly to reduce the problem behaviour over a period of time. When the behaviour does not occur, a number of concurrent, indirect A-B interventions are addressed. Alternatives to the problem behaviour are taught, and the environment is restructured at the same time (Lawry, Danko, & Strain, 2000). Thus, problem behaviour is reduced gradually and slowly replaced by more appropriate behaviours (i.e., a collateral effect). PBS intervention is longitudinal in nature rather than seeking to achieve an immediate solution to the problem behaviour.

These three critical shifts from the traditional model of ABC highlight the function of behaviour, the use of antecedent-based interventions, and the construction of multicomponent interventions across cycles of ABC time. In the final shift, qualitative reorganisation of theory enables these three critical shifts in practices to operate as a systematic package.

The last critical shift to the PBS approach promotes a set of person-centred beliefs concerning the individual with problem behaviour in addition to the traditional (least restrictive treatment) beliefs of the ABC model and applied behaviour analysis. Key beliefs in the traditional approach include coordination of the ABC intervention by a competent behaviour analyst and the use of more intrusive and more severe procedures as part of the right to least restrictive, effective treatment (Van Houten et al., 1988). The person-centred beliefs of PBS feature respect for the individual's dignity, promotion of capabilities, expansion of opportunities, and enhancement of lifestyle quality (Kern Koegel et al., 1996). This strong set of values is the rationale for an educative and developmental approach to intervention beyond the typical ABC model of the problem behaviour and its antecedent (A-B) and consequence (B-C) components.

DEALING WITH PROBLEM BEHAVIOUR: PBS CASE BY CASE

Dealing with every individual case of problem behaviour brings about many changes in the wake of these four shifts. PBS-based intervention invokes qualitative elements in relation to the individual, in relation to contexts, and in relation to the intervention team.

Every case of problem behaviour is approached from a unique perspective. When PBS person-centred values are fused with a strong educational and developmental emphasis, professionals are provided with many important new directions for planning intervention. Interventions acceptable for same-age peers without disabilities are used. Outcomes important to the individual are the target for intervention. Intervention honours individual preferences. Particular needs, preferences, and life circumstances shape interventions for the individual within a particular context. There are no "cookbook" solutions.

Every case of problem behaviour is evaluated in relation to lifestyle quality for the individual. Evaluation of PBS-based intervention outcomes must provide some evidence of improved lifestyle (OSEP Center on Positive Behavioral Interventions and

Supports, 2000). The view in PBS is that unmet needs typically cause problem behaviour. Communicating with others, developing friendships, participating in enjoyable activities, making choices, and having some degree of control are often missing aspects of an acceptable lifestyle. Many students with special needs exhibit problem behaviour because these aspects of quality are absent from their lives. They need to learn how to communicate, make friends, enjoy participation, make choices, and regulate some aspects of their lives.

Every case of problem behaviour involves a community of support and training. PBS is a process that calls for "bottom-up" collaboration through a sequence of assessment, analysis, planning, implementation, and evaluation. This process requires local knowledge and group problem-solving. It does not rely on highly specialised techniques or behavioural experts, but training is crucial to implementation of the process and to some specific behavioural procedures (e.g., differential reinforcement and rules for its effective use).

Application of these qualitative elements extends beyond individuals with special needs. Weinstein (1999) indicated that a paradigmatic shift towards contextual planning, respect for individuals, and self-regulation is at the forefront of regular classroom intervention for problem behaviour. Moreover, Freiberg (1999) has argued that these paradigmatic changes associated with current behavioural interventions open up a new set of opportunities for university involvement in staff training and programming, program evaluation, and innovative research-based practice (see also Johnston & Lunn, 2000). In a comparable way, PBS reframes how we think and generate solutions. It can be argued that the four PBS shifts constitute a paradigmatic reorganisation in the whole way that we deal with problem behaviour.

DEALING WITH PROBLEM BEHAVIOUR: THE PBS PROCESS

Currently, practitioners can access a rich and expanding database of effective PBS strategies in the literature and in training sessions and courses. Few PBS models, however, document the process and sequence of practice for undertaking a complete intervention from analysis to evaluation. The Institute of Applied Behavioral Analysis (IABA) model for behavioural intervention (Donnellan et al., 1988; LaVigna & Donnellan, 1986; LaVigna & Willis, 1992, 1995; LaVigna, Willis, & Donnellan, 1989) is one PBS process model that presents a comprehensive framework for dealing with problem behaviour across analysis, planning, implementation, and evaluation phases. An adapted version of this model (see Figure 1) is used within a number of Queensland specialised early intervention units and schools, and within training courses on positive behavioural support at Griffith University (Faculty of Education).

