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ASPERGER'S SYNDROME: LEARNER CHARACTERISTICS AND TEACHING STRATEGIES

Suzanne Carrington, Queensland University of Technology, Brisbane, QLD
Lorraine Graham, University of New England, Armidale, NSW

ABSTRACT

Students with Asperger's syndrome present a particular challenge for their parents, teachers, and peers. Therefore it is important for teachers working in inclusive settings to become aware of the unique needs of these students. In this paper, challenges for students with Asperger's syndrome are discussed in terms of five aspects; communication, motor clumsiness, obsessional interests, attention and social skills. These characteristics are discussed in a way that will facilitate teachers' understanding of the difficulties associated with student participation in the school environment. Challenges for teachers are discussed under the headings: inclusive schooling; need for a structured program; behaviour management; communication; and creativity in planning. Adaptive and compensatory strategies for teachers are described which will facilitate learning and participation of students with Asperger's syndrome in the regular classroom.

INTRODUCTION

Although first described in 1944, Asperger's syndrome has only recently been included in the ICD-10 (World Health Organization, 1993) and DSM-IV (American Psychological Association, 1994) as a distinct category within Pervasive Developmental Disorders. It has been described as an autistic continuum disorder and is characterised by motor clumsiness, abnormal language development, abnormal social development, the presence of fixed interests, and a limited range of imaginative activities (Ghaziuddin & Gerstein, 1996; Howlin, 1993; Wing, 1991). Students with Asperger's syndrome are usually in regular school settings (Goble, 1995). Some of these children remain undiagnosed or may be misdiagnosed with Attention Deficit Hyperactivity Disorder (ADHD) (Bauer, 1996). There is, in fact, a commonality of characteristics attributed to ADHD and Asperger's syndrome. For example, comments like,

"Cannot and does not relate to or cooperate with other children. Displays very limited concentration span and resorts to disrupting or upsetting others. Produces very little written work - does not see the need and is very, very slow. Very difficult to reason with - has no respect for adults. Can be quite aggressive" (Gross, 1994, p.106).

could describe individuals in either group. Gross (1994) states that "it is easy to miss children with Asperger's syndrome because the oddities in their behaviour are so nebulous and hard to put into words" (p.107).

Despite the inclusion of Asperger's syndrome as a separate diagnostic category in the DSM-IV (American Psychological Association, 1994) and the ICD-10 (World Health Organization, 1993), disagreement still exists as to whether Asperger's syndrome should be described as an Autistic condition or as a separate Developmental Disorder. The attributes that distinguish Asperger's syndrome from more extreme forms of Autism, namely the apparent lack of severe language delay and intellectual dysfunction, can be used in the argument for the retention of the Asperger term (Goble, 1995). While Autism occurs in about 4 out of every 10,000 children, estimates of Asperger's syndrome have ranged as high as 20-25 per 10,000 (Bauer, 1996). Asperger's syndrome is considerably more common in boys than girls. While children with Autism face extreme difficulties and need a high level of support throughout their school years, those with Asperger's syndrome are more

likely to achieve a level of independent living. Individuals with Asperger's syndrome, however, will display abnormal communication, social idiosyncrasies and oddities throughout their lives (Goble, 1995).

For educators, the distinction between Autism and Asperger's syndrome may be of limited use. It is evident from a survey of the literature (e.g., Attwood, 1993; Autistic Children's Association of Queensland, 1996; Blizzard, 1994; Jackel, 1996) that many intervention strategies suggested for students with Autism are just as relevant to students with Asperger's syndrome. This paper aims to provide an understanding of the disorder and a model for planning and programming that takes into account the management issues which accompany common learning and social characteristics of individuals with Asperger's syndrome. For students with Asperger's syndrome, the primary challenges are in the areas of communication, motor clumsiness, obsessions, attention, and social skills. Associated challenges for teachers are discussed under the headings: inclusive schooling; need for a structured program; behaviour management; communication; and creativity in planning.

