

Submission
No 45

**INQUIRY INTO THE PROVISION OF EDUCATION TO
STUDENTS WITH A DISABILITY OR SPECIAL NEEDS**

Organisation: Autism Spectrum Australia

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Inquiry into the provision of education to students with a disability or special needs

Autism Spectrum Australia (Aspect) submits the following evidence to the General Purpose Standing Committee No.2 in relation to the education of students with an autism spectrum disorder (ASD). The submission highlights the particular educational challenges faced by this substantial group of students.

Aspect has developed and delivers a specialised educational program for school-age students with an autism spectrum disorder. The program provides an intensive specialist solution to the educational needs of students within a reasonable economic framework for both governments and carers. The particular approach developed by Aspect, the *Aspect Comprehensive Educational Approach (ACEA)*, recognises the educational needs of all school-age children on the autism spectrum. A summary of the Aspect Comprehensive Educational Approach can be found in Appendix 1.

Currently Aspect operates six schools and seventy-eight satellite classes hosted in mainstream New South Wales Department of Education (DET) and Catholic Education Office (CEO) schools. In total there are seven hundred students in Aspect schools in the Hunter, Central Coast, South Coast, North, South and Western Sydney.

A key feature of Aspect's educational approach is the transition of students to more inclusive educational settings. Aspect transitions between 80 and 100 students annually to more inclusive settings. To explore the outcomes for students exiting Aspect schools, a number of research and evaluation projects have been completed that highlight very positive long-term outcomes (see Aspect Research Insights paper attached). Aspect supports and reinforces the importance of educational inclusion by giving students the skills and structures that enable them to manage in a mainstream environment. This philosophy is further supported by the Aspect Education Outreach team, which delivers support to students, families and teachers in mainstream school settings.

Research indicates a prevalence rate for ASDs of 6 per 1000 (Fombonne, 2005; Wray & Williams, 2007). In the Australian study based on these prevalence rates, the core finding was that there is an estimated 10,625 children aged between 6 and 12 years with an ASD in Australia. Based on rates of 6 per 1000 about 43,000 people in NSW have an ASD (based on 2002 ABS population data). This can be extrapolated to include an estimated 11,000 children 0-18 years.

A very recent research study conducted in the U.K. suggests that this figure may be even higher with a prevalence of 1 in 100 (Baron-Cohen et al., 2009). The high prevalence rates of ASDs and associated large numbers of school-age students in Australian schools highlights the urgent need for education providers to make available appropriate education provisions and ensure equal access for all students on the autism spectrum to these services.

We will now respond to the Terms of Reference as set out in the invitation to submit evidence.

1 The nature, level and adequacy of funding for the education of children with a disability.

All individuals with an ASD are identified with impairments in social interaction, communication and a tendency for inflexible patterns of thinking and behaviour (Volkmar & Klin, 2005). Individuals with an ASD may possess relative strengths in visual-spatial processing, rote memory and attention to detail, yet experience difficulties with flexible thinking, planning and organisation.

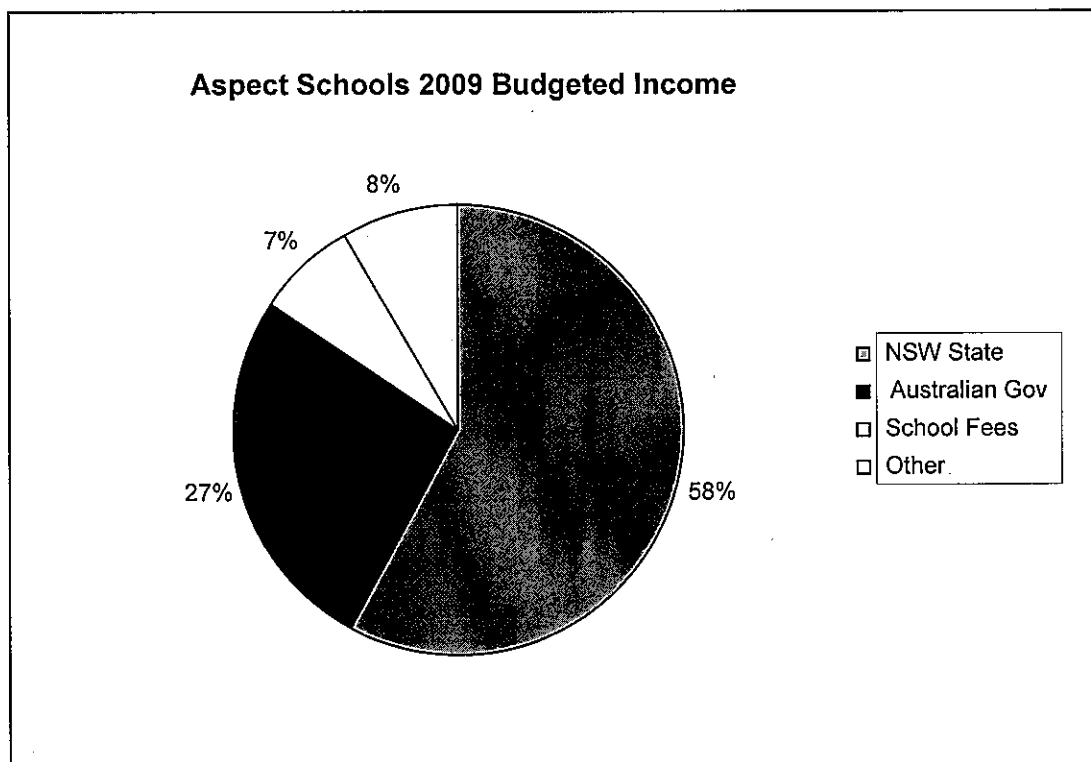
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As a result of these impairments and unique learning styles, students with an ASD often experience significant challenges in education and community environments that are not aware of or responsive to their particular needs. As a result many fail in the education system with some being school-excluded, targets of bullying, suffer depression and anxiety and are often misunderstood by educators, peers and the wider community. Research by Bottroff and Slee found that 62% of students with Aspergers Syndrome report being bullied once a week or more often. This can be compared with approximately 18% of the Australian population as a whole (2008).

Levels of funding support and educational service provision vary greatly from state to state. Currently, many students with an ASD in Australia are not receiving the appropriate educational supports and services they require to meet their diverse learning needs.

To support the complex educational needs of students with autism spectrum disorder a high-level of funding is required from a range of sources. Currently, the average annual cost of educating a student per annum in an Aspect school is \$40,000. Income is currently derived from a combination of sources including the non-government special schools Supervisors Subsidy Scheme (New South Wales Department of Education & Training, NSW DET) that pays teachers' salaries (on the basis of 1 teacher salary for every 4 students with an autism spectrum disorder enrolled) and the Australian Government's General Recurrent Grant, Literacy, Numeracy & Special Education Learning Needs(LNSLN) and the Schools Grants element (Department of Education, Employment and Workplace Relations, DEEWR).