Three key practices comprise this Queensland model. They are reinforcement-based procedures, hypothesis generation about the function of behaviour, and multicomponent interventions. The PBS reconceptualisation of problem behaviours requires that practitioners new to the approach understand how these three practices alter the perspective on intervention in an interdependent way. These practices are embedded within a cycle of activities. Individual preferences for reinforcement are identified and subsequently embedded directly into consequence control procedures within a multicomponent plan. An hypothesis about why the person performs a behaviour is generated and, indirectly, it shapes the direction of the plan.

Reinforcement plays a prominent role throughout the intervention process. High-density reinforcement is essential to an effective intervention plan. Gathering of background information (see Figure 1, Phase 1) carefully determines activities and reinforcers most preferred by the child. The use of interview and survey material (e.g., O'Neill et al., 1997; Willis, LaVigna, & Donnellan, 1993) and choice assessment systems (e.g., Piazza, Fisher, Hagopian, Bowman, & Toole, 1996) facilitate the identification of functional rather than artificial reinforcers. Lohrmann-O'Rourke, Browder, and Brown (2000) recommend four guidelines to plan preference assessments: "(a) What

Figure 1. The adapted IABA process model (Beamish, 2000)

Phase 1   **Background information**

*   Nature & complexity of student's disability *   Student's health & medical status *   School history & educational focus *   Student competencies *   Student preferences *   Family history & living arrangements *   Student problem behaviours *   History of problem behaviour

Phase 2   **Functional assessment and analysis of behaviour**

*   Description of problem behaviour (baseline) *   Communication analysis *   Ecological analysis *   ABC analysis *   Hypothesis building & testing *   Cost/benefit analysis *   Ethical & policy considerations

Phase 3   **Intervention planning**

Proactive Strategies			*Reactive Strategies*
Environmental changes	Positive programming	Focused support	Situational management
Associated support programs			

Phase 4   **Intervention implementation and review**

*   Training & support *   Implementation & data collection *   Monitoring & modification *   Regular review

Phase 5   **Intervention evaluation**

*   Outcomes
    • Changes in behaviour (educational validity)
       → speed & degree of effects
       → durability of effects
    • Generalisation of effects
    • Side effects of intervention
    • Change in overall quality of life
*   Social validity of plan & programs
*   Overall intervention effectiveness
*   Future recommendations

will be offered? (b) When and where will sampling opportunities take place? (c) Who will present the sampling options? and (d) How will sampling options be presented?" (p. 42).

An hypothesis about the function of behaviour is generated within functional assessment and analysis of behaviour. In this broad-based strategy, the problem behaviour is related to the factors that cause or maintain it (see Figure 1, Phase 2). The assessment and analysis strategy allows both the form and the function of the problem behaviour to be considered (Reichle & Wacker, 1993). It typically involves (a) the precise formulation of a description of the problem behaviour; (b) a thorough analysis of influences and events, internal and external to the child; and (c) the thoughtful development and testing of an hypothesis related to the function of the behaviour serves (i.e., "Why does he/she do that?").

Sound guidelines have been provided for the completion of a functional assessment and analysis with students with special needs (Lawry et al., 2000; Neilsen, Olive, Donovan, & McEvoy, 1998). Highly recommended sources of additional information and practical programming sheets for carrying out these sequential tasks are available on the web (Gable, Quinn, Rutherford, Howell, & Hoffman, 1998) and in hard copy (O'Neill et al., 1997).

Multicomponent interventions involve planning in four simultaneous but discrete areas: (a) rearranging the environment (physical, interpersonal, and programmatic elements), (b) teaching adaptive behaviours (including a functional equivalent to the problem behaviour, communication training, and coping and tolerance skills), (c) establishing effective reinforcement- and stimulus-based procedures, and (d) providing situational management strategies for when the problem behaviour occurs (including emergency procedures). The PBS plan is divided into proactive and reactive strategy components (Figure 1, Phase 3). Student preferences determined in Phase 1 are richly embedded within this PBS plan. Moreover, the plan is shaped by the hypothesis and the unique contextual patterns revealed during analyses in Phase 2.

