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Understanding and teaching students with Asperger's Syndrome as individuals

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Abstract

Students diagnosed with Asperger’s Syndrome are being reported with increasing frequency in classrooms throughout the Western world (Barnhill, 2001; Safran, 2001), yet many teachers have limited understanding of the condition, or of appropriate strategies for the successful inclusion of students with this diagnosis. There are now increasing calls for teachers to become aware of the nature of this Syndrome, and of strategies to facilitate the learning of students with this diagnosis in regular classrooms (Myles, 1998; Attwood, 1998). While it is imperative that teachers acquire broad information about the condition, this does not preclude the need to be closely attuned to the unique manifestations of the Syndrome, and of the individualised responses that they may require.

This paper will introduce two very different students who, despite having the same diagnosis, experienced and presented quite different challenges in their mainstream settings. Support was offered to the schools and teachers to facilitate the students’ inclusion through explanation and demonstration of strategies gleaned from a review of the literature. After briefly discussing the characteristics of Asperger’s Syndrome, this paper will focus on the strategies that were used, and the extent to which they were successful.

Keywords: Asperger’s Syndrome, strategies for social inclusion, strategies for academic inclusion

Introduction

The term “Asperger’s Syndrome” was first coined by Lorna Wing in 1981. This was an acknowledgement of the work of Hans Asperger, an Austrian paediatrician, who in 1944 described children with unusual social and behavioural patterns, as having a condition he called “autistic psychopathy” (as cited in Cumine, Leach and Stevenson, 1998). While there is still some debate regarding the precise relationship between Asperger’s Syndrome, autism and other social learning disabilities (Freeman, Cronin & Candela, 2002; Klin, Volkmar, & Sparrow, 2000), Asperger’s Syndrome is now widely accepted as a pervasive developmental disorder that falls within the broad parameters of Autism Spectrum Disorder (DSM-IV 2000-TR; Myles & Simpson, 2001; Safran, 2000; Szatmari, 2000). It is considered to be a “mild form” of, or high functioning autism, although it still presents significant problems for the individual and those around him or her. Asperger believed it was exclusively a male disorder, but it is now considered that while overwhelmingly male, females can be diagnosed with a 4:1 male to female ratio (Atwood, 2003; Gillberg & Gillberg, 1989; Williams, 1995; Wing, 2001). Minimum prevalence rates of 3.6 per 1000 children have been reported (Gillberg & Gillberg, 1989).

The Triad of Impairments

Because Asperger’s Syndrome is located on the Autism Spectrum of Disorders, it shares the defining characteristics of those disorders. These fall within what is referred to as the Triad of Impairments (Wing & Gould, 1979):

- impaired social interaction;
- impaired communication skills; and
- unusual behaviours and interests.

Impaired Social Interaction

Individuals with Asperger’s Syndrome have little “social instinct” and therefore have difficulty initiating and sustaining social contact. Problems with making eye contact and in understanding body language, facial expressions and body postures mean that these students become increasingly isolated. They may behave in a highly inappropriate manner at an age when most children realise that is improper, such as loudly commenting on people’s weight, or talking in a very loud voice during a church service. They often desire human interaction, but lack the skills to engage with others successfully (Asperger, 1991; Szatmari, Brenner, & Nagy, 1989; Tovbin, 1988; Wing, 1981; Winner, 2003).

They have great difficulty understanding the perspective or experiences of others, or indeed that others may have experiences, feelings or views that are different from their own (Myles & Simpson, 1998). To use Baron-Cohen’s (1996) notion of “Theory of Mind”, people with Asperger’s Syndrome are unable to understand that others have their own unique view of the world, and that it may not match our own. People with Asperger’s Syndrome demonstrate little empathy, and behave in a generally egocentric manner. Expressions of this can be quite disturbing. They may, for example, be
Impaired Communication Skills

