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The Implementation of Best Education Practices for a Student Severely Affected by Autism

In this article, we describe an inclusive educational program for a young boy severely affected by Autism. The program is exemplary not only academically, but also in terms of what children need socially and emotionally. It represents best practices in action. Given the wide agreement about what constitutes best education practices but the lack of information about how to achieve these, we focus on the practical, systems-level interventions, including strong leadership, effective teaming, staff training, and ongoing flexibility and planning that have led to success in implementing evidence-based practices in a school setting rather than on the specifics of the child's individual program. In taking this approach, we describe overarching challenges and solutions that might contribute to the successful education of other children with an ASD. Our purpose is to share a success story, which we hope will serve as an inspiration to others.

Keywords: word; autism spectrum disorders, inclusion, evidence-based intervention, education

Introduction

A large literature has focused on practices viewed as key to the successful education of students with Autism or a related autistic spectrum disorder (ASD). Best education practices include approaches that are both preventative and supportive, such that problem behaviors are decreased and classroom engagement is increased, thus optimizing learning opportunities (Leach and Duffy 2009). Given current mandates of inclusive education, such practices are typically framed around *successful inclusion* (e.g., Iovannone et al. 2003; Harrower and Dunlap 2001; Leach and Duffy 2009; Simpson, de Boer-Ott and Smith-Myles 2003). Alternatively, best practices are framed with reference to *successful education*. Here, inclusion is viewed as one of several factors key to successful education, rather than the overarching theme of educating students with ASD.

This latter approach is taken in the New York State Autism Program Quality Indicators (APQIs) Guide (USNY 2001). Specifically, the APQIs include 14 separate factors, each with several sub-factors that are defined and graded on a 4-point scale. Similar to those outlined by "inclusion" framework proponents (e.g., Iovannone et al. 2003; Leach and Duffy 2009), these factors include individualized assessment and education

programs, structured environments, systematic instruction, and attention to transitions and family involvement. Inclusion, also assessed as a factor, is defined as “opportunities for interaction with non-disabled children incorporated into the program”. By focusing on successful education of the child using a number of parameters, including inclusion, rather than focusing on inclusion itself, the focus becomes more child-centered than method-centered.

Note also that the need for flexibility is generally viewed as central to the effective education of children with ASD (Jordan 2008). Given the wide heterogeneity in the population with ASD, claims are that no generic approach can meet the diverse educational needs of all affected children (Lord and McGee 2001). Full inclusion may not always be appropriate (e.g., Mesibov and Shea 1996), and while there may be a need for separate specialist classes or schools, we concur with Jordan (2008) that the latter should be reserved for the most severely affected students and affiliated with centers of research and treatment excellence. Best practices for those with ASD have long emphasized the importance of a continuum of support options that are highly tailored to the individual’s needs. In this context, education with peers occurs at a level that is suited to the individual child without precluding other learning goals and activities. Critically, learning goals include increasing *positive* interactions with other children, such that the child with ASD can spend increasingly more time in the regular class, as more benefits are accrued from doing so.

Particularly relevant here is how children in the regular class relate to the child with ASD. As Jordan (2008) cautions, children with ASD may be isolated in regular classes because they simply have access to other children but are not given help in developing positive relations with peers. Similarly, professionals without expertise in Autism may not be appropriate for learners with ASD, as they may lack the skills necessary to address their unique needs (Mesibov and Shea 1996). Positive relations with peers depend on knowledge and education. Indeed, in a study of classroom peer interactions among high functioning 8- to 13-year-olds with Autism, the most negative interactions were found when neither the students nor staff had any knowledge of the child’s diagnosis (Ochs et al. 2001). Conversely, the most positive interactions were observed in classes where discussion of Autism and of the child as a person were repeated over a number of sessions such that the class had a more in-depth understanding of the child’s skills, problems, likes, dislikes and so on (Ochs et al. 2001). In fact, appropriate instruction and support for children with ASD and peer education to optimize positive interactions are sub-factors included in the APQI’s parameters of inclusion.

While much has been written about best practices in educating children with ASD, surprisingly little has focused on how they can be

implemented successfully in schools and classrooms. In other words, what are the necessary conditions that make the implementation of best practices possible? For example, although collaboration between educators, other professionals and parents is commonly cited as critical in educating children with ASD (e.g., Simpson et al. 2003), virtually nothing is known about how to team to achieve a high level of collaboration (Harrower and Dunlap 2001). Similarly, the types of resources and supports required for the successful education of children with ASD in an inclusive environment are alluded to generally but not described in any concrete way. And, while most teachers surveyed have positive views regarding inclusive education of special needs children, concern is expressed about the likelihood of success without adequate resources, including a commitment from administration for funding, support staff and planning time (Bennett et al. 1997; Scruggs and Mastropieri 1996).