DEALING WITH PROBLEM BEHAVIOUR: A CASE STUDY FROM THE EARLY YEARS

Many problem behaviours emerge in the early years (Berkson & Tupa, 2000; Dodd, 1994; Porter, 1999). When communication is beginning, difficulties in dyadic interactions can lead to problem behaviours. When children with special needs are young, families and staff are faced with many complex, interrelated issues. Problem behaviours, when present, usually demand action to ensure positive paths of development and learning. Dealing with these behaviours is "core business" to families and staff engaged in early childhood intervention.

A case study provides an overview of an ongoing behavioural intervention put into place over a 9-month period (September 1999 to May 2000) in a Special Education Developmental Unit (SEDU) operated by the Queensland department of education. University staff worked with a 4-year-old girl (Poppy), her family, and SEDU staff. Two teachers and one teacher aide facilitated the program. Therapists who consult every fortnight (speech and language, occupational, and physiotherapy), a fourth year teacher education student completing a 30-day practicum (intellectual impairment specialisation), and a university lecturer in special education provided additional input. The SEDU teacher provided ongoing family support for the mother.

Poppy has Williams Syndrome, a rare condition associated with intellectual impairment. This syndrome is characterised by a number of distinctive behavioural, physiological, and psychological features (Udwin & Yule, 1999). Behavioural features may include overactivity, overfriendliness to adults, anxiety, temper tantrums, preoccupations with objects or topics, hypersensitivity to sound, fearfulness of heights or uneven surfaces, and feeding difficulties. Poppy was attending the SEDU twice a week for a total of 5 hours. Grouped with eight students of similar

age and ability, Poppy participated in a play-based program that focused on the building of communication and social skills, and on preparation for preschool. Poppy was three-and-a-half-years-old when her tantruming prompted the initiation of a structured PBS intervention.

PROBLEM BEHAVIOUR

Prior to the PBS intervention, Poppy received stickers and lollies, for example, for appropriate behaviour at the SEDU and at home. Redirection was the main strategy used when tantrums occurred at the SEDU. At home, she was placed in her room when tantrums lasted longer than 5 minutes. These strategies, applied informally and inconsistently, were not successful in reducing her problem behaviour (i.e., they were ineffective as reinforcers). Staff at the SEDU and the family considered that Poppy's tantrums at home and at the SEDU were sufficiently intense in duration (some lasting up to 20 minutes) to warrant PBS intervention. The behaviour was seen to be socially inappropriate, and its continuation had significant social implications for Poppy, especially in relation to her acceptance at preschool. The intervention followed the adapted PBS process model (see Figure 1).

Phase 1: Background information

The focus for the collection of information was key competencies, preferences, and learning needs. The teacher education student collected most of this data. She held discussions with family and staff, and reviewed SEDU files. The key competencies involved communication, social skills, functional academics, physical development, and self-care skills. Table 1 presents a summary of Poppy's key competencies in the foundation learning areas.

Preference assessment revealed that Poppy enjoyed music and got particular pleasure from participating in dance activities. She was fond of books. Puppets and toys used to tell stories captivated her attention. Poppy actively sought out adult attention. She was skilful in drawing an adult into an activity of her choice. Stickers, stamps, and lollies were identified as possible reinforcers of an artificial kind.

Three educational priorities were identified at the IEP meeting early in 1999. They were concerned with communication and independence in self-care (eating and toileting). Tantruming was discussed at this meeting, but this problem behaviour was not formally established as an IEP goal until the next IEP meeting.

Table 1. Key competencies for early development

Communication	Could verbally communicate her likes, dislikes, needs, and wants. Speech was clear and easily understood. Some receptive difficulties, especially those related to the understanding and following of directions, were evident.
Social	Enjoyed talking and interacting with people, especially adults. Was often helpful and eager to please. Analysis of free time showed parallel play and difficulties in sharing with peers.
Functional Academics	Could perform successfully a number of pre-academic activities. Could follow the sequence in picture books, name and label common colours, identify her name if written on an object, and rote count to 10.
Physical	Glasses corrected for a mild vision impairment. Physical characteristics associated with Williams Syndrome included a limited range of motion in her lower arms due to bone fusion in the forearms, elbows, and shoulders. Was unable to supernate her hands (i.e., position her palms upwards). This difficulty caused problems in free access to objects within the environment.
Self-Care	Although some prompting to go to the toilet was required, had just achieved toilet regulation. Showed early independence in the area of dressing (e.g., pulls pants up after using the toilet). Eating presented some difficulties.