While the development of language in the early years is considered to be relatively normal in individuals with Asperger's Syndrome, speech is often pedantic and stilted, with a poor understanding of abstract language and the pragmatics of language. Despite having average to superior vocabulary levels (Attwood, 1998; Myles & Simpson, 1998), students with Asperger's Syndrome will often surprise their teachers by responding literally when told to "pull up their socks", or with great confusion, and possibly great anxiety, to expressions such as "catching someone's eye". Their communication with peers is often a long monologue, delivered in a monotone, of detailed information relating to their special interest, with no appreciation that the listener may have no interest in the topic, and providing no opportunity for the listener to contribute to the conversation. Inappropriate laughing or giggling interferes further with efforts to communicate. Students with Asperger's Syndrome characteristically have difficulty understanding the verbal input of others, particularly long verbal instructions (Asperger, 1991; Church, Alisanski & Amanullah, 2000; Frith, 1991; Klin, Volkmar, Sparrow, Cicchetti & Rourke, 1995; Szatmari, Bremner & Nagy, 1989).

Impaired Flexibility of Thinking and Behaviour

Children with Asperger's Syndrome often engage in odd or eccentric behaviours, such as rocking, spinning and tapping. They also demonstrate limited creative play and tend to play with toys in an unusual manner, such as continually spinning the wheels on a toy car rather than using it in a more typical fashion. Most individuals with this diagnosis have a preoccupation with one specific object or interest, which often relates to machinery or transport. Thomas the Tank Engine is a favourite with young children with this diagnosis. Fixations with computers, trains, cars and planes are common in adults. Most insist on sameness in their environment and vigorously resist change. Repetitive behaviours and rigidly held routines appear to be an attempt to achieve the security of predictability. Some appear to engage in tantrums for no reason. Behaviours such as these make social relationships difficult, and these individuals are often alienated from their peer groups (Asperger, 1991; Attwood, 2003; Klin, Volkmar, Sparrow, Cicchetti & Rourke, 1995; Szatmari, Bremner, & Nagy, 1989; Williams, 1995).

Additional Problems

Individuals with Asperger's Syndrome often, but not always, share a number of other characteristics. A significant proportion respond unusually, often violently, to certain sensory stimuli. Although a small percentage have aversions to certain visual, tactile or olfactory stimuli, aversive reactions most typically occur in response to sounds. These are usually sounds that present no difficulty for most people - such as lawnmowers, air conditioners or washing machines. Some children develop an aversion or apparent fear of sounds that are barely discernible to most people, such as an electric hand dryer being used several rooms away. These sounds can often have a dramatic effect on a child's behaviour (Attwood, 1998; Murphy, 2003; Safran, 2003).

Students with this diagnosis are often poorly coordinated and their movements appear clumsy and awkward. Poor handwriting and organisational problems also hinder school progress (Ghazziuddin & Butler, 1998; Lamarine, 2001; Wing, 1981).

Because of their social isolation, students with Asperger's Syndrome tend to become targets for bullying, and are at risk of emotional vulnerability. In adolescence they are particularly vulnerable, with many suffering depression, and some becoming suicidal (Adreon & Stella, 2001; Barnhill, 2001; Harden & Sahl, 1999; Kim, Szatmari, Bryson, Streiner & Wilson, 2000; Shoffner, & Williamson, 2000; Tonge, Brereton, Gray & Einfeld, 1999).

An important additional factor that often goes unmentioned, but which appears to contribute to increased difficulties for students with Asperger's Syndrome, is the fact that they have no obvious physical disability. Indeed, their perceived intelligence and vocabulary levels suggest that they should be socially very adept. Consequently, many people have less tolerance toward individuals with Asperger's Syndrome than they would with an individual with a clearly identifiable disability. It is assumed they are being deliberately annoying, and therefore they are afforded much less understanding than they are due.

Strengths

In addition to their impairments, students with this diagnosis have a number of strengths which can contribute to their success at school. It is important, and indeed helpful, for teachers to be aware of these (Saskatchewan Special Education Unit, 1999). Students with Asperger's Syndrome generally have no difficulty learning to read or to comprehend factual material (Attwood, 1998). Rote memorisation skills are highly developed (Happe, 1991; Myles & Simpson, 1998; Wing, 1981) which assists learning of basic facts. This can facilitate early academic progress, particularly at the primary or elementary level. They are accurate observers of
detail, which can be directed into many career opportunities, as can their strong interests in particular topics (Hogdon, 1995a; Quill, 1995a).