In this article, we describe an inclusive educational program for a young boy severely affected by Autism. With regard to the APQI criteria outlined above (USNY 2001), the program is exemplary, not only academically but also in terms of what children need socially and emotionally. The program to be described here represents best practices in action. Given the wide agreement about what constitutes best education practices but the lack of information about how to achieve these, we focus on the practical, systems-level interventions that have led to success in implementing best education practices rather than on the specifics of the child's individual program. In taking this approach, we describe overarching challenges and solutions that might contribute to the successful education of other children with an ASD. Our purpose is to share a success story, which we hope will serve as an inspiration to others.

We begin with a brief description of the direct observations made by one of us (XXX), in the context of conducting a regional review of public educational services for children and youth with ASD. With reference to the needs of the particular student to be described, we then outline the defining features of his educational program, and detail the conditions under which it was developed and the factors that contributed to its successful implementation. Finally, we provide preliminary outcome data on the child, and end by highlighting some of the lessons learned.

Direct observations of the child and his program

As I entered the Grade 3-4 classroom, I was struck immediately by two things. The first was the way the class was arranged -- two long tables were joined together lengthwise, with the children sitting side-by-side along the length of each table, and the teacher and educational assistant sitting at either end, all facing each other. Secondly, in stark contrast to what is

typically the case, particularly with more severely affected children, I had no idea who the child with Autism was. After about 5 minutes, someone finally pointed him out to me, sitting midway along one lengthwise table, working quietly, with a child on either side of him.

Against a background of blurred chatter, both between children and with their instructors, none of which appeared disruptive, all of the children were actively engaged in completing an assignment. Particularly remarkable was the simultaneous impression of focused activity and connectedness among everyone in the classroom. Indeed, after another 10 or so minutes, I witnessed something truly memorable: as the student with Autism stood up, everyone in the class took notice, turned toward him, and in unison said, “Au revoir (good-bye) M”. M was going to the learning centre for a brief (20-minute) one-to-one lesson with the educational assistant.

The learning centre, a small but extremely well organized room, had a small desk and chair, with a visual schedule adhered to the wall just above the desk. Upon entering the room, and with no assistance, M immediately checked his schedule. He then went directly to a shelf containing several small baskets, each with work that had been individualized for him. M selected one basket at a time, sat down at the desk, and over the 20-minute period, completed several tasks with the support of the educational assistant. Notable throughout was the savvy with which the educational assistant practiced errorless teaching -- quietly standing behind M, and very astutely picking up on the slightest of arm movements to the wrong answer, providing a light touch to his elbow, and gently directing him toward the correct one. Equally impressive was the variation in task requirements (e.g., from matching objects to functions, to categorizing objects, and reading words in the context of a simple story), and the well-calibrated balance between easy and difficult tasks, ensuring that M experienced lots of success and remained highly motivated. Despite his obvious awareness of me -- a stranger -- M completed all of the tasks, checking off each in turn on his schedule.

Upon returning to his classroom, M first approached his teacher, and tapped her on the shoulder, while saying, “Excuse, Madam”. In response to the teacher asking him to wait for a moment, M waited until she finished something with another student (about 2 minutes). The teacher then looked at M and smiled, welcomed him back into the classroom, and cued him to approach other students in the class. Again, what followed was truly remarkable. M approached a number of students in turn, each of whom interacted with him briefly but in a friendly and highly engaged manner, asking him simple questions, and, with kindness, correcting any incorrect responses (one of which involved gender confusion). Smiling, M, an otherwise very serious-looking child, returned to his seat, and began

working alongside his peers on another assignment -- in this case, a task in which, on separate cards, he was connecting the dots of letters that spelled the names of fellow classmates. After completing each one, the educational assistant and then M quietly said the child's name.

During the entire time that I observed M (more than an hour), there were neither behaviour problems nor any significant off-task behaviour. However, he was an integral part of the class, clearly valued by others, including his peers, and in critical ways indistinguishable from them. In the context of both his classroom and the learning centre, the approach to programming was both preventative and supportive: M's program was highly individualized; the structure provided allowed him to function largely independently; the instruction not only represented best practices (notably, capitalizing on the principles of motivation and applied behaviour analysis, with a focus on errorless teaching) but also was delivered with impressive skill. The educational assistant was vigilant, ever aware, but not hovering, thus allowing M to experience a sense of mastery and to become increasingly independent. Both she and the teacher exuded a sense of warmth and professional competence. Quite simply, what I observed in this classroom was exemplary programming and instruction. The classroom also represented one of the best lessons in citizenship I have ever witnessed.

Background

M lives in a bilingual (English and French) home in a rural community. At 3 years of age, he was diagnosed with Autism by an experienced paediatrician with expertise in ASD. Over the following two years, including 1 year in Kindergarten, M received 20 hours a week of intensive behavioural intervention (IBI) consisting primarily of discrete trial instruction, with inconsistent improvement noted. Progress may have been complicated by exposure to two languages, both in IBI (first year in English and second in French) and at home.