CHALLENGES FOR STUDENTS: COMMUNICATION

Although a person with Asperger's syndrome may have a high verbal intelligence score (Ghaziuddin & Gerstein, 1996; Wing, 1981), abnormal communication is usually evident. Asperger himself described the speech of students he studied as unusual. It often includes words that are newly formed or partially restructured (Frith, 1991) and can be pedantic, lengthy and "bookish" (Wing, 1981). Further, the communication of a person with Asperger's syndrome may be characterised by a lack of spontaneous and reciprocal conversation, the overuse of stereotyped phrases, little descriptive language, the imitation and echoing of words, impaired imagination, and in general, a lack of understanding of the meaning of language and the function of communication (Attwood, 1998). These difficulties are evident in the following teacher's comments:

"He can be so cheeky. And yet it's as if he doesn't know he's being cheeky. The other day I was telling him off and I said, 'Are you with me?'- you know expecting him to say Yes Miss or whatever - and he said, 'Well I'm next to you and I'm not with anyone else so I must be with you'. And it wasn't as if he was being jokey; he's like that, very serious - it's hard to describe" (Gross, 1994, p.104).

Inappropriate communication may also include too much information or the use of a socially inappropriate style (Bishop, 1989). For example, someone may say, "Hello how are you?" to the same person five times in a single day, instead of only on the first encounter (Gross, 1994). Repetitive questioning is another common characteristic (Tantam, 1991b), as is the lack of ability to monitor conversation and listeners' informational needs (Fine, Bartolucci, Szatmari, & Ginsberg, 1994). This is illustrated by the following extract from the case notes of a fifteen-year-old student:

"They [the teachers] referred to his frequent interruptions during lessons, as he would ask many questions which might, or might not, be appropriate. He did not always accept that when staff finished a conversation it was finished. Instead he would try to prolong it or raise the matter again later" (Fine, et al., 1994, p.56).

CHALLENGES FOR STUDENTS: MOTOR CLUMSINESS

Some individuals with Asperger's syndrome are physically awkward and clumsy and display a lack of motor co-ordination (Tantam, 1991a). An individual program may be necessary to cover areas of the curriculum that require fine and gross motor skills (Gross, 1994). For example, handwriting difficulties are commonly associated with Asperger's syndrome. These students often need individualised assistance and instruction in word processing.

CHALLENGES FOR STUDENTS: OBSESSIONS

In contrast to Autism where an obsession is often focussed on objects or parts of objects, the obsessions of people with Asperger's syndrome appear to be within specific information areas. For example, children may show an obsessive interest in certain aspects of maths or science. They may want to learn everything about a given topic and gather an enormous amount of information on their specific interests. Common topics of interest are from the realms of technology, transport, computers and mathematics (Gross, 1994). Individuals' obsessions often affect social situations through leaving little room for reciprocal interaction and by overwhelming any regard for the conversational interests of others (Ghaziuddin & Gerstein, 1996).

For many children, special interests change over time. However, for some, special interests may extend into adulthood and can form the basis of a successful career. Narratives gathered from adults who have Asperger's syndrome show that they often work in areas relating to their lifelong special interests. Some of the highest functioning individuals with Asperger's syndrome may have the single mindedness and consuming interest to significantly advance knowledge in their specialised areas of interest. For example, Dr. Temple Grandin has written of her experiences and the influences that have shaped her life:

"...Mr. Carlock used my fixation on cattle squeeze chutes to motivate me to study science and learn how to use the scientific indexes. He told me that in order to really learn about my interests I had to learn scientific methods and study in school. The psychologists and the counsellors wanted to get rid of my weird interest, but Mr. Carlock broadened it away from a narrow fixation into the basis of a lifelong career. Today I travel all over the world designing stockyards and chutes for major meat-packing firms" (Grandin, 1990, p.2).

Such narratives can foster increased awareness and understanding of people with Autism and Asperger's syndrome. Obsessions are a fascinating aspect of these disorders and while they can lead to successful and satisfying outcomes, it is clear that students' obsessions may also interfere with their learning in curriculum areas. It is clearly not appropriate to answer repetitive questions or allow students to engage in non-productive discussion within the regular classroom (Gross, 1994).