A summary of the consolidated schools 2009 budgeted income (excluding capital funding) is outlined below:



The majority of income to Aspect schools (85%) is received through government funding. The New South Wales Department of Education and Training (DET) continued to contribute the major share of government income being 58% in 2009. Funding from the Australian Government, through DEEWR accounted for 27% of government income to schools. Although funding from DEEWR is substantial (\$6.7m budgeted in 2009), the amount of funding that Aspect schools receive from the Australian Government under its Literacy, Numeracy & Special Learning Needs (LNSLN) Program has not increased sufficiently in accordance with the significant increase in the numbers of students with disabilities.

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As income from government (Australian and state) funding programs is insufficient to cover all costs Aspect must raise additional funds through school fees and fundraising initiatives. There is an increasing challenge to meet the costs of educating students with autism in Aspect schools. Despite the increase in school fees in 2009 Aspect is still not able to cater to the unmet need for specialist education demanded by parents and carers.

It is important to note that most autism-specific schools and services in most Australian states receive a much lower level of funding support than those in New South Wales. To improve the range of appropriate educational services across the country a substantial increase in the level of funding by the Australian and State government will be necessary.

Nationally, students with a disability in independent schools receive significantly less government funding for their educational support needs than if they were educated in a government school (Daniels, 2009).

In 2007 Monash University released a project report 'Investigating the Feasibility of Portable Funding for Students with Disabilities', which identified that because of the inadequate level of funding and lack of parity across sectors, reform of current funding arrangements was found to be more important than portability. The advantages and disadvantages of four funding models were assessed: an educational allowance model; a limited voucher model; a student outcomes model; and a program model.

The report makes five recommendations:

1. The nine objectives of a funding model for students with disability (listed below) be adopted as the goals of reform of the current arrangements;
2. Reforms be undertaken in stages and managed to ensure smooth transitions to new arrangements;
3. The first stage of reform should be devoted to increasing the overall level of funding available for students with disability in schools; securing national agreement on definitions of disability and associated funding; providing parity of funding across sectors;
4. The level of Strategic Assistance (per capita) payments be increased for non-government schools under the Schools Grants element of the Literacy, Numeracy and Special Learning Needs Programme; and
5. Increases in funding for students with disability in non-government schools be tied to a requirement that parents/guardians of each student are consulted on the best uses of the funding.

Funding arrangements should:

1. Tie the funds provided to accurate indicators of actual costs, so that no student with disability or provider is disadvantaged by under-funding;
 2. Be based on definitions of disability and educational needs and minimum funding levels for each category/level that are agreed across all Australian jurisdictions;
 3. Promote increased efficiency in the use of all resources to enable the widest possible benefits to be achieved;
 4. Provide parity of funding across education sectors;
 5. Promote an ethos of inclusivity, to minimise the stigmatisation and segregation of students with disability and to promote their access to mainstream curricula;
 6. Promote a sense of empowerment among parents of students with disability in decision-making about the education of their child;
 7. Promote the building of capacity within education sectors to meet the needs of all students with disability effectively;
 8. Have a strong focus on student outcomes; and
 9. Promote certainty among students with disability that they will continue to receive the same or better levels of support if they move to a different school, sector or state.
- (Ferrier, Long, Moore, Sharpley & Sigafos, 2007, pp.97-98).

Aspect took part in the Monash research study and fully endorses the recommendations outlined above.

2 *Best practice approaches in determining the allocation of funding to children with a disability, particularly whether allocation should be focused on a student's functioning capacity rather than their disability.*

Aspect puts forward its comprehensive approach as a best practice model for students with an ASD to prepare them for a successful experience in an integrated setting. Aspect's research into the long term outcomes of students who have successfully transitioned from its program supports our contention.

At the same time Aspect recognises the importance of parental choice in the type and location of their child's education. Because autism includes a spectrum of disorders children present with very different functional abilities and learning needs. Therefore it is essential that the full range of specialist to inclusive learning environments is available throughout all stages of a child's education. This will include at different stages of a child's learning, the additional therapies that are essential to support their learning and development.

It is important that funding is linked to a child's functioning capacity, as long as this is regularly reviewed, as they grow and develop. In order to ensure all facets of the learning needs of a child with an ASD are catered for and adequately funded any definition and assessment of functioning will need to include both developmental and cognitive indicators.

The issue is that funding based on the assessment of educational need relies on the assessment methodology being inclusive over all levels of need from low to high. The issue for students with ASDs is that any functional assessment also must include those students with Asperger's disorder/High Functioning Autism who may perform on IQ tests in average or above average range. Therefore to ensure these students, many of whom have very complex social, behavioural and learning needs, are eligible for funding, the criteria for functional assessment need to be transparent and inclusive of students with a wide range of abilities.

Currently, in other states in Australia this group cannot access educational funding due to their ability to function in the average/above average range in some areas of their learning and development. In NSW Aspect does work with these students along with those on other parts of the autism spectrum, however, to fully meet the needs of all students on the spectrum in NSW more dedicated funding is required. Further, Aspect believes that due to the complex needs of students with an ASD high levels of funding support are required to ensure all aspects of a student's learning and development are adequately resourced, as outlined in our response to Point 1.

3 *The level and adequacy of current special education places within the education system.*

An expanding body of genetic research is revealing the complexity of ASDs, which suggests that there may be many subtle differences also within the spectrum (Rutter, 2005; Happe, Ronald & Plomin, 2006). There is a wide range of presentation and some individuals have additional disabilities or conditions (Reitzel & Szatmari, 2003). Therefore, although sharing core characteristics, these will be manifested in different ways in each individual with an ASD. These differences highlight the importance of utilizing autism-specific teaching approaches that are tailored to the needs of individual students.

Hence a 'one size fits all approach' is not appropriate for the range of individual needs at all times. A specialised comprehensive multi-faceted approach is required to support the educational needs of students with an ASD. A flexible approach to service provision should involve a continuum of special education services. This continuum should include special school placement, small support or satellite classes staffed by ASD-specialist teachers in mainstream schools, ASD-

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specific itinerant teacher services to support students who are included in mainstream classes (Jones, 2002; Batten et al., 2006) and full mainstream school placement. All of these options are available in New South Wales, which does have a more intensive and supportive approach to the education of children with an ASD than any other state.