At age 6 years, M entered a small Grade 1-6 French school with a full inclusion model. Among the various challenges from the outset, his multi-age class, with an integrated curriculum for Grades 1-3, required children to follow directions and to work independently when higher grade-level skills were being taught -- a major problem for M. In addition, the school staff and administrators had no previous experience with Autism, nor any Autism-specific training, and, although eager to support M, had considerable trepidation. Further, while support, training and consultation were available through the Autism Consultant (MB), she spoke limited French, thus complicating not only guidance in programming, but also communication with team members more generally.

Pre-school Assessment and transition planning

With facilitation from both the School Board Consultant and the Autism Consultant, transition planning was initiated 6 months prior to school entry, and included all professionals involved in M's kindergarten IBI program. Following a review of records, a comprehensive assessment was initiated, with assessment tasks shared across all involved. This collaborative approach to assessment was deemed essential in order to provide programming continuity and to ensure that multi-disciplinary and family perspectives were considered.

Over a 6-week period, formal and informal assessments were used to identify current skills and to begin prioritizing learning needs. Everyday functioning was assessed using the Vineland Adaptive Behaviour Scales, as well as parent checklists. Speech-language and occupational therapy evaluations were completed using standardized measures when possible. IBI program staff completed the Assessment of Basic Language and Learning Skills (ABLLS). The Autism Consultant observed and informally assessed M in the kindergarten classroom. The kindergarten staff provided a summary report, noting M's skills and challenges in that setting. A video-recording was made to document M's behaviour during instruction and play, provide a baseline language sample, and demonstrate current teaching strategies. This was subsequently shared with staff and the administrators in his school. As shown in Table 1, assessment results at school entry indicated that at 6 years of age, M's age equivalent scores ranged from 10 months to 2 years, 6 months.

After the assessment was completed, a case conference was held with the IBI supervisor, the Speech-language Pathologist, Autism Consultant, School Board Consultant, Kindergarten Teacher, School Principal and family members to identify primary learning goals and make overarching decisions related to the special support M would require. This included the provision of assistance for most self care tasks, a combination of one-to-one and small group instruction, and biweekly consults from a Speech-language Pathologist (S-LP). Since M had no awareness of danger, arrangements were also made to ensure that he was adequately supervised on the bus and school playground (e.g., plans were that his sister would accompany him on the bus, the bus driver would be provided with specific information about how to communicate with M, and the School Principal volunteered to help monitor M during recess).

An Individual Education Plan (IEP) was developed and specific details of M's first weeks in school were planned in a subsequent meeting that included the school team and family. A follow-up contact with the family and the IBI program staff was made by the Autism Consultant at the end of the summer to allow for further revision to the IEP, if necessary. Prior to

school entry, orientation activities were planned for M, including practice bus rides and school and playground visits in the late summer. Staff training needs were identified and training dates set for early September.

As M entered school, he continued to demonstrate severe receptive and expressive language deficits (see Table 1). He responded to his name inconsistently and followed only a few simple directions with contextual cues. He imitated sounds and some words, and used a few single-word requests. Skill at matching pictures, colours and letters was just emerging. M protested non-verbally by pushing away materials or walking away; tantrums, bruxism and some aggression were also noted. Generally, M did not seem to be interested in others or his environment; he was dependent on others for most self-care skills, although some initial progress had been made with toilet training. His play skills were solitary and consisted primarily of repetitive manipulation of sensory materials (e.g., rice, water, and sand). Gross motor skills were a relative strength, with good coordination and strong interest in climbing. M would complete single piece puzzles, but did not use crayons or markers without help. Overall, his learning history was marked by difficulties with attention, motivation and generalization.

<Table. 1 here>

Shared vision, teaming and leadership

On the assumption that successful learning experiences for students with ASD depend on effective teaming (Simpson 2003), initial efforts focussed on identifying the shared values for guiding the team process, and the overarching goals for the child. For these purposes, it was also important to clearly define the roles and responsibilities for all involved and to establish clear lines of communication. Taking the time to do this at the beginning provided a solid framework and prevented misunderstandings. Key components of the team building process included the following:

Consensus regarding expectations about inclusion

In accordance with Provincial directives, a continuum of supports is provided to insure that students with special needs are receiving appropriate school programs and are learning together with their peers as much as possible. Although M's program was significantly modified from the grade-level curriculum, care was taken to insure that he was valued as a member of the class. The team agreed that learning opportunities were the focus rather than physical placement and that a major emphasis would be placed on increasing opportunities for social interaction. Decisions about the context for instruction (i.e., 1-1, small or large group) were made in

conjunction with the school team and the family, recognizing that M's time in class would be gradually increased, as appropriate. Initially, M spent at least half of his day with his peers (snack, lunch, recess, gym, and morning group) and received one-to-one instruction outside of the classroom distributed throughout the day. Inclusion in all projects, school trips, plays and special events, was identified as important, and often was achieved with special accommodations to support at least partial participation.