Students with Asperger's Syndrome desire social interaction (Attwood, 1998; Carrington & Graham, 1999; Klin & Volkmar, 1997), therefore they have the motivation to learn relevant skills, although they continue to find this difficult. They can follow rules once they are aware of them, and can be very supportive of friends that they do make. Thus, there are significant strengths that teachers can draw on to help them manage and teach students with this diagnosis.

Including Students with Asperger’s Syndrome in Regular Classes: Two Case Studies

In the following section, two students with a diagnosis of Asperger’s Syndrome will be introduced to consider more closely the different ways in which Asperger’s Syndrome may present, and the different strategies required to facilitate their successful inclusion in mainstream classes. Although both students had the same diagnosis, classroom and playground observations of each student gained over a period of six months, highlighted great differences in the manifestation of the Syndrome, and a broad range of strategies that facilitated their successful inclusion.

Adrian

Adrian, a Grade 6 student, had been fully included since Grade 4 after being placed in a special class within a regular school from ages five to eight. Examination of assessments conducted by psychologists provided by Adrian’s mother revealed a boy of average intelligence, who was making satisfactory academic progress at school.

Adrian exhibited a range of behaviours which set him apart from his peers. On occasions, he licked doors and windows, chewed his clothes, tapped his teeth with his fingers, flapped his hands while spinning around and often marched around with odd stiff-legged movements. Having had a series of obsessive interests throughout primary school, his interest at the time when the writer first met him was in the recycling of rubbish. Adrian would become extremely upset if the recycling bins were not in proper order. Peers would occasionally place the incorrect items in particular bins, apparently just to watch Adrian’s reaction of rage and frustration. Losing at games was also a trigger for angry outbursts from Adrian. He would often play chess or other board games with peers and occasionally the librarian in the library during lunch. It is interesting to note that when he lost a game to the librarian, his outburst was much more muted, which suggests he was aware of how to modify his behaviour according to different social contexts.

Loud noises would result in a startled reaction from Adrian, but to a far greater extent than usual. This was particularly so with loud claps of thunder. The noise of rain would also alarm him, and even the appearance of clouds would cause distress.

Jeremy

Jeremy was aged 14 years when the writer first met him. He had been included in regular classrooms for his total education. This was done with a high level of teacher aide support. School records revealed he was of above average IQ, with particular strengths in language-related tasks.

Jeremy’s special interest was words. He constantly read the dictionary, recorded words of interest, experimented with new words and asked people about words. Of particular concern to Jeremy was when words were said incorrectly. Some peers would bait him by talking about buying “shish and fips” for lunch, or use other malapropisms, which always guaranteed a strong reaction from Jeremy.

Noise was also a trigger for Jeremy. Normal playground noise was interpreted as “everyone’s yelling at me”. The sound of an air conditioner turning on at 11.00 every morning, which was almost inaudible to others, caused great anxiety for Jeremy. High rise buildings and close physical proximity were also viewed as threats, and caused a panic reaction.

Inclusive Strategies for students with Asperger’s Syndrome

A number of strategies that facilitated the successful inclusion of both boys within their classroom and school contexts are described in this section to demonstrate a range of approaches that were successfully used with these two, quite different individuals.

Managing the Transition to Secondary School

Black (1999) identified the lack of communication between feeder schools and the secondary school, as one of the most significant barriers to the successful transition of a student with Asperger’s Syndrome. Schoffner and Williams (2000) also pointed out that successful transition to a new setting is a process, not an event. A number of other researchers in the field highlight the need for the professional development of school personnel before the student arrives at the school (Attwood, 1998; Lamarine, 2001), emphasising the need for all stakeholders to have an understanding of the condition, and an awareness of how environmental factors affect students with this diagnosis, their behaviour and their learning.

In Jeremy’s case, awareness programs were conducted over a period of six months prior to his
enrolment at the secondary school. His teachers, teacher aides, executive staff, administration staff, fellow students and parent groups were all included in sessions aimed at meeting the needs of different groups. These sessions were supported by the Autistic Association of New South Wales, which explained the condition, and how certain events and contexts would appear to Jeremy. Successful management strategies were discussed, and behaviours explained within the context of the disorder. A speech therapist, an occupational therapist, the school counsellor and two of Jeremy's former teachers also contributed to this series of sessions. The inclusion of students in the transition process was critical as Jeremy was a new enrolment at the school, travelling from some distance, and was completely unknown to them. Jeremy was introduced to key people at three orientation visits, which occurred towards the end of the year before.