Aspect asserts that the current number of supported placements for children with an ASD is inadequate. Currently Aspect has 6 schools with a total of 700 students enrolled. Aspect is aware of another 650 children who would like to be part of our program. As a result Aspect works closely with both government and non-government education providers to ensure as many specialist places as possible are available to provide a continuum of services for children and their families. For many students in NSW, however, in government and independent schools special education support is not adequate, especially considering the increasing numbers of students with an ASD. We would like to see the development of greater government and non-government collaboration in order to provide the services needed by children with an ASD in a timely manner.

No matter what the type of educational placement or setting, the focus of all education for students with an ASD should be the acquisition of skills to facilitate transition and integration into more inclusive education and community environments.

4 *The adequacy of integrated support services for children with a disability in mainstream settings, such as school classrooms.*

Given the challenges faced by the students with an ASD in school settings and their specialised support needs, it is important that following an application for an educational service, enrolments should proceed in a timely manner. Research indicates that students with an ASD are excluded from schools at higher rates than students with other disabilities and considerably higher rates than students without disabilities (Batten et al., 2006; Humphrey, 2008). A South Australian parent survey suggests that the situation is similar in Australia (South Australia Parent Autism Spectrum Disorders in Education Committee, 2005). Accordingly, timely enrolment in an appropriate service is essential to ensure positive learning outcomes and enhance quality of life. It is not acceptable that students be forced to wait for a service due to lengthy wait lists that result from a lack of appropriate or inadequate levels of services.

As highlighted in the previous point Aspect has a significant waiting list of children and families seeking specialist ASD support for their children to enable them to learn to function in mainstream settings. Whilst they are waiting for a school placement, these and other children in mainstream schools, can access the Aspect Education Outreach service. Aspect Educational Outreach is a specialist autism intervention team that provides a range of direct and indirect services to children, adolescents, families, schools, and to the wider community. The philosophy of Educational Outreach is based on collaborative partnerships with parents, schools, and other professionals.

Ongoing consultations are available to children who have an autism spectrum disorder (ASD) and who are enrolled in inclusive / mainstream educational settings in NSW and ACT. Educational Outreach also offers collaborative consultancy support for students enrolled in Support Classes and in Schools for Special Purposes (SSPs).

The Aspect Educational Outreach team provided a service for 329 new clients in 2009 in addition to follow-up services for existing clients. The team has close working relationships with several of the Catholic Diocese education offices and with regional Department of Education personnel. The need for specialist support for students with autism, especially high functioning autism or Aspergers disorder, increases annually. Currently the DET and CEO provide teams of support teachers who often require additional specialist support in order to maintain children with autism in their mainstream school placements. Aspect's assessment is that the level of support is still not adequate as highlighted by the high demand for its Educational Outreach service. Further support

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in an integrated setting is an important priority, particularly for children with high functioning autism or Asperger's disorder, who often do not qualify for funding.

5 The provision of a suitable curriculum for intellectually disabled and conduct disordered students.

Children with an ASD can be both intellectually disabled and conduct disordered in a range of severities and levels of presentation. They can present with extremely challenging behaviour whether they have an intellectual disability or not.

Educating students with an ASD requires an understanding of the unique cognitive, social, communication, sensory and behavioural deficits that characterise autism. The need for autism-specific curricula has been identified as a critical component of intervention (National Research Council, 2001; Iovannone et al., 2003; Arick et al., 2005).

Educational services should therefore address the core impairments of ASDs; social competencies, communication skills and learning style. Converging evidence has also confirmed the presence of elevated levels of atypical sensory responding in children with ASDs (Baranek, Parham & Bodfish, 2005).

Problem behaviours and evidence of increased levels of anxiety in children with ASDs (Janzen, 2003; Chalfont, Rapee & Carroll, 2006) reflect the daily challenges in socio-emotional relating, communication and learning. Positive behaviour support should be underpinned by assessment and interventions that focus on skills development and replacement behaviours rather than simply attempting to eliminate particular problem behaviours (Powers, 2005).

As families are the most stable and influential people in the child's environment, collaboration between parents and educators is considered an essential part of educational intervention (Iovannone et al, 2003; Simpson et al., 2003).

Educational programs and services that are inclusive of autism-specific curricula will support students to maximise their learning potential and adaptive functioning and to also develop the independence needed for participation in the wider community and the Aspect Comprehensive Educational Approach provides the underpinning for such a curriculum.

National Curriculum

Aspect fully supports the ideal that a National Curriculum is predicated on a belief that all children should be given the same opportunities to succeed and to reach their learning potential. However, it is also acknowledged that this assumption is based on a particular philosophy of education which is not uncontentious. Cognisance needs to be given to the philosophy that the aims of education can be different for certain groups of children at different points in their education and life-long learning. The Aspect education system is based upon a philosophy that puts the needs of the individual child first and accepts that their social, communication and developmental needs are the core around which the other aspects of school based learning are built. This includes the subject based curriculum.

The development of a National Curriculum creates a dilemma in the education of children with disabilities. On the one hand, it is positive that all children are entitled to the same curricula opportunities and that the expectations of all children, whatever their abilities, are equal. On the other hand, professionals who work with children with disabilities know that their needs are different from the norm and that the imposition of a standard National Curriculum negates those wider developmental needs.

Therefore, the introduction of a National Curriculum has to take into account the needs of all children at the outset. Making the modification of the curriculum the responsibility of schools undermines the objective of ensuring the same curricula opportunities for all children. For example, when the achievement levels for each subject area are set they need to take account of

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the fact that some children (despite the key stage of which they are a part) will not be functioning at the minimum level. The UK National Curriculum Council had to retrospectively develop pre-level one criteria for those 'working towards' level one. We have the opportunity to learn from that experience and to ensure the needs of all students are incorporated in all planning and implementation documents.

Aspect will incorporate the subjects of the National Curriculum within the Aspect Comprehensive Educational Approach in the same way that the current Board of Studies key learning areas are incorporated. However, it would be more beneficial if the new curriculum developments took into account the key learning needs of children with a disability in the design rather than expecting schools to make the adjustments to enable all children equal access to the prescribed learning.

6 *Student and family access to professional support and services, such as speech therapy, occupational therapy, physiotherapy and school counsellors.*

In the provision of autism-specific curricula, education providers should also consider established evidenced based behavioural and educational treatment approaches that have demonstrated positive outcomes for students with an ASD (National Standards Report, National Autism Centre, 2009). Established treatments or approaches range from traditional behavioural treatments to more naturalist teaching strategies and comprehensive approaches. See the theoretical underpinning for the Aspect Comprehensive Educational Approach in Appendix 1, which outlines the importance of embedding the therapeutic interventions into the learning of students.