Honouring the cultural values of the family and school

Sensitivity and flexibility is required in supporting the values of students from varied socio-economic, linguistic and cultural backgrounds. In M's school, speaking anything other than French is discouraged in order to provide a good model for the children. In accordance with the family's and school's wishes, it was agreed to continue to use French as the primary teaching language. However, since the Autism Consultant and some family members were not fluent in French, accommodations we made in the spirit of compromise (e.g., meetings and training sessions were conducted primarily in English and teaching programs and reports completed by the Autism Consultant were provided in English or translated). As M became more proficient in his spoken language, the Classroom Teacher or the Educational Assistant translated *in situ* for the Autism Consultant.

School and school board leadership

In M's case, the positive attitude modelled by the School Board Consultant, Principal and Vice Principal was extraordinary and ongoing: staff knew that, when needed, they could expect support and that a respect for diversity was guiding decision-making. For example, the School Board Consultant facilitated IEP meetings, shared in the costs of purchasing curriculum materials, provided substitutes to allow staff to attend training, and funded regular S-LP services. The Principal insured that appropriate supervision was provided for M, especially during recess and lunch periods and that the physical environment was safe for him. Freeing staff for training and providing them with coverage to prepare materials or to deal effectively with problem behaviours all reflect the administration's ongoing commitment to both the teachers and students. This exemplary support and leadership from upper-level administration infused the entire system and ultimately set a high standard that all team members were both committed to and enabled to achieve.

Access to an Autism Specialist and additional support personnel

Most classroom teachers do not have the specialized knowledge and skills required to develop and support highly individualized programs appropriate for the needs of students with ASD. Teachers are often overwhelmed when the class includes several students with specialized programs, as well as a child with ASD. When problem behaviours are also present, this can quickly become an untenable situation and, at a minimum, is a recipe for significant teacher and, by implication, child stress. Access to an Autism Specialist is therefore an essential component of the “continuum of supports”. In M’s case, support and guidance was provided by an experienced Autism Consultant (MB). Critical also was the support of an Educational Assistant, who insured his safety, provided direct instruction, responded to behaviour problems and assisted with self care. Given M’s severe delays in speech and language development, the regular input of a Speech-Language Pathologist was also essential.

Effective teaming

Notably, there was regular and open communication among team members, respect for the viewpoints of all involved, and a shared commitment to evidence-based teaching procedures for M’s program. Below we detail the roles and responsibilities of core team members. We also outline the processes for training staff and peers, for developing the Individual Education Plan, including the use of visual supports, strategies for fostering independence and managing problem behaviours.

The **Teacher** worked closely with the Autism Consultant and the Educational Assistant to identify classroom activities that could directly, or with some modification, be beneficial for M. During playtime, for example, M was paired with a peer, songs were modified so that he could fill in particular words, and special non-singing roles were created for concerts. When pre-academic skills were being practiced, M was included in the group. In numerous ways, large and small, M’s teachers made sure everyone knew he was a member of the class, not a visitor. M was greeted by his peers every time he entered or left the room. When he had mastered some new skill, the class celebrated and helped him practice in the classroom. In addition, the Teacher scheduled direct teaching time with M (at least 15 minutes daily), typically when the other students were working independently, or could be supported by the Educational Assistant. Often M had mastered the tasks presented, although he needed practice with another person or set of materials for generalization. Thus, it was not essential that the teacher use a particular teaching strategy, but rather more natural language and reinforcement. The teachers felt this was a

particularly beneficial approach, and, over time, they became more confident interacting with M and realized that their own teaching strategies could be effective as well.

Initially, the **Educational Assistant** had basic knowledge of the principles and strategies of applied behaviour analysis. With ongoing coaching, she became very skilled, particularly in the implementation of errorless teaching. Once the IEP objectives had been prioritized by the team, she provided direct instruction with the guidance of the Autism Consultant and Speech-Language Pathologist, and collected data on teaching programs, self care skills and problem behaviours. The Assistant communicated daily with the Classroom Teacher and on a regular basis with the Autism Consultant and S-LP during consults and through email, as needed. In an attempt to foster independence in all settings, the Assistant used prompting and fading techniques, and she took advantage of incidental teaching opportunities to encourage language use, social and play interaction across contexts. From entry into Grade 1, snack, lunch, gym and recess were regarded as instructional opportunities rather than “down time”. First the Assistant, and later peers were paired with M during these periods to practice targeted skills. M’s Assistant is skilled at capturing and using these opportunities, and mindful of the need to reduce her assistance over time. When a peer was unsure of how to interact with M, the Assistant provided suggestions or directly modelled an appropriate response. Over time, this ongoing modelling resulted in peers who were not only classmates but also comfortable in helping M practice his language and play skills, having learned how to help without “doing for”.