Because Adrian had been at his school for several years, and was known to the whole school community, there was no formal school orientation. Because of issues which had arisen in the previous year, however, it was decided to conduct a workshop with his classmates, to further explain the condition, and why Adrian sometimes behaved the way he did. A presentation was made to a parent group, and his class teacher attended a series of day sessions conducted by the Autistic Association of New South Wales.

Managing Unstructured Times

Unstructured times such as travelling to and from school, transitions between classes, lunchtime, and even assembly periods lead to greater stress for students with Asperger's Syndrome (Adreon, 2002; Atwood, 1998). This is due to a variety of factors – increased noise levels, often close physical proximity to other students, many of whom many not be aware of the student's special needs, less defined rules, minimal supervision and more complex social demands. To intensify the problem, the unsupported student with Asperger's Syndrome will almost always make these transitions alone. These are prime opportunities for subtle, and sometimes not so subtle, bullying and victimisation. Inappropriate behaviour of the diagnosed student is also much more likely to escalate in these situations. For these reasons it is critical to develop management strategies for these particularly stressful times. Increased monitoring, a nominated buddy (varying the buddy across time and activities to avoid dependence), the establishment of a "circle of friends" to act as guides, and the use of Social Stories (Gray, 1993, 1996) are all suggestions made by writers in the field (Adreon & Stella, 2001; Atwood, 1998; Bock, 2001).

One strategy that worked particularly well with Adrian was an adaptation of the SODA (Stop, Observe, Deliberate, Act) strategy developed by Bock (2001). Adrian was taught to "watch what Simon does". Simon was a tolerant, high status peer who was in the same class and travelled on the same bus. Adrian liked Simon, and was keen to be his friend. While Simon did not particularly want to "hang around" with Adrian, he was happy enough to accompany him on the bus. A Social Story prepared Adrian for the stop where Simon alighted, and gave cues for him to follow all the way to where he alighted. The company of a high status peer prevented bullying and the two developed an easy relationship, with Simon commenting on how clever Adrian was.

Problems at lunch are common for students with Asperger's Syndrome. What is often the most enjoyable time of the day for most students is a time of confusion, anxiety and apprehension for many students with this diagnosis (Adreon & Stella, 2001). Adrian had lunch in the company of a small group of students in a smaller area, as suggested by Atwood, (1998) and Myles and Simpson (1998). The other students did not interact a great deal with him but, after the demands of the classroom, Adrian appeared happy to have some "down time", while ostensibly in the company of other students. During the play period, Adrian often went to the library to play chess or other board games. The provision of sets of cards and a variety of board games for lunchtime use greatly increased Adrian's recreational options, as he was far better at interacting with one other student in a board game, than he was at participating in a game of soccer or handball.

Jeremy enjoyed the company of another two students, one of whom had Asperger's tendencies, without the actual diagnosis, and the other student, a physical disability. These three boys formed a loose, but mutually satisfying, alliance. Jeremy was usually accompanied, at a distance, by his "social adviser", a young male teacher's aide who was available to advise, intervene or participate as required. His presence in the vicinity was enough to prevent any overt bullying. Jeremy would consult him about appropriate things to say or do.

While some writers report that the use of such "social interpreters" may foster dependence and may not be appropriate for students with mild to moderate levels of impairment (Safran, 2002), for Jeremy, it was a critical support. Both Jeremy and Adrian would have been content to spend all free time on a computer inside a classroom. While this was tempting, and used in some exceptional circumstances, such as when either boy was particularly distressed, unstructured times provide irreplaceable opportunities for students with Asperger's Syndrome to practise social skills. The temptation to solve social problems by avoiding them needed to be overcome (Adreon, 2002; Atwood, 2003; Winner, 2003).
For school assemblies, it was important to introduce both students to the assembly hall and to prepare them for as many of the procedures as possible using Social Stories (Gray, 1993; 1996). Every situation, no matter how unstructured, has rules governing behaviour. Social Stories can be used to introduce students to these situations, and give some guideline on how to behave. Because close physical proximity was a problem for both students, arranging seating at the end of a row was a practical preventative strategy. Ensuring that other staff members were aware of the students' special needs, and that the diagnosed students were permitted to leave if necessary, prevented most problems.