Aspect advocates a multi-disciplinary approach to teaching and learning that involves a team of specialists working together to plan, implement and assess the needs and outcomes of students. The Aspect multi-disciplinary team includes speech and occupational therapists, school and family counsellors, teachers, and family members. Each team member contributes their specialist knowledge in order to develop an individual education plan for each student that will guide their learning and development.

The therapy teams in Aspect schools contribute to the overall success of the Aspect transition to inclusion model. However, therapy positions are particularly difficult to fund, which means that on occasions when budgetary constraints apply it is the therapy position that can go unfilled in some schools. Aspect believes that a full therapy team is essential to support the learning of children with autism as evidenced in the paper outlining the Aspect Comprehensive Educational Approach. At the current time we are unable to employ a full team in all of our schools due to funding constraints.

Also, parents often look for additional support outside of schooling for specific therapeutic interventions, particularly speech and occupational therapy. A recent study of early intervention provision highlighted that most children were experiencing between 1 and 7 additional interventions during the year of the research (Parmenter, Evans, Roberts, Williams, Carter, Silove, Clark and Warren, 2009). Each meeting with a therapist for a specific intervention will cost the parents a significant amount of money. One parent reported that she had spent one hundred and twenty thousand dollars on a year of Applied Behavioural Analysis therapy for her son. She was not happy with the outcome and was now seeking other interventions to support her son's development.

Aspect supports parents accessing evidence based therapies but acknowledges that the additional cost of providing such therapies can be onerous both financially and emotionally for families. We consider it is essential that Aspect school based multi-disciplinary teams are able to function in support of the education of the whole child. Adequate funding is required to ensure all children have equal access to the support they need.

7 The provision of adequate teacher training both in terms of pre-service and ongoing professional training.

Research has shown the importance of trained and knowledgeable staff, who are adequately supported, in whatever educational placement students with ASDs are enrolled (National Research Council, 2001; McGee & Morrier, 2005; Department of Education, Employment & Workplace Relations, 2007a & b).

Current initial teacher education in Australia is inadequate to meet the needs of children with a disability or special education needs. In NSW the universities are required to include a module on learning disability in the pre-service courses. This tends to be a single unit that lasts for one year with a one or two hour lecture and a two hour tutorial each week. This is a positive initiative but is not really adequate time for students to learn all they would need to know to cope with the range of learning difficulties and disabilities with which they might be confronted in any mainstream classroom. There are very few full time special education degrees in Australia. The University of Canberra runs a post-graduate program supported by Aspect that aims to give teachers and other education professionals the skills and knowledge to work with children with an ASD.

The Aspect Education Outreach team also provides considerable amounts of in-service professional learning for schools and other professional groups to build capacity in those who deal regularly with young people with an ASD in mainstream or special schools.

Professional development is one of the elements of the Aspect Comprehensive Educational Approach and includes regular updating of skills and sharing of knowledge and experience for Aspect staff.

Conclusion

All students with an ASD share a unique pattern of impairment and learning characteristics that vary widely in presentation. As a result, they experience significant challenges in educational environments where few or no autism-specific provisions or curricula modifications are in place. No one single approach will be effective for all students across the autism spectrum. Therefore a range of educational programs and services are required to meet the needs of this unique population of Australian students.

It is the responsibility of both government and non-government education providers to provide appropriate educational services and supports. No child should be required to wait to access an appropriate service.

Educators should ensure that services for students with an ASD are based on sound evidence and quality indicators, and in doing so, include flexible, multi-faceted approaches that cater to the diverse needs of students on the autism spectrum. There should be a substantial increase in research that aims to explore the most effective approaches and educational practices for students with an ASD.

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Appendix 1

The Aspect Comprehensive Educational Approach

The Aspect Comprehensive Educational Approach (ACEA) is derived from over forty years experience of operating services for children with autism spectrum disorders (ASDs). The term 'comprehensive' refers to ASD specialised programs that include a skill development focus together with therapeutic interventions, using a multi-disciplinary team including parents (Herin & Simpson, 1998; Perry & Condillac, 2003). Intervention takes place in multiple settings including home, school and the community. The Aspect evidence-based approach recognises the value of referring to multiple sources of information including empirical research, theoretical papers, models of best practice and autobiographical perspectives, to provide high quality education for students with ASDs.

Why a comprehensive approach?

The nature of ASDs indicates that although there is a need for specialised educational intervention, as a spectrum disorder, a 'one size fits all approach' is not appropriate for the range of individual needs of all students at all times. The Aspect Comprehensive Educational Approach acknowledges that within a set of standard procedures and core curriculum, different teaching tools, interventions and techniques may be used at different times during a child's development. The approach also recognises the transactional and interactive nature of ASDs, whereby the learning environment, curriculum, and persons interacting with the individual, all influence development (Wetherby & Prizant, 2000).

Aims of the Comprehensive Educational Approach

The Aspect Comprehensive Educational Approach aims to:

- Develop a student's skills to facilitate participation and ongoing education in the wider community
- Maximise each individual's learning potential and adaptive functioning
- Develop students' self-regulatory abilities and independence.

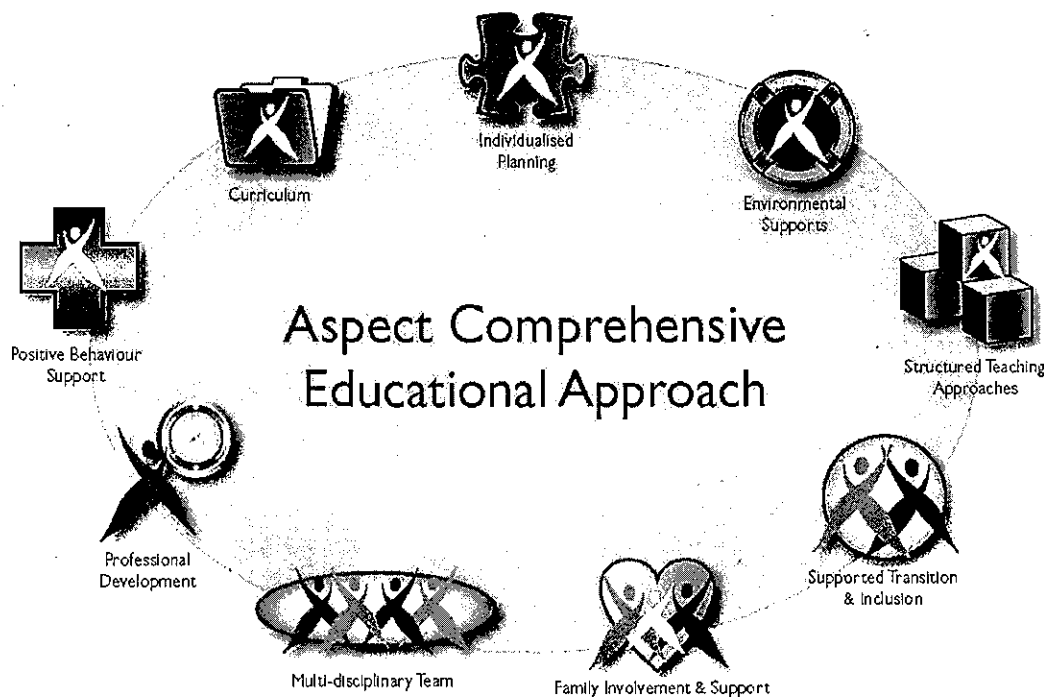
Principles

Five Principles underpin The Aspect Comprehensive Educational Approach (ACEA):