CHALLENGES FOR STUDENTS: ATTENTION

Students with Asperger's syndrome have difficulty focussing on significant cues in the environment and screening out irrelevant stimuli (Attwood, 1998). Students may also find it difficult to switch attention while maintaining self-control (Gross, 1994). As a result, they may appear to be distracted by every stimulus or so absorbed in one activity that they shut out all else. A referral note for a student with Asperger's syndrome describes this behaviour:

"Performs repetitive tasks very slowly (unpacking her school bag, dressing herself). She seems to be constantly sidetracked and everything has to be just so'. Sometimes she works reasonably well but more often her concentration wanders as she observes anything that is going on about her, or else withdraws into a world of her own where external factors seem to by pass her" (Bauer, 1996).

Some people with Asperger's syndrome also describe abnormal and painful experiences related to sensory stimuli. They may experience hypersensitivity to noise (such as a dog barking), touch (experiencing a light touch on skin as painful), taste (having difficulty swallowing lumpy food) and smell (such as an aversion to particular aromas) (Nicholson, 1994). Sensory hypersensitivity makes it difficult for students to cope in a regular classroom and playground without support, understanding, and flexible curriculum arrangements.

CHALLENGES FOR STUDENTS: SOCIAL SKILLS

The social behaviour of individuals with Asperger's syndrome has been described as bizarre. Although their intellectual capability may be adequate or superior, their idiosyncratic social skills present an enormous handicap in school and the wider society. One reason that social interactions are problematic for children with Asperger's syndrome is the difficulty they experience in interpreting subtle social cues, particularly non-verbal body language. For example, a person with Asperger's syndrome may not recognise that another is bored or in a hurry. In addition, individuals with Asperger's syndrome often use smiles, greetings, eye contact and social distance inappropriately (Attwood, 1998).

Aarons and Gittens (1992) suggest that these students are unlikely to ever be "street wise": "They remain naive and unknowing and are vulnerable, despite sensitive and supportive care throughout their years of education" (p.47). To illustrate this, Gross (1994) relates the story of a student with Asperger's syndrome who was reported by a parent for "indecent behaviour". The student had walked up to a woman waiting at a bus stop and lifted her skirt. When the incident was investigated, it was found that a group of boys had urged the student with Asperger's syndrome to approach the woman

(Gross, 1994, p.105). This student was unable to identify or maintain acceptable behaviour in the face of peer pressure.

In adolescence, when "fitting in" with peers is vitally important, complex, and stressful, students with Asperger's syndrome have an increased need for social support and understanding. During their teens, these students generally become more aware of their "differentness". They want to "fit in" but don't know how. This can lead to intense frustration, which may underlie some students' verbal and physical aggression or withdrawal.

CHALLENGES FOR TEACHERS: INCLUSIVE SCHOOLING

Participation in a regular school program presents challenges for students with Asperger's syndrome. Students are required to cope with changes in routine, varying behavioural expectations, to engage in complex social interactions with peers and adults, as well as meet academic learning demands. Wing (1981) and Gross (1994) stress how important it is for teachers to understand the nature of Asperger's syndrome. They argue that children benefit markedly from the increased tolerance that follows a clear explanation of this disorder and its associated difficulties (Gross, 1994).

Students with Asperger's syndrome experience problems making and keeping friends. Many children express a desire to fit in socially and have friends but are often deeply frustrated and disappointed by their social difficulties (Bauer, 1996). In the SBS television production "I'm not Stupid"(SBS, 1997), a young boy asks his parents if he can buy a friend at "Toys R Us". This illustrates his lack of understanding of what a friend is and does. Inappropriate attempts at socialising from children with Asperger's syndrome often result in them being "looked after" or in social rejection accompanied by teasing and exploitation from peers (Gross, 1994).

It is, therefore, a priority for an inclusive program to include the teaching of behaviour that is acceptable in the classroom and in broader social contexts. A suitable program could include the skills involved in conducting a conversation such as: listening; talking; asking questions; topic introduction, maintenance and change; how to end a conversation; what we can and can't say to strangers and intimates; how far to stand from others; and how to interpret body language (Barber, 1996; Gross, 1994). These skills should be taught in a structured, formal way which combines explicit teaching, practice, and the monitoring of behaviour in a variety of settings (Attwood, 1998). Social skills training should not be restricted to inclass behaviour. It should also include informal social interactions and behaviours appropriate to the playground. Structured programs that teach specific behavioural routines seem to work significantly better than those that depend upon empathy and shared morality (Gross, 1994).