Managing Special Interests
Students with Asperger’s Syndrome respond well to a structured educational environment, as long as some provision is made for them to engage in their special interests (Szatmari, 1991). As far as possible, the special interest should be incorporated into their normal school and classroom routines (Adreon, 2002; Attwood, 1998; Lamarine, 2001; Murphy, 2003; Safran, 2003).

Both students were allowed reasonable periods of time to indulge in their special interest. All students in Adrian’s class had a regular job to do. Adrian’s allocated responsibility was to organise the recycling. He also did this at the school level. This was relatively easy to incorporate into the daily routine, and provided a legitimate avenue for him to engage in his special interest. Adrian’s passion for recycling was also used when the class did a specific unit on recycling, and was also successfully incorporated throughout the year into units on pollution, consumerism and advertising.

Jeremy’s obsession with words meant that, many times during a school period, he wanted to ask the meaning of new words he had come across. An agreement was made that he could ask about two new words each lesson, and this had to happen in the final minutes of the lesson when the teacher approached Jeremy to check on his progress. Confining his special interest to a short period of time was usually enough to satisfy him.

Jeremy’s passion for new words was easily accommodated into the class academic program. He was given a list of words at the beginning of each new unit of study. His task was to find the definitions and prepare a glossary for the rest of the class.

Managing Sensory Sensitivities
Making some accommodations for the particular sensitivities experienced by students with this diagnosis is critical. The impact of noise on the behaviours of both boys was partially solved through the use of earplugs or headphones, as recommended by Attwood (2003) and Myles (1998). Earphones were successfully used at assembly when there were noisy items, such as a performance of the school band. Adrian often used his earphones during transition times to limit the noise.

Jeremy’s inability to tolerate close physical proximity and noise made lining up a continuing problem. Being permitted to leave the classroom five minutes early to move to another classroom or to make his canteen purchases, helped him avoid the main crowds and the incidence of behavioural outbursts was greatly reduced.

Managing Behavioural Outbursts
Behavioural outbursts occur because the student is finding the situation unbearable for some reason (Bullard, 2004; Cotter, 2001; O’Brien, 2001; Williams, 1995). The teacher can do much to identify the source of the problem, become sensitive to early indicators of stress, redirect behaviours on occasions, and manage outbursts when they occur.

Identify Early Indicators of Stress
It is important to identify early indicators of stress, or what Myles and Simpson call “rumbling”, as intervention at this point may prevent “meltdown” (Attwood, 1998; Myles & Simpson, 1998; Safran, 2002). Early signs of stress for Adrian were panting, and rapid scanning of his immediate environment as well as an overwhelming desire to escape. If prevented from doing this (by, for example, a casual teacher who was unaware of his needs), he would begin using extremely violent language and intimidate those around him with a range of gruesome threats (although he never actually became physically violent to others).

Adrian usually chose to go into a small storeroom and pace up and down for five to ten minutes if something specific concerned him. If permitted to do this, he could normally return to classroom routines without further escalation. Often when the teacher noticed that he was becoming anxious, she would direct him to sort out the recycling. He was provided with heavy-duty gloves, and he sorted the recycling for the whole school, including the very busy canteen. He would return to the classroom about 40 minutes later ready to resume his work.

Jeremy’s anxiety would begin with soft distressed vocalizations and self-injurious behaviour – pinching and scratching the skin on his forearms and face. He would repeatedly request assurance that he was loved, and that he was a good boy. If not calmed quickly, Jeremy would escalate rapidly to physical violence, and both he and those around him were at significant risk of injury. Although aggression is not part of the diagnosis of Asperger’s Syndrome, aggression is not uncommon, because of
the many characteristics that frustrate the individual (Simpson & Myles, 1998).

Allow Time and Opportunity for Student to “De-stress”
If his teachers were alert to his signs of stress, Jeremy would be directed to read through his word lists, which were attached to a key ring and which always accompanied him. Looking through his merit cards was also reassuring for him, as was reading through calming Social Stories (Gray, 1995; Norris & Dattilo, 1999), which explained how he should behave when he was upset. Those present reassured him that he was indeed a good boy. On occasions he would retreat to the Resource Room, where he had the space and time to recover. Because words had such power for Jeremy, rules which were written down had a great deal of weight. Many difficulties were overcome by including a specific rule in his rule book about how to behave under certain conditions.