The **Autism Consultant**, an experienced specialist (BCBA), has an in depth understanding of ASD and of strategies shown to be effective in teaching affected children. Her primary role was to assist in the development of the IEP, provide program guidance and monitoring, as well as staff training and coaching. While not all students require highly consistent and structured teaching methods, M’s documented learning difficulties pointed to the need for clearly defined teaching strategies, including some discrete trial instruction, natural environment teaching, a consistent approach to behavioural issues, and careful use of reinforcement to optimize progress. While his overall participation in the classroom was determined in collaboration with the Classroom Teacher, the Autism Consultant took primary responsibility for guiding programming for IEP objectives which required one-to-one instruction. Consult visits initially occurred every 2-3 weeks, usually alternating with the Speech-language Pathologist, and included classroom observations, as well as feedback and coaching during one-to-one instruction. A written summary documenting progress, program changes, and suggestions for classroom activities, was provided following each visit and was shared with all team members and

the family. In order to provide clear direction for the Teacher and Assistant, specific instructions and data for all programs were assembled in a binder, and reviewed on each visit. Critically, an emphasis was placed on instruction embedded in daily routines, as well as one-to-one programming.

The **Speech-Language Pathologist** was bilingual and provided critical input on programming and the monitoring of progress related to language and pragmatic communication objectives. During biweekly visits, she modelled specific teaching strategies for the Assistant and the Teacher and suggested how new skills could be practiced in natural settings. Summary notes on her visits were emailed to all team members following each visit. Occasionally, a joint consult with the Autism Consultant was arranged to discuss progress or new directions.

Family involvement benefits all. M's family maintained daily contact with the team through a notebook, provided information on home events that might affect M's day in school and collaborated on the IEP development. Videotapes of M's progress in school were made twice a year and shared with the family to encourage carryover of skills to the home setting.

Staff Training

Building and maintaining capacity for supporting children with ASD in inclusive settings is a significant challenge in public schools, where it is common for students to have a new teacher and/or assistant each year. All involved staff need basic knowledge about Autism and must be familiar with specific strategies that will be in use for a particular student in order to maintain some consistency. There is no agreement on the exact number of hours of training that is adequate and in many districts, training is dependent on what is allowed or funded rather than on what might be seen as essential. Given these constraints, "pull out" training is one option but not the only option for providing school staff with the skills they need.

Over the course of grades 1-4, M had three teachers, two assistants and changes in administration. The Autism Consultant provided all staff with two days of training annually in September. Training included an overview of the learning characteristics of individuals with Autism and an introduction to behavioural teaching strategies. Errorless learning and incidental teaching methods were key training components. While this provided good basic information, more practice was needed in order for the staff to become skilled at implementing these methods in the classroom. Modelling, coaching and feedback provided at each consult visit by the Autism Consultant and S-LP were key in insuring the integrity of programming. Webcasts and web-based tutorials were also made available to staff.

Unexpected staffing changes or staff absences can also have a significant impact on programming, especially when the temporary or substitute staff have limited experience with Autism. Although it was generally not feasible to offer training for short-term substitutes, the team recognized the importance of maintaining M's regular schedule and instruction as much as possible. To minimize the effect of necessary staffing changes and to provide some additional support for the substitute, a "Sub Resource Kit" was created which could be accessed, as needed.

This included a folder with M's schedule, a brief description of support needed for self care, meals, toileting, or anticipated behaviour problems and a basket of materials with mastered and/or high preference tasks. Brief teaching instructions were included on an index card with each task.

The intent was to provide appropriate practice for M, to minimize the need for a specific teaching method and to keep his schedule as predictable as possible. This information was emailed to the substitute for review ahead of time or, if needed, time was provided for review before M arrived in the morning.

Peer Training

Peers who are well informed about Autism can contribute in very positive ways to success. With consent of the family, a presentation about Autism was made annually to M's classmates. This was an opportunity for classmates to ask questions and learn about how they could be helpful friends. In Grades 1-3, the peer presentation was done by the Educational Assistant, with materials provided by the Autism Consultant. (See http://www.gov.pe.ca/photos/original/ed_autisminc.pdf for a complete description of the peer training model, resources and lesson plans). In M's small school, his classmates remained fairly constant throughout Grades 1-4, resulting in a solid base of peer knowledge about him and an acceptance of his differences that was modeled by all school staff. The peers became active "co-teachers" and learned how to keep their language simple and to encourage M to use his. Teaching of gender (Am I a boy or a girl, M?), tapping arms for attention, turn taking with games, greeting by name, lining up for transitions, filling in words in songs, and recess games were all skills M learned from his peers.