1. The ACEA is inclusive of all variants of autism spectrum disorders
2. Interventions support all areas of the child's development and are based on an assessment and evaluation of individual needs
3. The approach is a positive supportive model rather than a deficit approach, acknowledging the learning style, strengths and interests of children with ASDs
4. Aspect's approach involves co-operation and collaboration between parents, carers and professionals
5. The approach is based on ongoing reference to research and clinical literature and may therefore be inclusive of other interventions.

Elements of the Aspect Comprehensive Educational Approach

The Aspect Comprehensive Educational Approach includes a specialised curriculum and a focus on skills training underpinned by individual assessment and planning. The approach recognises the important role of transactional supports and includes environmental supports, structured learning and positive behaviour supports. System supports include professional development, a multi-disciplinary team approach and family involvement. Aspect endorses a collaborative approach to transition to more inclusive educational placements that prepares both the students and the receiving school.



Key

- Student Focus
- System Focus

1. Individualised Planning

Aspect recognises the importance of Individual Plans (IPs) in promoting and maximizing the potential of every learner. Their importance has been highlighted in current research (Iovanonne et al., 2003; Siegel, 2003; Rubin & Laurent, 2004). The broadening of the concept of autism to a spectrum disorder included recognition that a 'one size fits all approach' is not appropriate. Individualised Plans (IPs) form the cornerstone of service provision across all Aspect educational services.

For schools, Individual Education Plans (IEPs) provide long and short term learning goals across curriculum areas according to the age and support needs of the students. Long term outcomes, indicators of progress, assessments, strategies and teaching resources are documented on an IEP planning form.

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Programs are based on developmental and/or functional assessment and may be implemented on a one to one basis or during class group activities. Functional programming refers to the development of functional skills for current and future learning needs. Functional programs complement developmental learning and consider self-care, leisure and life-skills. Functional planning (for example using a computer or cooking) starts early, with the aim of increasing independence and inclusion in the community, and gradually increases as students become older.

Research highlights the benefits of carefully documenting a child's individual profile of strengths, support needs and response to intervention. IEPs are developed collaboratively with parents and a multi-disciplinary team, and are evaluated and modified according to ongoing data collection and regular review. Individual Educational Planning meetings are conducted annually, with formal evaluation and reporting of learning goals occurring at three monthly intervals and informal evaluation occurring daily and weekly. As students become older, there is an increased focus on person-centred planning & self-determination.

2. Curriculum

Four core curriculum competency areas inform the content of Aspect's individual educational and class group programs. The term core competency refers to the core challenges and specialised learning needs of students with ASDs. For school-aged children, core curriculum competencies are integrated into the New South Wales Board of Studies mainstream curriculum.

Sensory: Clinical and biographical reports describe atypical patterns of sensory processing, including hypo/hyper sensory responses/sensitivities and problems with filtering sensory input (Keane, 2004; Baranek et al, 2005). Survey research has confirmed the elevated levels of atypical sensory responding in children with ASDs in comparison with their typically developing peers (Taylay-Ongan & Wood, 2000; Dunn, Saiter & Rinner, 2002). Program priorities include identification, assessment and remediation of sensory challenges, supported by occupational therapy as necessary. Strategies may include environmental modification, visually supported learning, increasing tolerance to sensory stimuli and sensory related activities (Baranek, 2002; Koegel et al, 2004; Baranek et al., 2005).

Social: Overwhelming research evidence indicates atypical social development as the most defining aspect of ASDs, commencing early in life (Chawraska & Volkmar, 2005) and affecting children across the spectrum (Carter et al., 2005). Aspect's programs are informed by careful assessment of individual needs and transactional supports (Laurent & Rubin, 2004). Areas addressed may include recognition and expression of emotions, sharing attention, early interaction, play, social understanding, peer interaction, self-regulation and perspective taking (Baron-Cohen, 2000a; Mundy & Stella, 2000; Hobson, 2002; Jackson et al., 2003; Dawson et al., 2004). Aspect staff utilise a range of interventions including play, cognitive strategies, peer support, using strengths & interests and social skills groups (Grandin, 1995; Rogers, 2000; Wolfberg, 2003; Rubin & Lennon, 2004; Keane, 2008).

Communication: In ASDs communication is characterised by atypical semantics (meanings), pragmatics (social use) and paraverbal (facial expression, gesture and voice tone) communication (Prizant, 1983; Howlin, 1998a; Twatchman-Cullen, 1998; Wetherby & Prizant, 2000). In order to foster their students' comprehension staff may adjust their communication style, using modified facial expression or gesture, allowing time for students to process information and clear, concise language. Aspect's approach to assessment and teaching recognises the range of communicative competencies; from individuals with little or no verbal communication to those who are highly verbal yet experience problems with abstract processing, and social communication (Paul, 2005). A broad range of assessments and interventions are utilised to develop comprehension, expression and pragmatics.

Learning & Behaviour: Individuals with ASDs have uneven patterns of cognitive development, with relative strengths in visual processing and/or rote memory and challenges in goal-directed behaviours, abstracting and using information, and flexible thinking (Ohta, 1987; Wing & Gould, 1979; Marans et al., 2005). Difficulties with organising information, skills generalisation and problem solving (Sainsbury, 2000; Hughs et al., 2001; Lawson, 2001) arise from this atypical learning style. ASDs are characterised by a tendency to circumscribed patterns of behaviour and activity (American Psychiatric Association, 2000). Programming focuses on developing supportive and structured learning environments, assessing learning strengths to assist curricula access and developing problem solving abilities (Janzen, 1996; Cumine et al., 1998). As suggested in biographical accounts, particularly for young children, allowing the child to initially participate in activities around their areas of strengths and interests may develop trust and facilitate positive learning outcomes. In older children special skills or interests may be developed as leisure or future vocational options (Grandin, 1996; Sainsbury, 2000).