Phase 2: Functional assessment and analysis

A sequenced functional assessment and analysis was conducted in order to determine the form and function of Poppy's tantrums. Tasks involved the collection of descriptive information about the problem behaviour; the completion of a communication, ecological, and ABC analysis; and the subsequent formulation and testing of an hypothesis statement.

Description of problem behavior

A description of tantruming was gained from direct observations of the behaviour across the SEDU, local child care centre, and home over a 2-week period. Five formal observations were conducted, each of 2.5 hours' duration. These data were supplemented with informal reporting from Poppy's mother and staff at both centres.

Crying, screaming, and throwing self on floor were identified as the cluster of behaviours that constituted tantruming. These behaviours typically occurred together (at times almost simultaneously) and not in a set sequence. The frequency, duration, and intensity of the separate behaviours varied greatly from episode to episode. Precise measurement of discrete behaviours within this cluster, therefore, was difficult. The data overlap method (Gable & Quinn, 1999) allowed measurement across the behaviour cluster in toto (i.e., crying, screaming, and throwing self on floor). An ABC chart (Gable et al., 1998) and anecdotal data recording (Donnellan et al., 1988) were used to collect these data across the dimensions of frequency, duration, and intensity. Table 2 presents a summary of the data on these dimensions that were gathered from the five sessions.

During some sessions, up to eight tantrums occurred. Some tantrums lasted up to 4 minutes. Variablity in intensity was the most striking feature of the behavioural cluster. Crying varied from a tear or two in the eyes to coughing and gasping for air. Screaming varied from sharp "no" to a prolonged shrill "It's mine." Throwing self on floor varied from gradual lowering to a pronounced hurl, but the final resting position was always supine (i.e., on the back).

Analyses of problem behaviour

Communication analysis. A communication schedule (Kiernan & Reid, 1987) revealed that Poppy used both conventional and unconventional forms of communication to express her needs, wants, and emotions. Crying and screaming, in particular, were identified as forms of communication.

Ecological analysis. An ecological analysis revealed that a number of physical, biological, interpersonal, and programmatic factors consistently influenced Poppy's behaviour. These factors were loud noises in the environment (physical or biological factor); bladder infections, irregular bowel motions, and constipation (physical or biological factors); teasing by male peer (interpersonal factor); unfamiliarity with an activity or routine and associated anxiety (programmatic or biological factor); and SEDU unstructured play and low density of extrinsic reinforcement (programmatic factor).

ABC analysis. The antecedent analysis revealed that tantruming was most likely to occur when Poppy could not access various things in her environment (e.g., specific toys, computer games). She also

Table 2. Data on tantruming across the dimensions of frequency, duration, and intensity

Overlapping data on tantruming crying, screaming, and throwing self on floor	Range across 5 sessions, each of 2.5 hours' duration
Frequency across SEDU, child care centre, and home	From 1 to 8 tantrums
Duration across SEDU, child care centre, and home	20 seconds to 4 minutes
Intensity across SEDU, child care centre, and home	From tears in eyes to shrill "It's mine", to coughing and gasping for air

tantrumed when significant adults paid her insufficient attention (e.g., her favourite teacher aide at the SEDU, mother when attending to the younger sibling).

Problem behaviour at the SEDU also tended to occur when Poppy participated in whole-of-group unstructured play (indoor and outdoor). It never occurred in a one-to-one situation with the preferred teacher aide. When demands, moreover, were placed on Poppy, she occasionally tantrumed. This behaviour, in the presence of demands, was more likely to occur at the SEDU and in the community and less likely to occur at home and at the child care centre.

The consequence analysis revealed that redirection (verbal, physical, or both) was frequently and effectively used across environments when tantruming occurred. Other strategies included verbal reprimand, ignoring, and timeout. When Poppy engaged in less preferred tasks, she tended to receive social attention and artificial consequences (viz., stickers and lollies). This pattern of consequence control was inconsistent, varing considerably from time to time and person to person across settings.

The teacher and teacher aide at the SEDU also completed Durand and Crimmin's (1992) Motivational Assessment Scale (MAS). Table 3 shows that Poppy's behaviour was more likely to be concerned with tangibles (e.g., obtaining a favourite toy or activity) than with adult attention, escaping from a situation, or obtaining sensory input.