Programming

Individual Education Plan

The Individual Education Plan (IEP) provided a solid foundation for M's programming. Based on initial and ongoing assessments, an Individual Education Plan was created annually in collaboration with the school team, family, S-LP and Autism Consultant. IEP objectives were selected when they were immediately useful for M, pre-requisites for later developing skills, and/or were viewed as priorities by the family. In addition, skills that would increase M's participation in daily school routines with his peers were viewed as key. IEP objectives to build independence in work, play, and personal care were also considered to be essential and were included in the IEP each year. With this in mind, learning to ride a bike or greet peers, brush teeth or line up for recess were seen as important, along with pre-academic skills and language concepts. Functional communication was targeted to replace problem behaviours. It was agreed that behavioural teaching strategies shown to be effective for individuals with Autism would form the basis of intervention, with the principles of errorless teaching as the cornerstone practice. Once priorities were agreed upon, the Autism Consultant assisted the team in writing objectives that were clear and measurable.

The IEP was viewed not just as "required paperwork", but as a work in progress and was referred to frequently. Formal IEP review meetings occurred in the fall and spring, based on school board policy; however, progress on the objectives was monitored regularly by the Classroom Teacher, Educational Assistant, Speech-language Pathologist and Autism Consultant.

Note further that the IEP review process was considered an opportunity to celebrate gains, and also to look critically at priorities which changed over time. IEP objectives that were not achieved were not automatically "carried over" to the next IEP unless a different teaching method was proposed, with potential for more success. Specifically, the responsibility for progress rested with the team identifying strategies that might overcome learning challenges (versus continuing to work on the same skill in the same way). For example, when M had difficulty learning number concepts using manipulatives, a method of touch counting with visual cues was more successful. Later a number to quantity matching program increased his learning rate in this area. When fine motor delays made printing difficult, keyboarding skills were taught and learned much more quickly. Thus, the IEP was a dynamic document that guided programming and was the result of thoughtful input from the whole team.

Schedule and visual supports

Many students with ASD benefit from a schedule to provide information about daily routines, as well as unexpected changes. Often an individualized schedule will differ for some periods of the day from the regular classroom schedule, especially if therapy or special instruction occurs outside the classroom. Creating an individualized student schedule which supports learning requires close collaboration and regular review. When adequate attention is paid to this underlying framework, the skills targeted in the IEP can be more easily embedded in various instructional contexts and monitored for change over time.

As M entered Grade 1, the Autism Consultant, Teacher and Assistant created the first schedule together to provide a sample. Beginning with the basic classroom schedule, all time periods when M would participate in the regular classroom activities were identified. Time periods for one-to-one or small group instruction were added to the schedule next, and staff and/or peers were identified who would support him during each time period. The goal was to create a tight schedule with no down (e.g. non-instructional) time so that the entire day reflected a combination of teaching specific skills and practicing them in the context of daily routines. A balance was sought between active and more passive tasks, preferred and less preferred tasks, independent work and supported task completion. When it was not clear how well M might benefit from a specific activity, he was first included and observed prior to a decision. For example, although M tended to be very distracted and agitated when there was increased noise, but after a few days, he was able to tolerate the cafeteria environment and there was no need to have him eat in a quieter space. The initial schedule was implemented for two to three weeks, revised as needed, and then shared with all staff and the family. Finally, a clipboard schedule was created for M using picture symbols which reflected his current level of understanding. Since school schedules often have unpredictable changes and special events, a change symbol was also included. Instruction in schedule use was embedded throughout the day and M was able to use the schedule independently for the full day by the end of Grade 1.

Independence

Each year, it was a family and school priority that M become as independent as possible in his play, learning, and self care. M easily became reliant on assistance from others and had difficulty demonstrating skills across materials and environments. To address these needs, three specific strategies were modelled for staff and used with M throughout the Grade 1-4 years.

Programming for generalization was utilized in a systematic way with all targeted skills. Initial discrimination was taught during one-to-one lessons across several materials, then practiced in the classroom with the Assistant, then with the Teacher and with peers. For example, M learned to identify family members in pictures and to respond to related questions. Once he had mastered this, his peers were proud to give him an opportunity to answer those questions in class or when they greeted him in the hallway.

For tasks that involved several steps (e.g., shoe tying, tooth brushing, putting on a jacket), *a written task analysis and modelling* were provided for the Assistant so that she could be systematic in fading prompts over time. Although some of these skills were acquired very slowly, the Assistant was very vigilant, and, despite particular delays in fine motor skills, M learned to tie his shoes independently at the end of Grade 4.

To teach M to complete a series of tasks independently, an *Independent Activity Schedule* (McClannahan and Krantz 2010) was used. This strategy teaches the learner to follow pictures or symbols to complete a sequence of activities. Once the system is learned, other opportunities can be explored to encourage similar independence in other settings. M was introduced to an Activity Schedule first in kindergarten and continuing in Grade 1. Tasks included play skills, as well as fine motor, pre-writing, and later, reading activities. The tasks were varied frequently to help M remain interested; tangible reinforcers were rarely needed for this work. Once he was successful completing up to four tasks independently, a new activity schedule was introduced in the classroom. M is now able to complete a wide variety of tasks for up to 25 minutes in both the classroom and the one-to-one lesson room.