Key Learning Areas: For school-aged children the core competencies are integrated with the New South Wales Board of Studies mainstream curriculum Key Learning Areas (KLAs). The KLAs provide the framework for the class program through which the IEPs are implemented. Teachers plan a class program based on the regular curricula, which includes English, Mathematics, Science & Technology, Human Society & Its Environment (HSIE), Personal Development, Health Physical Development (PDHPD) & Creative & Practical Arts. Content and delivery may be modified to enhance communication, social understanding, learning and behaviour. Individual goals based on the regular school curricula are developed where the class group program does not sufficiently address specific learning needs. Typical examples are for reading difficulties, receptive language or motor co-ordination problems.

3. Environmental Supports

ASDs have been increasingly conceptualised as a different way of processing and understanding rather than a set of deficits, with individuals having learning strengths as well as difficulties (Grandin, 1992; Baron-Cohen, 2000b). Research highlights the importance of educational approaches modified for the needs of students with ASDs (Jordan, 2005). Environmental supports take into account ecological conditions, a structured approach to programming and provision of learning supports. Environmental supports provide a secure and comprehensible physical setting, provide choice-making opportunities, encourage independence, enhance social competence and assist positive behaviour support (Iovannone, 2003).

Ecological considerations underpinning Aspect's approach draw on theoretical research of the learning style in autism, the TEACCH approach (Mesibov, Shea & Schopler, 2004) and biographical recollections of school-experience. Ecological considerations are concerned with the physical layout of the room. This includes the use of clearly designated areas, seating arrangements and areas for access and non-access to equipment and resources. Audits of sensory factors such as lighting, heating and acoustics are conducted (Batten et al., 2006). This accords with biographical accounts which recommend minimising distracters and the importance of a quiet calm learning environment (Sainsbury, 2000).

The learning challenges of children with ASDs associated with difficulties in organisation and planning indicate a need for a structured yet flexible approach to program planning (Olley, 2005). Classroom strategies include provision of routines, graded change and a planned and organised approach to program implementation.

The third element of a supportive learning environment involves the provision of learning supports to accommodate both group and individual needs. Examples of classroom learning supports include visual presentation of social rules and students' work samples, auditory signals such as songs or a bell and the use of timers to signal the end of free choice activities. Examples of individualised strategies include task segmentation for a student with concentration problems, screens for a student with poor sensory filtering, a visual outline of a class activity for a child with poor verbal comprehension or clear verbal instructions for a child with good language and memory abilities. Low level supports, such as a homework diary for older students in high school satellite

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classes, are also used. The development of individualised supports is underpinned by observation and assessment, as research confirms that as spectrum disorder students present a range of learning strengths and support needs (Arick et al., 2005).

4. Structured Teaching Approaches

With environmental considerations, curriculum content and individual and group planning in place, *structured learning* considers *how* programs are delivered. Structured learning involves systematic instruction and adaptive teaching approaches with the aim of organising information and experiences to match learner needs. This process involves the careful planning of content, strategies, data collection, teaching style and the utilisation of learning strengths and interests.

Evidence from research and practice confirms the value of using rules, routines and procedures to ensure that the day and the week have a predictable order with any changes forewarned and explained (Iovannone, 2003; Mesibov, Shea & Howley, 2004). Evidence suggests that a purely behavioural or naturalistic approach to instruction is inadequate (Howlin, 1998a; Koegel, 2000). Therefore, a structured approach uses either or both of these for different learners or learning situations. Accordingly teachers utilise different strategies according to need. Individual strategies may include task analysis, priming (preparing for an activity/experience), modelling and reinforcement. Systematic instruction also involves data based programming, which facilitates identification of appropriate learning objectives, planning and describing instructional procedures. Teaching is sequenced according to the learning stages of acquisition, practice, generalisation & maintenance.

Aspect staff are encouraged to adopt a carefully considered, positive teaching style, to facilitate attending, responding and engagement. To prepare for new or challenging activities techniques such as priming, verbal rehearsal, social stories may be used (Dodd, 2005; Simpson, 2005). Care is also taken with instructional sequences (eg step-by step approaches, providing scaffolds or framework for tasks) and assisting students with social perception. Response is monitored in situ, so that tasks and strategies can be adapted according to response.

5. Positive Behaviour Support

It is now generally accepted that problem behaviours in children with ASDs arise from underlying difficulties with sensory processing, communication and social competence. Evidence of increased levels of anxiety in children with ASDs (Keane, 2008) reflects the daily challenges in socio-emotional relating, comprehension, communication and learning. Recent research also indicates functioning may be further challenged by disordered development of emotional regulation (Laurent & Rubin, 2004). Aspect supports a positive approach to intervention for problem behaviour. Positive Behaviour Support (PBS) is underpinned by assessment and interventions that focus on skills development and replacement behaviours rather than simply attempting to eliminate particular problem behaviour (Horner et al, 2002).

Where low level problem behaviours occur, an informal assessment of environmental considerations, curriculum content, teaching strategies and any unexpected events or triggers is conducted. Following adjustments and monitoring, the behaviours of concern and successful support strategies are documented. For ongoing or more challenging behaviours, Aspect teachers develop *Behaviour Support Plans*. As part of this process, assessments are conducted. These may include environmental and instructional considerations, antecedents, communicative functions, motivation, collateral skills (eg. language or social skills) and student preferences, fears and phobias. A Behaviour Support Plan typically includes multiple interventions that prevent problem behaviour from occurring, provides for the teaching of appropriate replacement behaviours and changes the way others respond to appropriate and problem behaviours. The aim is to increase skills and move towards self-monitoring and self-regulation.

6. Professional Development

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Staff learning, development and support are a key feature of the Aspect Comprehensive Educational Approach. Advocates have suggested that educating students with ASDs requires an understanding of their social, communication, learning and behavioural support needs (Mesibov & Shea, 1996; Simpson et al, 2003). The need for such knowledge is strongly supported in autobiographical accounts in which understanding teachers are suggested as being a critical factor in effective support (Sainsbury, 2000). Teachers have also reported that prior experience and knowledge of ASDs are beneficial for positive attitude, confidence and developing teaching strategies (Robertson, Chamberlain & Kasari, 2001).

All new Aspect staff members are provided with induction training including ASD specific courses and workshops. Initially, early intervention staff accompany experienced team members for several weeks prior to undertaking cases independently. Similarly in schools new staffs are provided with in situ guidance from experienced colleagues and learning support team members. On-line training is conducted for new staff in remote classes. It is suggested that ongoing and comprehensive training is essential for all staff (McGee & Morrier, 2005). Ongoing training is provided on professional development days, Aspect staff conferences and in seminars on ASD-specific topics presented during regular staff meetings.