CHALLENGES FOR TEACHERS: NEED FOR A STRUCTURED PROGRAM

Children with Asperger's syndrome benefit from a highly structured approach where the classroom context is orderly and based on routine (Gross, 1994). An inclusive classroom can provide this structure yet still leave room for flexibility and spontaneity. An inclusive program would not simply teach academic skills but also seek to develop self-control, self-discipline, and appropriate social interaction skills. An effective program needs to recognise students' strengths and provide opportunities for them to achieve in their specialised areas of interest. Opportunities to make use of obsessional interests in the curriculum need to be explored. Individual contracts and computer-assisted learning may work particularly well. Donna Williams, a very able autistic adult states that she found learning easier without the distraction of the teacher (Williams, 1992).

Cooperation between teachers, staff training opportunities, and coordinated planning can provide a positive classroom experience for all students in the inclusive school. Information collected from previous teachers, specialists, support groups and associations combined with parental input can give the classroom teacher confidence in dealing with students with Asperger's syndrome (Carrington & Graham, 1997). A supportive school administration team committed to establishing a support network for children, parents and teachers can coordinate a whole school approach for students with disabilities. This eases communication by ensuring that all staff members have similar understandings and expectations of students.

A predictable routine facilitates academic achievement by assisting students with Asperger's syndrome to focus on what is important and screen out distractions. If a copy of the weekly timetable is shared with parents, they can assist by reminding their children what is to come during the next

school day (Attwood, 1993). Similarly, advance preparation for any departures from the usual school routine can help prevent behavioural and verbal outbursts. Attention must also be given to students' seating in the class in order to minimise distractions and maximise engagement with the curriculum.

Students with Asperger's syndrome usually learn well by rote. Their academic achievement through the primary years, however, depends on factors such as behaviour management at school and home, social skill development, temperament, and the presence of complicating factors such as hyperactivity/attentional problems and anxiety (Bauer, 1996). Those who do not cope with overstimulation or confusion may require a focussed behaviour management plan (Attwood, 1993). Such a plan would need to be understood clearly by all students, parents, and regular visitors to the classroom.

CHALLENGES FOR THE TEACHER: BEHAVIOUR MANAGEMENT

As students move into the upper grades, socialisation and behavioural adjustment become even more important. The learning and behavioural expectations of high school are not generally consistent across subject areas. As a result, older students with Asperger's syndrome may have particular learning and organisational difficulties. Although some students may be able to form friendships with others who have similar special interests such as computers or science, the inability of many adolescents with Asperger's syndrome to "fit in", means that many of these students withdraw, become depressed or display aggressive Verbal or physical behaviour.

While students with Asperger's syndrome find it difficult to conform to behavioural expectations in the regular classroom, it is important to remember that children are rarely disruptive without reason. They are likely to disrupt the class due to their lack of ability to focus, confusion, literal interpretation of instructions, inability to read social rules and cues, and hypersensitivity. Inappropriate behaviour may be an indicator of frustration and stress due to too much noise, visual stimulation, or physical stimulation (Jackel, 1996). Gross (1994) suggests that many of the behaviour difficulties experienced by children with Asperger's syndrome result from the overwhelming panic they feel when events in their social world become unintelligible and unpredictable. Attwood (1993) suggests that these students should be taught to use "safety phrases" such as "Are you pretending?" or "What do you mean?" or "Why should I do that?" to gather information. Through using questions like these, students can determine the nature of the situation and are more likely to respond appropriately.

Behaviour and social skill instruction in a supportive, inclusive environment can minimise the difficulties associated with Asperger's syndrome and maximise students' skill development. Behavioural limits and expectations are necessary. Self-calming strategies can also reduce a student's anxiety and foster self-control. For example, students can learn to develop their own calming strategies like those described by Donna Williams. She suggests that personal calming strategies like stroking a hairbrush or softly tapping in time with a silent tune can become acceptable classroom behaviour for some students (Williams, 1992).