Hypothesis. These data suggested that Poppy used tantruming for a number of purposes. Obtaining tangibles appeared to be its primary function. O'Neill et al. (1997) dichotomised functions into "obtaining" (social attention, tangibles, sensory feedback) and "escaping" (demand or request, activity, person). In terms of this dichotomy, Poppy's MAS points to obtaining as the major function for her tantruming. A minor element of escape is also attached to her tantruming.

Poppy typically used her tantrum to communicate that she wanted to obtain toys; she also used her tantrum to communicate that she did not wish to participate in a particular group activity. The team acknowledged that Poppy's problem behaviour had multiple functions (O'Neill et al., 1997).

Hypothesis testing. Testing the validity of the "obtain" hypothesis involved manipulation of preferred toys and adult attention. In a play situation (doll play in home corner), preferred toys were either given or withheld, and the effect on her behaviour was observed. Tantruming occurred only when the preferred toy was withheld. In a book-reading activity, withdrawal of adult attention triggered tantruming, whereas mutual engagement in storytelling appeared to increase Poppy's enjoyment.

Testing the validity of the "escape" hypothesis involved engagement with a preferred versus nonpreferred play partner or activity. Regardless of activity, one peer who consistently teased Poppy

Table 3. MAS scores from teacher and teacher aide

Staff	Scores	MAS Motivation Categories			
		Sensory	*Escape*	*Attention*	*Tangible*
Teacher	Total score	9	12	10	21
	Mean score	2.25	3	2.5	5.25
	relative ranking	4	2	3	1
Teacher Aide	Total score	0	6	7	19
	Mean score	0	1.5	1.75	4.75
	Relative ranking	4	3	2	1

Note. From "Motivation Assessment Scale", by V. M. Durand and D. Crimmins, 1992, Topeka, KS, Monaco & Associates Incorporated.

Table 3. Poppy's current PBS plan

POSITIVE BEHAVIOURAL SUPPORT PLAN

Name: Poppy   **Date:** Term 1, 2000

IEP Goal: At the SEDU, Poppy will decrease tantruming (i.e., any combination of crying, screaming, and kicking) to no more than 2 episodes per 2.5 hours session.

PROACTIVE STRATEGIES			REACTIVE STRATEGIES
Environmental Changes	**Positive Programming**	**Focused Support**	
• Place in a smaller group not including peer who teases Poppy • Intersperse preferred with nonpreferred activities • With nonpreferred tasks, Mary (teacher aide) works with Poppy or in close proximity • Increase density of reinforcement (e.g., adult talk) for appropriate behaviour and participation (approximately every 10 minutes) • Reduce duration of group activities (including structured free play) to no more than 20 minutes • Remove Poppy from the playground when loud noise is present (e.g., lawnmower) • Provide additional support when Mother indicates that Poppy is unwell (e.g., urinary infection, constipation)	• **Social skills program:** Turn-taking with peers • **Following a pictorial schedule** of the SEDU program. • **Communication program:** Picture symbol book and peer mediation		• **Gentle teaching sequence:** Ignore the behaviour, redirect Poppy to an activity (physical assistance if necessary), & reward for whatever participation • **Emergency plan** for full tantrum: If Poppy begins to cough continuously, gasp for air during a tantrum, or both, ignore the coughing and gasping. Then immediately redirect to book corner, encourage her to choose a book, and stay in close proximity. Record the incident.

triggered tantrums. Participation in short structured activities in small groups (e.g., fine-motor art and craft) did not trigger tantrums. Participation in lengthy activities in a large group (e.g., unstructured peer play in the morning) triggered tantrums. The hypotheses held across situations.

Phase 3: Intervention plan

The teacher education student and the teacher collaboratively designed the initial PBS plan based on the results of this functional assessment and

analysis. The teacher and parent agreed to incorporate the behavioural goals into the IEP at the next IEP meeting. The teacher then updated this plan after further consultation with the university lecturer. Table 3 presents the current behavioural IEP goal and the multicomponent intervention plan.

The current PBS plan was refined to fit more naturally into the daily routine at the SEDU. Some strategies (e.g., the differential reinforcement strategy within the Focused Support component of the process model

in Figure 1, Phase 3) were removed from the plan, as they were no longer warranted. Some strategies were modified, as progress was evident (e.g., the duration of group activities was extended from no more than 15 minutes to no more than 20 minutes). Moreover, some new strategies were added (e.g., rearrangement of SEDU groupings).