Provide a Safe Haven
Both students had a safe place to which they knew they could retreat if necessary. This follows a recommendation by Adreon and Stella (2001) and the Council for Exceptional Children (2002) and is critical for students who find so much of their environment threatening or confusing. The Resource Room was the haven for Jeremy; Adrian’s classroom, and sometimes the tiny storeroom within it, provided his refuge.

Explain Rules and Routines
Students with Asperger’s Syndrome, often do not understand why the world works the way it does, and why everyone else seems to understand it, while they do not. The importance of this is highlighted by Lamarine (2001), who points out that “forcing children to conform to rules that they cannot internalise can lead to an escalating spiral of confrontations that are extremely destructive to the child and that can result in secondary problems such as depression” (p. 151). Clearly explaining routines, changes to routines, and the rules of the school and classroom, using visual strategies and concrete examples, assisted both students to adapt more readily to everyday school existence.

Facilitating Social Inclusion

Structure for Success
Thoughtfully managing seating placements and the constitution of teams or groups can greatly contribute to a student’s inclusion in the regular classroom (Adreon, 2001; Safran, 2002) as students with Asperger’s Syndrome are easily victimized. Adrian and Jeremy were seated next to tolerant, high status peers, which did much to protect these vulnerable students. The teachers selected teams and groups, as student selection would always mean that these students were left as last choice, which no student deserves.

During group discussions, teachers need to ensure that the diagnosed students do not leave themselves open to scorn and the irritation of their peers due to inappropriate behaviour, such as dominating the talk. This can be achieved by setting clear guidelines about how long a discussion should continue. Safran (2002) suggests something like “Five minutes for questions, then questions should be written down and handed to me” or “no-one can answer two questions until everyone has had a turn”. This strategy was used with some success with both students.

Explicitly Teach the “Hidden Curriculum”
Unsupported social experiences and peer modelling are not usually effective for students with Asperger’s Syndrome, as they do not attend to the subtleties of social behaviour, or even understand what is relevant and what is not relevant in social interactions (Koegel, Koegel, Frea, & Smith, 1995; Myles & Simpson, 1998; Szatmari, 1991).

Cotter, Warren and Pearson (2001) and the Council for Exceptional Children (2002), support the implementation of a Social Skills Club to specifically target required skills. While not strictly within a formal club structure, Jeremy was given specific social skills instruction, or what Lamarine (2001) calls “guided socialization” (p. 151). He met with volunteer peers to rehearse requests for help, opening lines when attempting to join games, and so on. Jeremy was taught a general escape strategy as recommended by Bullard (2004). He was taught to say “I need to go to the Resource Room now” whenever he started to feel overwhelmed. The use of cartoons with speech bubbles, as developed by Gray (1994) and found to be successful in practice (Rogers & Myles, 2001; Myles & Simpson, 2001) also proved to be useful in helping Jeremy understand others’ points of view, and to interpret facial expressions.

Use Secret Signals
Using a secret signal to indicate to students that their behaviour is inappropriate, a strategy recommended by Safran (2002) was a successful strategy with Adrian. This strategy works only when the student wants to change his or her behaviour, but needs support to do so. Often Adrian wasn’t aware that he was annoying others, or behaving in an inappropriate manner. He and his teacher decided on a signal using her keys: when Adrian’s behaviour started to deteriorate, his teacher would approach him gently jangling her keys. Adrian enjoyed the conspiratorial and private nature of this management
strategy, and it was very successful for minor and irritating behaviours.

Use Social Stories
Because of the power of the written word for Jeremy, he responded very well to Social Stories and to contracts to maintain appropriate behaviour. Contracts had limited success if he was extremely upset, but they were useful in modifying some of his behaviours.

Explain Events and Behaviours
The importance of explaining events and behaviours cannot be overemphasized (Safran, 2002). Teachers need to explain what’s happening when students with Asperger’s Syndrome misconstrue situations. Explanations such as “Michael’s comment was a joke – he didn’t really mean ...” or “When you take Emily’s pencil without asking, she thinks you mightn’t give it back. If you ask to borrow it for a minute, she knows it will be returned” help students navigate the social minefield of the classroom.