Further to this, Barber (1996) describes an interesting technique that targets classroom behaviour. In this intervention, a fifteen-year-old student with Asperger's syndrome was presented with a list containing appropriate and inappropriate behaviour. The student was asked to put a tick or a cross after descriptions of behaviour he considered to be good or bad. This approach is based on a system advocated by Spence (1985) where students are encouraged to identify their own problem areas rather than being told by others what behaviour is unacceptable or inappropriate. The student in Barber's (1996) study was asked to indicate behaviour that was a particular problem for him and discuss why. For example, when the student ticked the behaviour on the list that said: "Stay in your seat and do not get up and wander around the room", he commented:

"Sometimes my legs seem to twitch and I feel an urge to get up. Sometimes I want to learn other things and the other pupils are getting on with the work. The teacher is saying things that I already know. Having above average intelligence has its disadvantages!"
(Barber, 1996, p.22).

This technique also provides an opportunity for the teacher and student to acknowledge behaviour that is already acceptable. Later in the intervention, the student was asked to think about, talk about, and write down why he behaved in certain ways in certain circumstances, and to consider the effects his behaviour had on teachers, other students, and on his learning. He was also asked to provide

suggestions for controlling problematic behaviours. As a result of this approach, the student recognised that he was giving the teacher and the students the impression that he was disobedient, when at times he was eager to learn but did not want to repeat material that he knew, or did not want to copy work from the board. The end result of Barber's (1996) work was a behaviour plan formulated by the student and his special education teacher that focussed on the student identified problem areas. As part of this plan, the student communicated to his teachers what steps he intended to take to improve and maintain his behaviour. He also graphed his own progress and chose a suitable reward schedule. The student contributed to the final summary of the project and wrote a letter to members of staff thanking them for their participation in the study.

This approach or aspects of it could also prove successful for other students with behaviour difficulties. The discussion and reflection sessions which focus on appropriate behaviour coupled with guided student involvement in planning combine powerfully to increase students' understanding of the social importance and consequences of behaviour.

CHALLENGES FOR THE TEACHER: COMMUNICATION

As most children with Asperger's syndrome have a literal understanding of language, their teachers' style of communication is very important. For these students, communication is most effective when implicit meanings are made explicit and irony and idiom avoided (Gross, 1994). For example, if a teacher makes a comment like, "You will have to pull up your socks"; the child with Asperger's syndrome is likely to say - "But they are not falling down." Effective instructions for such students need to be brief, concise, and concrete. Time should be allocated for the student to process the language of the instruction and then proceed with the task. Complicated instructions or concepts should be broken into manageable steps. The teacher should strive to be consistent and clear and, thereby, limit opportunities for inappropriate responses.

Regular communication between parents, students, teachers, teacher aides, administration, and specialists is a necessary part of a successful school program for students with special needs (Carrington & Graham, 1997). A daily communication book is useful. It can inform parents of their children's successes and failures and convey information between home and school. Such a simple way of ensuring communication can help all involved work together to understand and address puzzling and challenging behaviour (Attwood, 1993).

CHALLENGES FOR THE TEACHER: CREATIVITY IN PLANNING

Teaching students with diverse abilities requires creative planning and good classroom organisation. Students with Asperger's syndrome make particular demands on teachers within the complex environment of the regular classroom. Because children with Asperger's syndrome have idiosyncratic interests, there will be no set ways to modify the curriculum. Their fundamental difficulty with perspective taking may mean, however, that modifications would be useful where children are expected to make inferences about others' intentions or feelings. For example, comprehension or study questions, such as "How would you feel...?" or "Consider what the author meant by...." pose considerable difficulty for students with Asperger's syndrome (Gross, 1994).

Episodes of "Mr Bean" have been used creatively with some students who have Asperger's syndrome. The hapless Mr Bean is an extreme example of an individual who has difficulty with perspective taking and does not read or respond to social situations appropriately. His "adventures" can be used to explain social situations and to help students understand how other people may feel or think in certain circumstances (Beasley, 1997). Role-plays based on situations from "Mr Bean" can provide many opportunities for discussion.