PBS Plan: Proactive strategies

Environmental changes. At the beginning of Term 1, 2000, Poppy was moved away from a larger group of children with developmental delays (7-8 children) that included a particular child who teased her, and into a smaller group of language-delayed children (4-5 children). This change from one class group to another provided immediate and enduring positive results: tantrums decreased from a maximum of eight tantrums per session at baseline, to a maximum of three tantrums with this accommodation.

Other environmental changes were implemented. Preferred activities were interspersed with nonpreferred activities: Nonpreferred activities were not eliminated but, initially, they were limited to those for which the teacher aide provided quality support to facilitate task completion. A rich level of positive reinforcement (on average, every 10 minutes) was provided for appropriate behaviour, participation, or both. Limits were set on duration of group activities (20 minutes or less) and size of group (five or fewer children). Strategies were provided for occasions when loud noises were present in the environment and when Poppy was not well.

Positive programming. The initial plan emphasised three skill-acquisition programs: social skill training, schedule reading, and communication. All programs were linked directly to Poppy's IEP goals. Social skilling, which taught turn-taking, and schedule reading, which improved predictability of events, were maintained but not extended in the current PBS plan. Communication training, which taught interacting with adults, enabled Poppy to obtain tangibles and attention more appropriately.

This program was extended to include peer mediation strategies. In this revised program, Poppy learned to use a book containing coloured picture symbols during structured play with two friendly peers with speech and language impairments. These children, whom she liked, were also taught to use the book. With picture symbols, Poppy learned to more readily communicate with her peers (i.e., to express her wants and, in a reciprocal manner, understand her classmates) instead of tantruming to get the same result. The program also provided the two peers with a vehicle for praising Poppy when she asked for toys, took turns, and shared. The programs of schedule reading and communication training relied extensively upon visual strategies to improve communication (Hodgdon, 1999).

PBS Plan: Reactive strategies

Two key strategies were put in place to deal with tantruming when it occurred. These strategies were used across the SEDU and home. The first strategy was the Gentle Teaching redirection strategy (McGee, 1985, McGee, Menolascino, Hobbs, & Menousek, 1987) that involved Ignore-Redirect-Reward within an assistance envelope. Gentle Teaching, which is somewhat controversial (Mudford, 1995), was already established as a procedure within the SEDU. The second strategy (crisis management) was used only when tantruming was severe (i.e., when continuous coughing and gasping for air were present). Redirection was to the book corner at the SEDU and to Poppy's bedroom at home.

Phases 4 and 5: Implementation, review, and progress

Implementation of this PBS intervention has been ongoing since October, 1999. The end-of-year break (from mid-December till the end of January) disrupted intervention at the SEDU, but rearrangement of groupings for the new year provided a kickstart for Poppy's program. In February, Poppy not only recommenced SEDU sessions, but also commenced preschool. Between February and April, tantruming at the SEDU and at home decreased on average to no more than one or two short and easily redirected tantrum per week. Tantruming was evident at the preschool. Preschool staff felt that Poppy needed time to become less anxious and more familiar with this

setting and its routines. At this early stage of Poppy's transition, they did not wish to become involved in the PBS intervention.

Training of team members (all SEDU staff and Poppy's mother) was carefully considered before the onset of this intervention in October, 1999. Initially, a formal session was conducted with SEDU staff, and the SEDU teacher informally discussed the PBS intervention with Poppy's mother. Training provided opportunity for team members to become familiar with the written plan, its support programs, specific behavioural strategies (e.g., differential reinforcement of other behaviours), and the data collection methods to be used during implementation (i.e., the "what" and the "how"). Time also was spent discussing the rationale (i.e., the "why") behind the PBS plan. This aspect of training included explaining the hypothesis and the findings from the initial direct observations of Poppy's tantrums and the ecological and ABC analyses. Moreover, early training sessions aimed to increase "shared understandings" about Poppy and the implications of Williams syndrome for her problem behaviour.

Training was not a one-off activity. It continued in an informal manner across the implementation and the periodic review of the intervention at the SEDU and at home. Ongoing training included keeping team members informed of programming changes as some strategies were faded and some strategies were introduced. Three somewhat formal reviews and one IEP meeting were conducted across the 9-month period.