Strategies for Successful Academic Inclusion

Increase Use of Visual Aids
Students with Asperger’s Syndrome respond much more to visual cues than they do to verbal input (Hodgon, 1995; Myles & Simpson, 2001; Savner & Myles, 2000). The Council for Exceptional Children (2002) recommended the use of a range of visual aids, particularly things like graphic organizers to help students get the “big picture”, and prevent them from focusing on minutia. Daily timetables, task outlines, and checklists have been used successfully by students with this diagnosis to prepare for transitions, to organise themselves, and to complete tasks (Saskatchewan Special Education Unit, 1999).

Adrian particularly liked using mind maps, flow diagrams, pyramids, skeletal diagrams, story maps and other visual strategies to both record information and as study aides. He could prepare very detailed mind maps that his teacher often used as a teaching tool.

Graphing (of sorts) made another important contribution to Adrian’s inclusion. His speech was the typical monotone of an individual with Asperger’s Syndrome. His teacher found that she was able to graph the intonation of sentences, through the use of flat, rising and descending lines placed over particular words within a sentence. Once again, this made a transient and nebulous characteristic more concrete for Adrian, and his speech began to develop a more natural cadence.

Jeremy, on the other hand, responded to having things in written form – another reminder of the need to be aware of individual needs and preferences, and not to respond to students in a global manner. Responding to each student as an individual, helped each of them access the curriculum successfully.

Use Reattribution Training
Adrian exhibited some signs of learned helplessness, a belief that he would not succeed, despite any attempts he made to do so. Dweck (1975) found that reattribution training, a cognitive training approach designed to change belief patterns about success and failure, was successful with some students displaying a learned helplessness style. An informal program of reattribution training was undertaken. On task completion, Adrian was “walked through” the process again to point out how the task was achieved. All of Adrian’s marks were specifically explained to him in terms of factors controlled by him. When he did well, it was explained that the result was because he understood the material well, or he had worked very hard. On those occasions when he did not do well, it was explained in terms of him not doing enough examples, of misreading the question, or some other factor that he could control. While there is no empirical data on how this strategy worked, the teacher believed that Adrian was gradually taking more responsibility for his own learning.

Present Work in Manageable Units
Dividing tasks into manageable units has been shown to be a successful strategy for students with this diagnosis (Adreon, 2002). The setting of short-term goals was instrumental in helping Adrian take more responsibility for his learning. A book review was too long for him, but three questions from the book review was manageable, particularly when the teacher made a particular effort to mark these contributions as soon as possible after completion. Timing tasks, as suggested by Bullard (2004), was also an effective strategy for Adrian, as he would either perseverate on a task or lack the organizational skills to actually get started. A set time span seemed to give him the required impetus to start and complete tasks.

Chart Progress
Charting his progress on individual graphs inside each of his folders was a motivating exercise for Adrian (Konza, 2001). This strategy made his progress much more concrete – he could see the graph grow as he completed more and more tasks.

Use Quizzes
Because of the strength in rote learning ability of most students with Asperger’s Syndrome, quizzes on subject content usually allow the student with this diagnosis to achieve in front of his peers. One of
Jeremy's teacher's regularly held "Sale of the Century" type quizzes at the end of each unit of work, and Jeremy was often very successful.

**Allow Reading Aloud**

Recent research supports the view that reading aloud improves comprehension for students with Asperger's Syndrome (Myles, Hilgenfeld, Barnhill, Griswold, Hagiwara & Simpson, 2002), thus allowing this reveals the value of responding as far as possible to what the students themselves find helpful. Both Adrian and Jeremy demonstrated a preference for reading aloud. While this sometimes caused irritation among peers, a modified version where they moved their lips was an appropriate compromise.