Problem Behaviour

In a public school setting, severe behaviour problems, such as aggression, self injury, disruptive or destructive behaviours, are major concerns and are often cited as the primary reason for student suspension or a change in placement to a more restrictive setting (Weigle 1997; Skiba 2002; Petras et al. 2011). Traditional school discipline practices are often ineffective in ameliorating behaviour problems in children with ASD, and may, in fact, result in increased occurrences. When faced with these challenges, the teamwork, administrative leadership and guidance described above are critical.

During his first four years of school, M demonstrated behaviours (i.e., tantrums, aggression, loud vocalizations, inappropriate touching and repetitive laughing) that interfered with his and others' learning. As he became more proficient in requesting a break, choice-making, and asking for help, the behaviours gradually decreased in frequency. If the behaviour

became more frequent, or presented safety concerns, school administration, the family, and the Autism Consultant were informed, and a date was set for an observation by the Consultant. In the interim, data were collected on the behaviour at school (and home, if applicable), and the team agreed about how to respond to the behaviour, so that everyone was consistent until a more comprehensive Behaviour Support Plan (BSP) could be developed. Finally, a team meeting was arranged to review all available data on the behaviour, including the direct observations made by the Consultant, and to attain team consensus on the function of the behaviour. This descriptive functional assessment process played a central role in the development of BSPs. To optimize efficiency and effectiveness in addressing behaviour problems, the development and implementation of BSPs, included the following:

- Care was taken to ensure that all components of the BSP were a “good fit” for the school, that is, that staff recognized the need for the plan and had the appropriate knowledge and training to carry out the intervention steps. In addition, the specific strategies selected had to be acceptable to those in that particular school environment. In M’s case, the response of uninvolved visitors, staff, and peers was also a consideration, as was the proximity of preschool children in a day care classroom immediately adjacent to M’s one-to-one lesson room. Peers and other staff in the school were made aware of the plan and its rationale. Staff were also informed about when their help might be needed and how this would be communicated. A proactive approach to explaining behaviour and planned supports was particularly important for younger classmates, who otherwise might become fearful. If M became disruptive in the classroom, this was explained to classmates in terms of his Autism and what would help him calm himself.
- The Autism Consultant and administration were aware of current School Board practices and policies, especially regarding the use of time out, safety, and emergency measures and the availability of staff training in Non-Violent Crisis Intervention. As staff changed each year, this training was offered annually.
- While the Autism Consultant facilitated the creation of the Behaviour Support Plan, all team members and the family had a clear understanding of the components and agreed to carry them out until the team decided differently. Everyone involved had an opportunity to review and discuss the written plan before implementation. Once the plan was initiated, data collected were faxed to the Autism Consultant on a weekly basis for review, with follow-up consults as needed.

- When problem behaviours occurred, the Autism Consultant used these opportunities to “translate” theory into practice to help build an understanding of evidence-based practice. Staff gradually became particularly skilled in understanding and recognizing the functions of behaviour and planning their responses accordingly.
- Given the time requirements for staff involvement, comprehensive BSPs were reserved for more severe or disruptive behaviour problems; otherwise, “good behavioural hygiene” was often effective. For example, when problem behaviours resurfaced, or when M was mildly noncompliant during lessons, the first step was to ignore and redirect, increase choice-making opportunities and increase and/or vary reinforcement, typically with success.

Data collection

In order to measure the effectiveness of the teaching strategies used with M and to monitor his progress, objective information was sought. In inclusive school settings, it is often difficult for staff to record data, keep materials organized, and focus on the student, as well as the rest of the class in the teaching /learning process. It was essential to identify practical, accurate, and efficient ways for this to occur, while keeping the focus on teaching. On M’s team, the Assistant was the primary person responsible for collecting data. For some skills that were learned more slowly, data were collected less frequently but consistently. For example, weekly rather than daily prompt data were requested for tooth brushing and shoe tying. Biweekly independent work samples were used to document progress with writing, drawing and cutting. At times, more data were needed in the beginning stages of teaching and could be decreased over time. For example, initially data were collected during every opportunity for practicing the Independent Activity Schedule. Once M was more familiar with the system, data were collected only weekly or when new tasks were introduced. Probe (versus trial by trial) data was the primary method used to monitor language and/or pre-academic concepts, since only a single trial was required prior to teaching. Once the mastery criterion was reached, the Consultant or S-LP collected more detailed data during a consult visit to confirm progress and generalization. When collecting data on problematic behaviour, a sample during high likelihood activities or time periods was frequently used rather than monitoring across time or over a longer time period.