Teachers' knowledge of ASDs and adequate levels of support are critical factors in whichever educational setting students are placed (Mesibov & Shea, 1996; Jones, 2002; Batten et al., 2006). Teachers in Aspect satellite classes liaise with staff at the base school where they are also able to access specialist resources.

Staff training and support is closely allied with a multidisciplinary approach with McGee & Morrier stating, "the skills of all their providers must cumulatively combine to create the capacity for a full range of intervention services (2005: 1133)".

7. Multi-disciplinary Team

The Aspect Comprehensive Educational Approach acknowledges the diverse nature of development and support needs of children with ASDs. The team approach endorsed by Aspect is supported by research and best practice (Jordan, 2001; Shulman et al., 2001). Aspect's school learning support and early intervention teams provide support for students, their families and teachers. The Aspect Educational Outreach Service works closely with the speech and occupational therapists and psychologists on school learning support teams. In schools, teachers' aides are valuable members of the multidisciplinary team. A collaborative team approach between teachers and aides, with clear role designation and information sharing has been revealed to be an important factor to ensure positive outcomes for students (Robertson et al., 2003; Simpson et al., 2003).

8. Family involvement and support

Parents are acknowledged as the most stable, influential and valuable people in a child's environment. Research demonstrates that family and child outcomes improve when direct service workers collaborate with parents and caregivers to determine and support child and family needs (Howlin, 1989b; Marcus et al., 2005). Aspect's philosophy is underpinned by a high degree of family involvement in intervention planning and delivery. Key concepts include relationship attunement, emotional communication, strength building and supportive networks.

Providing education and training and building support networks is fundamental to family functioning and child development outcomes (Marcus et al., 2005; Wetherby & Woods, 2006). Aspect's approach to family education and support ensures learning and networking opportunities are available to all families. The Building Blocks® Early Intervention program delivers a range of consultancy and education support programs for families. Aspect schools organise regular training and support sessions and provide a family counsellor to assist in home-based support needs. Parents are involved with the development of IEPs, liaise daily with staff via means of a child's communication book and are able to meet or talk to staff as required.

Aspect's Building Links™ and Recipe for Success™ programs provide workshops for families in different locations around New South Wales. Aspect Educational Outreach, Diagnostic Assessment and Behaviour Intervention Services provide individualised professional support and consultancy for parents. The *Someone To Turn To*™ program facilitates parent to parent support. Sibling camps offer support, provide information on ASDs and are a valuable opportunity to meet others who are siblings of children with ASDs.

9. Supported Transition and Inclusion

Aspect's philosophy endorses a model of service provision that focuses on inclusion in the general community. Supporting transition into more inclusive educational settings is therefore a key element of the Aspect Comprehensive Educational Approach.

Aspect recognises that in order for learning to be effective, skills should be generalised beyond the classroom and home and into the general community.

When taught in natural settings, some targeted skills become more meaningful and have higher likelihood of generalising to real life situations. Community access programs facilitate functional programming, whether it is play development for young children, educational excursions for older children or living skills for adolescents. Community access assists in overcoming fears and phobias, visiting places of interest and preparing for future learning environments. Community access also provides opportunities to expand leisure activities and learn new skills, such as a sport or using public transport.

The decision to transition a student from an Aspect school into a more inclusive educational setting is made by the staff of Aspect in consultation with the child's family. Transition can be stressful for any student, for the student with autism this can be particularly challenging. When a child shows indicators of readiness, strategies to prepare for transition are introduced. Strategies include a reduction of supports and prompts, an increase in unpredictability and an expectation of independent functioning. All transitions involve careful, detailed and collaborative planning. Research indicates that successful transitions involve a collaborative approach that prepares both the child and receiving school (Keane, 2008). Aspect takes responsibility for the transition process in terms of both personnel and staff and will organise the initial preparation of the receiving school. The Aspect Comprehensive Educational Approach involves planned transition and follow up support. Consultative support is provided to the receiving schools by the Aspect school for 12 months after the student has exited the Aspect school. After this period continued support is available from the Aspect Educational Outreach Team in negotiation with both parents and school personnel.

Summary

No single approach can meet the needs of all children with autism spectrum disorders. Research endorses the efficacy of individualised, comprehensive, educational intervention as the primary approach for children with ASDs. The Aspect Comprehensive Educational Approach forms the foundation for all of Aspect's services.

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Where are they now?

A long-term follow-up study of students with autism graduating from Autism Spectrum Australia's (Aspect) satellite classes

Key Personnel: Dr Elaine Keane (Aspect)

Project Summary

This summary outlines the findings of a research study undertaken to ascertain whether Autism Spectrum Australia's (Aspect) satellite class program is achieving its core goal of successful long-term outcomes for students with ASDs in more inclusive educational placements. Satellite classes are ASD-specific classes for five-six students operated by Aspect in mainstream education 'host' schools. The aim of the model is to provide a stepping-stone for students with ASDs to transition to more inclusive educational placements. The satellite class program commenced in 1992 and there are currently 73 satellite classes in mainstream schools.

The first stage of the research comprised a survey questionnaire sent to families of students who had graduated from satellite classes between 1994-2002; the second stage utilised a multiple-case study design to obtain comprehensive, qualitative data for a smaller group of satellite class graduates.

122 questionnaires were distributed to families with a response rate of 52% (N = 63). Results revealed that 70% of students entered a satellite class during kindergarten, the remainder in grades 1 – 4. The mean length of stay was 22 months. 70% of the students transitioned to regular classes, 28.5% to non-ASD specific support classes in regular schools and 1.5% to a school for students with a moderate degree of intellectual disability. 94% of families reported their child received transition support from Aspect. 92% of families reported that receiving schools developed specialised educational support during the year following transition, which gradually decreased over the years.

At the time of the research, 78% of students who transitioned to support classes were in similar placements, 11% in more supported options and 11% in more inclusive placements (regular class). 89% of graduates who transitioned directly to regular classes were still in similar placements. 92% of parents reported their satisfaction with the satellite class program as good to excellent.

Parent satisfaction (N = 63)

Service	Excellent	Very good	Good	Satisfactory	Unsatisfactory
Aspect Satellite class program	42	13	3	3	2
Transition planning from satellite class	26	16	12	4	5
School following transition from satellite class	15	25	7	11	5
Current educational/work placement	13	20	13	11	6

Analysis of the optional comments part of the survey suggested three key themes; 1) the value of satellite classes as providing a firm foundation for their child's development, 2) the ongoing importance of collaboration between staff at all periods of their child's education and between parents and educators, and 3) issues around secondary schooling such as planned transition from primary school, teacher knowledge of autism and the increasing importance of social skills and the influence of the peer group.