**Respond to Individual Styles**

Adrian had the habit of leaving his seat, and standing at the window, staring at the sky during periods of "teacher talk". Because of his fear of rain, his teacher assumed that he was on "cloud watch". She would approach him and reassure him that he was safe and encourage him to return his seat. However, she was rarely able to convince Adrian using this strategy. It was discovered that his work output and accuracy did not suffer as a result of his standing at the window during explanations. As this did not seem consistent with his general preference for visual strategies, it was assumed that some error had been made in matching work samples with the time periods during which he was at the window. Thus, particular note was taken to check his work output when he had been at the window during explanations. Subsequent collection of work samples confirmed that Adrian was able to remain on-task, listen to instructions, and absorb important information while apparently gazing out the window. As this strategy was not disruptive in any way, acceptance of this by the whole class made Adrian's life, and that of his teacher, much simpler.

**Use Cooperative Groups**

Cooperative learning groups have long been recognized as assisting the inclusion of students with a range of special needs (Johnson & Johnson, 1990; Johnson & Johnson, 1994; Johnson, Johnson & Johnson-Holubec, 1993; Slavin, 1995; 1996). With developing emphasis on group tasks and cooperative learning in mainstream classrooms, the student with poor interpersonal skills and an inability to interpret social behaviour is increasingly disadvantaged (Safran, 2002). Students with Asperger's Syndrome can work in groups if the groups are selected carefully, their particular group role suits their skill level, and is explicitly taught to them. Teaching the whole group strategies to facilitate the group work is also important, such as using statements like "before deciding on a plan, have a "go-round' to make sure everyone's idea is heard (Safran, 2002). Adding visible time cues, such as an egg timer, as recommended by Williams (1995), can also help the student with Asperger's Syndrome not to dominate (and irritate) the group. Building on the student's strengths such as highly competent IT or drawing skills, also demonstrates how the diagnosed student can make a genuine contribution. Suggesting to the group that Adrian was able to provide detailed illustrations and diagrams for most group projects allowed him to make a valued contribution to the group projects. While this built on his strengths, Adrian nevertheless needed significant guidance in understanding the need to allow other group members to have input into his diagrams.

**Explain Abstract and Metaphorical Language**

It is important to explain abstract language specifically to students with Asperger's Syndrome. Adrian responded on one occasion with great anxiety to the expression "to catch someone's eye" when it was used incidentally in the classroom. Similarly he responded with panic when faced with "the body and blood of Christ" at a school mass. The richness of the English language can be a cause for great bewilderment and even distress for students who cannot see beyond a literal translation.

**Teach Organisational Skills**

Adrian's poor organizational skills led to him regularly lose items. Moreno and O'Neal (1996) state that students with Asperger's Syndrome need specific assistance in organizing their materials and activities. Adrian's teacher instituted a "Sort'n'Save" (Konza, 2001) every Friday afternoon for all students. Fifteen minutes were spent organizing desks, filing loose papers, cleaning out individual tubs, placing appropriate papers in the recycling bin, and throwing out rubbish. This meant that each new week began in an organized fashion, and much less was misplaced.

Thus the literature directed the schools and teachers towards a range of strategies that facilitated the inclusion of two students who gained much from, and contributed much to, their schools and their school populations.

**Conclusion**

These case studies highlight the need for careful observation of each individual student to determine appropriate strategies that will facilitate their inclusion. It is particularly important to be attuned to subtle indicators that the student is becoming anxious; triggers that lead to stress responses; calming strategies that the student uses; and context variables that facilitate on-task and cooperative behaviour. It is only by careful observation of each individual that the most appropriate strategies and
responses can be made to facilitate successful inclusion.

While not without setbacks, the inclusion of both Adrian and Jeremy has been regarded as successful by all stakeholders. This required the combined efforts of the total school communities, and support from other bodies such as the Autistic Association of New South Wales and a range of other supporting personnel. The commitment of the schools to the process of providing a regular school education for students with significant needs, the level of collaboration that was required, and the willingness to continually search for new ways to make their inclusion a success for all concerned are significant achievements, of which the school populations can be justifiably proud.

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**About the Author**

Deslea Konza has had experience teaching students with a range of special needs from preschool to secondary level. She is currently Director of Primary and co-ordinates undergraduate and postgraduate programs in special education at the University of Wollongong. She has published in the areas of special education policy, teacher education, learning disability, gifted education and dual exceptionality. Current research interests include reading disability, Asperger’s Syndrome, students with attention deficit hyperactivity disorders, and effective teaching.