In a similar vein, the SBS television production "I'm Not Stupid" (SBS, 1997), depicts a group of adults with Asperger's syndrome learning about appropriate interactions with strangers. In one scenario, a trainer pretends she is a teenager walking down the street in ripped designer jeans. Another trainer pretends to be a stranger and comments - "I know where you can get your jeans mended!" The comments of one participant with Asperger's syndrome are particularly illuminating. He observes only that the stranger should have paused before speaking, not that the comment about getting the jeans mended misinterprets the fashion statement made by the wearer. This illustrates the typical lack of understanding of social situations experienced by individuals with Asperger's syndrome. Later in the video, the group discusses why it is inappropriate to comment on a stranger's choice of clothing. Role-plays followed by discussion can help students understand the social rules that underlie classroom

and playground interactions. By rehearsing and practising how to handle various social situations, students can begin to generalise skills to various social settings.

Teachers may need to reconsider the learning outcomes of classroom activities for students with Asperger's syndrome and creatively plan for their differences. The following observation during a grade two science activity illustrates this notion. Students were instructed to sort various types of animals into the categories of mammals, birds, etc. They were required to cut out pictures of the animals from one worksheet and glue them under category headings onto another worksheet. A student with Asperger's syndrome in the class had enormous difficulty with this task.

What was particularly difficult for this student was not the categorisation task but the cutting and glueing. He was consumed by the sensation of glue and paper on his fingers. He was overwhelmed and, as a consequence, very disruptive. However, when questioned about the pictures and categories, the student could provide more detailed information than usually expected in grade two students. Changing the learning activity for this student would have been a creative way of adapting the curriculum. For example, the student could explain his categorisation of animals to the teacher, or a peer. Alternatively he could draw the animals rather than cut and paste the pictures. Changing the type of teaching activities may decrease the chance of disruptive behaviour in the classroom for some students.

Another creative idea for casing students with Asperger's syndrome into regular classrooms concerns the alternate use of funded teacher aide time. Teacher aides have traditionally been used to support students during class activities. However, teachers may opt to use their aide time to explicitly reinforce and monitor the social interactions and behaviour of students with Asperger's syndrome while eating and playing with peers during recess and lunch. This can create a solid framework of positive interactions during free time that students can build on during class time.

It is important to also observe the behaviour of the classmates of students with Asperger's syndrome. Some children may bully, annoy, or taunt students with Asperger's syndrome because of their differences. Gross (1994) provides the following simulation to help classmates understand the difficulties experienced by individuals with Asperger's syndrome: Divide the children into groups of four. One member of the group leaves while the rest think up a new "rule" for social behaviour. For example, when talking to someone you must start each sentence with a particular word or phrase, or stand nose to nose. The excluded student then rejoins the group. While students perform a cooperative task, the excluded student has to work out what the new social "rule" is. At the end of the activity, the teacher asks questions like: "How did it feel not to know the rules of how to behave?" The teacher and students then discuss the unspoken rules which operate in everyday life within our culture (such as "it is rude to stare") and brainstorm ways to make them explicit. The point of this exercise is to illustrate that while most of us pick up the rules of social interaction almost incidentally, there are some people like those who have Asperger's syndrome who need to be taught these rules.

CONCLUSION

Asperger's syndrome is characterised by impairments in social interactions and communication, and a restrictive pattern of behaviours and interests. Students with Asperger's syndrome present a particular challenge to their parents, teachers, special educators, and peers. It is, therefore, important for teachers to be aware of the unique characteristics of children with Asperger's syndrome. Teachers play a vital role in developing the adaptive and compensatory strategies needed for these individuals to participate in the school community appropriately. The challenge for teachers lies in orchestrating these planning and teaching strategies in order to facilitate the learning of students with Asperger's syndrome in the regular classroom.

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Correspondence: Dr Suzanne Carrington, School of Learning and Development, Queensland' University of Technology, Brisbane, Australia. sx.carrington@qut.edu.au