Anecdotal data collection was maintained across this period. Typically, recordings were focused on the frequency of tantrums at the SEDU. Duration and intensity of tantrums, however, were noted less consistently. Weekly telephone contact between Poppy's mother and the SEDU teacher allowed reports on tantruming at the SEDU, home, and the preschool to be exchanged.

In May, when changes in staff at the preschool appeared to cause an increase in tantruming and toilet problems, the SEDU teacher shared the current PBS plan formally with these staff. Support was available if preschool staff wished to collaborate and become stakeholders in the PBS intervention. Tantruming, in the meantime, became, more frequent (but not as intense) at home and at the SEDU. Plans to further fade strategies within the current PBS plan (e.g., the intention to slowly decrease Poppy's involvement with the teacher aide) were put on hold.

DEALING WITH PROBLEM BEHAVIOUR: ISSUES AND IMPLICATIONS

To date, this PBS intervention has produced several meaningful outcomes for Poppy. Her tantruming behaviour at the SEDU and at home has reduced. Reduction in tantruming is inversely related to the emergence of new skills. New social, communication, and self-management skills are being observed within structured environments. There is evidence of improved self-esteem and motivation to expand her social networks.

The intervention, however, must continue to be dynamic. It cannot be static if Poppy is to be a successful preschooler. The intervention must be shaped in an ongoing manner to assist her to cope better with anxiety, to tolerate more nonpreferred events, to interact increasingly with peers rather than with adults, and to develop basic independence in self-care.

Poppy's progress, in the near future, will depend on a few critical issues. These issues have general applications that extend beyond this case. Time, teaming, and training have been identified as issues that sustain practice and maintain outcomes when dealing with problem behaviour. Without these three Ts, the many inputs into the PBS process will not generate the targeted outputs. Lack of attention to these issues substantially affects the PBS process, its ongoing implementation, and its sustainability, respectively.

Time for the PBS process particularly affects staff and their morale. The PBS process is time-intensive.

It requires precision and dedication to undertake the many activities across the process. During the first 9 months of Poppy's intervention, dedicated time was required to maintain and expand the comprehensive, collaborative, and data-driven PBS process. Staff needed administrative support and flexible timetabling to carry out the ongoing tasks (Council for Exceptional Children, 2000). Administrative support, not control, makes the PBS process happen.

Teaming within and across environments affects implementation. During Poppy's intervention, she transitioned from child care to preschool. Transition into this preschool setting did not succeed. Preschool staff preferred to "control" Poppy by trying to make her fit into their program rather than to "support" Poppy by fitting her PBS program into their program. That is, they attempted to employ their traditional expertise in behaviour management rather than teaming with the SEDU staff and the family on Poppy's existing PBS plan. At this preschool, Poppy began to show more and more tantruming behaviour that started to extend into the home and the SEDU. This change in Poppy precipitated a parental decision to relocate Poppy into another preschool that was willing to engage in a collaborative PBS process. A unified behavioural plan for dealing with Poppy's problem behaviour across home, SEDU, and preschool has returned Poppy to a positive learning pathway. The traditional approach attempted to control the child within a single environment. Teaming across environments to support the child makes the PBS process happen.

Training affects selection and sustainability of strategies. Over time, training brings about positive outcomes and lifestyle changes. Training of Poppy's team addressed the three key practices: how to schedule and consistently deliver positive reinforcement, why the hypothesised function was important and drove the plan, and how the plan involved many contributing components. Training is crucial because staff who regularly work with the student are key decision-makers about form and function of the behaviour and content of the intervention plan. In this bottom-up approach, this decision-making role transforms staff from data gatherers and implementers to informed programmers and evaluators. Training provides the knowledge needed to implement recommended PBS practice. Systematic exchanges between university and SEDU ensured that Poppy's intervention was based on recommended practice. University input updated resources at the SEDU and supported formal and informal training of all people involved in the process. This linking with the university avoided the research-to-practice gap, which is emerging as a major concern for PBS and the field (Ruef, Turnbull, Turnbull, & Poston, 1999; Stephenson, Linfoot, & Martin, 1999). Although the technology surrounding the PBS approach is well-researched, training makes the PBS process happen.

In dealing with problem behaviour, many practitioners are now in the process of shifting from various traditional approaches to PBS. The 3T lessons learned from Poppy's intervention may help the field to make the qualitative shift to support the person rather than control the problem behaviour.

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