When data are required, it is important to discuss with involved staff what level of data collection will be possible without interfering with ongoing instruction. Most importantly, it was essential for staff to see that

the data were actually used for ongoing monitoring of progress. While this seems obvious, it is clear that continuing to collect accurate data requires persistence and patience from staff, and seeing that their work is respected and useful can help them remain motivated.

Lessons learned

In M's Grade 5 year, a bilingual Autism Consultant assumed responsibility for guiding his program with a new Classroom Teacher and the same Assistant. Although he continues to need a modified program, his instructional time with peers is approximately 2/3 of the day. His progress is slow but steady. While there are occasional inappropriate behaviours, the team continues to respond in ways that have effectively decreased these behaviours in the past, with good success. His classmates have been a wonderful help to him, patient and caring. The persistence of his family, and the whole team, all sharing a common vision for M, has made a huge difference, as has

- strong school and school board leadership;
- key support staff who are well trained in evidence-based methods of teaching and addressing problem behaviours;
- effective (respectful) teaming, with clear roles, responsibilities, and lines of communication for all involved; and
- true inclusion, that is, the provision of opportunities for positive interactions with others, active participation in regular classroom activities and successful learning for the child with special needs

The story does not end here. Each year, the situation for M will be different, as both he and his school environment change. Inclusion is a journey that requires flexibility, *ongoing* careful planning and a commitment to successful education, not just a physical location for instruction. Leadership and collaboration at all levels, including department, school board, school, and family must be present to remove barriers and provide a continuum of supports based on the child's assessed needs. While we do not assume that the experience for M will mirror the needs of all students with Autism, the key components outlined here may be important to consider. Evidence-based behavioural strategies can be used effectively in school settings but may need translation to achieve "goodness of fit". With knowledgeable leadership and a willing, flexible and collaborative team, much can be accomplished to create supportive learning environments for children with Autism in inclusive settings.

References

- Bennett, T., D. Deluca, and D. Bruns. 1997. Putting inclusion into practice: perspectives of teachers and parents. *Exceptional Children* 64, no. 1: 115–131.
- Harrower, J. K., and G. Dunlap. 2001. Including children with autism in general education classrooms. A review of effective strategies. *Behavior Modification* 25, no. 5: 762–784.
- Iovannone, R., G. Dunlap, H. Huber, and D. Kincaid. 2003. Effective educational practices for students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities* 18, no. 3: 150–165.
- Jordan, R. 2008. Autistic spectrum disorders: A challenge and a model for inclusion in education. *British Journal of Special Education* 35, no. 1: 11–15.
- Leach, D., and M. L. Duffy. 2009. Supporting students with autism spectrum disorders in Inclusive Settings. *Intervention in School and Clinic* 45, no. 1: 31–37.
- Lord, C. and J. McGee, (Eds.). 2001. *Educating Children with Autism*. Washington DC: National Academy Press.
- McClannahan, L. E. and P. J. Krantz. 2010. *Activity schedules for children with autism*. Bethesda, MD: Woodbine House.
- Mesibov, G. B., and V. Shea. 1996). Full inclusion and students with autism. *Journal of Autism and Developmental Disorders* 26, no. 3: 337–346.
- Ochs, E., T. Kremer-Sadlik, O. Solomon, and K. Sirota. 2001. Inclusion as social practice: Views of children with autism. *Social Development* 10, no. 3: 399–419.
- Petras, H., K. Masyn, J. Buckley, N. Ialongo, M. Clark, and S. Kellam. 2011. Who is most at-risk for school removal? An application of multilevel discrete-time survival analysis to understand individual and contextual-level influences. *Journal of Educational Psychology* 103, no. 1: 223–237.
- Scruggs, T. E., and M. A. Mastropieri. 1996. Teacher perceptions of mainstreaming/inclusion, 1958-1995: A research synthesis. *Exceptional Children* 63, no. 1: 59–74.
- Simpson, R. L., S. R. De Boer-Ott, and B. Smith-Myles. 2003. Inclusion of learners with autism spectrum disorders in general education settings. *Topics in Language Disorders* 23, no. 2: 116–133.
- Skiba, R. J. (2002). Special education and school discipline: A precarious balance. *Behavioral Disorders* 27, no. 2: 81–97.
- University of the State of New York (USNY), Education Department Office of Vocational and Educational Services for Individuals with Disabilities, Albany, N.Y, 2001: Autism program quality indicators.

Self-review and quality improvement guide for schools and programs serving students with autism spectrum disorders.
<http://www.p12.nysed.gov/specialed/autism/apqi.htm>.

Weigle, K. L. 1997. Positive Behavior Support as a Model for Promoting Educational Inclusion. *The Journal of the Association for Persons with Severe Handicaps*, 22: 36–48.

Table 1. Demonstrated Skills for M from age 3

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