Four young adults, whose parents had given prior consent to participate in the second stage of the investigation, were selected in sequential order of graduation to be involved in the case studies. This methodology derived insight into the experiences of the earliest satellite class graduates who had transitioned over a decade previously. The broad findings conform to the statistical data from the parent survey, in that the four students entered the satellite class between the ages of four and a half and five and a half, were enrolled an average of 18 months and graduated to regular classes in grade one or two.

The case studies also provide a more detailed account of the students' progress, current functioning and quality of life. The four students made rapid progress in satellite classes; progress with language, communication and social skills were remarked on particularly by parents, and intellectual ability tested in the average or above range. Analysis suggested that the provision of information on the child and on ASD to the receiving school staff appeared to promote the utilisation of appropriate support strategies following transition from the satellite class. Student progress was maintained throughout primary school; albeit with some ups and downs in one case, when he changed primary schools. In high school three students made even better progress, two especially in social terms.

At the time the research was conducted when the young people were aged 19 or 20-years-old, three had completed their HSC, two of them were enrolled in tertiary education and the third working full-time prior to going to a further education college. The fourth

young man had left high school at the end of grade 9, mainly due to anxiety caused by teasing and bullying. To his credit, after some employment training and work he returned to his studies and at age 20 is completing his HSC at a senior college, where his parents report he is better supported, secure and happier about his life. Two of the other young people have also had full or part-time employment before and/or during their tertiary studies. Two of the young men have a wide circle of friends from school, university and outside interests. The other two have fewer social groups but have interests and get on with people at college/university. One of the young men also has a girlfriend. Perhaps one of the most surprising elements was just how well three of the young people described friendship in terms of trust and companionship. All also have interests and have obtained drivers' licences.

The findings of the research appear to endorse the satellite class model. 92% of parents who completed the survey reported their satisfaction with the satellite class program as good to excellent. The value of satellite class placement was also noted in the optional comments on the survey and was one of the key factors that were deemed to contribute to student progress across all four in-depth case studies. An overwhelming majority of satellite class graduates maintain a similar type of placement in the long-term to that accessed on transition.

The research results also support the theory (Howlin, 2005), which suggests factors that predict success in adulthood for more able individuals with ASDs may involve language and social skills, educational support, peer support, family support and specific skills that allow individuals to find their 'niche' in life and that it is likely to be a combination of these factors. The acquisition of social and communication skills, strong support throughout school and a supportive peer network all contributed to the sense of wellbeing of the young men involved in the case studies. In particular, the importance of carefully planned educational transitions and collaboration between special and regular educators and with parents were highlighted.

"I suppose my social life has just gone off the charts". He has several groups of friends, those from university, those who share musical interests, his soccer friends and a few old school friends he "still catches up with". He suggested that with close friends, as opposed to acquaintances there was a bond and trust, "where you would feel comfortable talking about your private life or secrets". Tom aged 20.

Case study

TOM

Tom¹ was aged 20 years and 8 months at time of interviews and had graduated from a satellite class 14 years previously. He had recently commenced his third year at university on a full-time basis.

Early history

During early childhood Tom was referred for developmental assessment due to concerns about his lack of speech and social and behavioural issues. He was identified with autism and a mild degree of developmental delay at age three-years-old. Following diagnosis he received home visits from Aspect early intervention teachers, attended pre-school part-time and received speech therapy. He subsequently enrolled in an Aspect school part-time for one year from age four and a half.

Satellite class

Whilst Tom had made good progress, when he transferred to a satellite class at age five and a half his language was delayed and he was shy and withdrawn; his IEP prioritised these areas. Reading ability was used to aid verbal comprehension and facilitate social skills. His class participated in afternoon small group activities with the kindergarten. Within 12 months Tom made significant gains in language and IQ testing revealed he was in the average range of ability. With increasing time spent in the mainstream he was beginning to respond to his peers and the kindergarten and first grade teachers remarked on what a delightful, amenable child he was.

Tom's parents elected to keep him in the school where the satellite class was located as they fairly lived close by and he had begun to make some friends at the school. The teachers worked closely and Tom spent more and more time in the first grade class until he enrolled full time mid-year after 18 months in the satellite class.

Primary and secondary school

Tom made good progress through primary and secondary school and teacher aide support was not provided after first grade. He got on well with teachers and was liked by his classmates. Tom received many school awards for his attitude and achievement at high school. When it came to the Higher School Certificate (HSC), the only special assistance he received was some tuition on writing techniques from the

special education teacher. During primary school, Tom sometimes played with peers in the playground, peers were invited to play at his home and vice versa, and he participated in extra-curricular activities. Tom was involved in more social interaction, had more friends and wider circle than during childhood and was involved in a range of extra-curricular and leisure activities.

Current

Tom did well in the HSC and at the time of the interview was undertaking third year Bachelor of Arts degree/Diploma of Education. Tom spoke clearly and eloquently about university. He particularly enjoyed the special education units and believed he possessed the insights to be able to teach children with autism. He found university completely different to high school. "To be honest with you, I absolutely love it" – It had also been good getting to know people with different values and attitudes.

Tom has had a part-time job as a retail assistant for three years and drives himself to work and university. He has a range of sporting, musical and recreational activities and the move to university heralded another broadening of his social network.

He suggested that with close friends, as opposed to acquaintances there was a bond and trust, "where you would feel comfortable talking about your private life or secrets". Tom also has a girlfriend who he met at university and has been seeing for several months. Throughout the interview Tom sounded natural and displayed good conversational ability and awareness of the listeners' perspective.

Factors in Tom's progress

Tom's parents suggested that the major factor that contributed to his progress was their commitment and involvement. This included his early speech therapy, community access, involvement in team sports and encouraging friends to visit. A second factor was enrolment in the satellite class – "After he started in the satellite class it just seemed to click" – he had benefited from the language rich learning environment, intervention for social skills and time spent in the regular class. It was also evident that Tom's parents had a good working relationship with his primary and secondary school teachers. Finally, a developing social network has provided support, interest and companionship.

¹ Pseudonym

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The Aspect vision for research

Aspect is committed to improving the lives of individuals with ASDs through service provision and research. As the largest ASD-specific service provider in the country and one of the largest in the world, Aspect is well positioned to facilitate and conduct research. Aspect undertakes and supports research to evaluate Aspect's and other programs, practices and interventions in order to provide improved services and interventions for children and adults with ASDs. Aspect also promotes research at state and national levels and facilitates tertiary students' research. As our mission is to develop our knowledge of what can be done to support individuals with ASDs, research findings will also make a significant contribution to the field of international research into ASDs. Aspect requires ongoing funding to support these key initiatives and is always keen to talk to potential new partners and donors.



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