Deficiency and characteristics:

- Autism is a neurological pervasive developmental disorder, affecting people in a range of ways from mild to severe, impacting on the way individuals experience and interact with the world (Lennard-Brown, 2003).
- Individuals with autism view the world differently and can be creative and original in thinking outside the box, however, the world for them is a confusion of sights, smells and sounds that interrupts meaning making and affects everyday life and social interactions (Lennard-Brown, 2003).
- The primary characteristics of autism manifest themselves in a triad of impairments (Wing & Gould, 1979), affecting social interaction, social communication and social imagination leading to repetitive and ritualistic behaviors (as cited in Dodd, 2005). At the core of this triad are problems with sensory perception, which play an important role in the manifestation of autism (Bogdashina, 2003).
- In 1943 Leo Kanner was the first to describe the term autistic, from Greek origin meaning a state of self, as a disorder with its roots in biological dysfunction that impacted on daily life (Dodd, 2005).
- Currently, the definitions, classifications and descriptions of autism are undertaken through two sources.
  2. The second is the American Psychologists Association’s Diagnostic Statistic Manual (DSM-IV, APA, 1994). Both agree on it being a pervasive developmental disorder, the notion of the triad of impairments and their subsequent impact on thinking, learning and social relations (as cited in Dodd, 2005).
Scientists are not certain about the causes of autism, however it's likely that genetics and environment both play a role. Researchers have identified genes associated with the disorder. Studies of people with autism have found irregularities in certain regions of the brain. Other studies suggest that people with autism have abnormal levels of neurotransmitters like serotonin in the brain. These abnormalities suggest that autism could result from the early fetal development disruption of the typical brain. It is suggested that this is caused by defects in genes that control brain growth and that regulate how brain cells communicate with each other, possibly due to the influence of environmental factors. While these findings are interesting they are introductory and require deeper research and study. The theory that parental practices are responsible for autism has long been disproved (NINDS, 2013).

The recorded prevalence of autism has increased in recent years. This reflects greater recognition, changes in diagnostic practice through more trained diagnosticians; a broadening of diagnostic criteria; a greater willingness by parents and educationalists to accept the label and better recording systems (Taylor, 2006).

Possible early signs of autism by age two (Morris, 2008):
- A lack of interest in others
- Lack of eye contact
- Not pointing at wanted objects
- Not using two word sentences by age two
- Losing acquired words or language skills
- Repetitive behaviors: hand flapping or rocking
- Does not look at objects that are pointed to
- Does not play pretend imaginative games
- Walking on tip toes

Later indicators of autism (NINDS, 2013)
- Reduced ability to make friends with peers
- Reduced ability to initiate or sustain a conversation with others
- Absence or impairment of imaginative pretend social play
- Stereotyped, repetitive, or unusual use of language
- Restricted patterns of interest that are not typical in intensity and focus
- Preoccupation, infatuation with certain objects and subjects
- Inflexible adherence to specific routines or rituals

Signs of distress:

Behavioral: Withdrawal, unexplained aggression and anger, developmental setbacks, lethargic behavior and increase in repetitive behaviors. Important to pay attention to what happened prior and intervene with distraction or alter the environment before meltdown (Hammer, 2013).

Academic: Difficulty understanding and following instructions, difficulty deciphering gestural clues, increased anxiety due to challenges with understanding content and communicating needs. Structure and routine, multiple modes of instruction delivery, aide assistance and reducing anxiety assist to overcome academic problems (Morris, 2008).

One percent of children in the United States aged 3-17 have autism. Prevalence is estimated at 1 in 88 births. 1 to 1.5 million Americans live with it. It is considered the fastest-growing developmental disability with a 1,148% growth rate (Autism Society, 2013).

Using the Australian Commonwealth Government data, the core finding is that there is an estimated prevalence of autism across Australia of 62.5 per 10,000 for 6-12 year old children. This means there is one child with autism on average in every 160 children in this age group. This represents 10,625 children aged between 6 and 12 years with autism in Australia (MacDermott, 2013).
**Comorbidity:**

Comorbidity associated with autism includes: Sensory Integration dysfunction, Seizures, ADHA, Gastrointestinal issues, Tourette syndrome, OCD, Dyslexia (reading/writing issues), Dyspraxia (movement problems), Dysgraphia (writing difficulties), general anxiety disorder, depression (Morris, 2008). It is essential to be aware of comorbidity associated with each student who has autism, as this would have implications for the classroom in terms of meeting individual needs.

**Treatment:**

(NINDS, 2013)

There is no known cure for autism. Various therapies and behavioral interventions are designed to remedy specific symptoms and can bring about improvement. The ideal treatment plan usually coordinates therapies and interventions that meet the specific needs of individual children. Most health care professionals agree that the earlier the intervention, the better for future outcomes.

**Educational/behavioral interventions:** Therapists use highly structured and intensive skill-oriented training sessions to assist children develop language, communication and social skills, such as Applied Behavioral Analysis. Family counseling for the parents and siblings of children with autism can help families cope with the particular challenges of living with a child with autism.

**Medications:** Doctors may prescribe medications for treatment of specific autism-related symptoms, for instance anxiety, depression or obsessive-compulsive disorder. Antipsychotic medications can be used to treat severe behavioral problems. Seizures can be treated with anticonvulsant drugs. Medication used to treat people with attention deficit disorder can be used to help reduce impulsivity and hyperactivity.

**Other therapies:** There are a number of controversial therapies or interventions available, but few, are supported by scientific studies. Parents should use caution before adopting any unproven treatments, although dietary interventions have been helpful in some instances.

**Strengths of students with autism:**

(CT-ASRC, 2013)

- Understand concrete concepts well
- Understand context-specific language (language that can be directly related to an experience)
- Memorize rote material easily
- Recall visual images and memories easily
- Think in a visual way
- Learn chunks of information quickly
- Learn to decode written language at an early age (Called hyperlexia, many students with autism can decode earlier than they can comprehend written language)
- Can have extraordinarily good long-term memory
- Understand and use concrete rules and sequences
- Can be perfectionistic in approach to tasks
- Can be very precise and detail-oriented
- Be depended upon to maintain schedules and to be on time
- Can have an average or even way above average intelligence
- Be honest, even to a fault
- Be extremely focused, if it is a pleasurable task (and which may be the tasks others do NOT want to do)
- Be charming in their innocence
- Have difficulty being devious
- Have a strong sense of integrity
- Can have an excellent sense of direction
- Be very compliant, when expectations are clearly understood
- Be very genuine. May not understand the motive behind trying to impress others and thus don’t bother.
Implications in the context of Education:

The last century saw a positive change in attitudes towards the rights of all individuals to be part of an inclusive community and to make decisions about their own lives (Foreman, 2011). The philosophy of Inclusion is evolving as it reacts to diversity and difference in our rapidly changing world (Ashman & Elkins, 2012). The underlying principles that fostered the philosophy were social justice and human rights, all are equal and deserve equal rights, normalization, the right to live as the main society does and that all children can learn and deserve the least restrictive environment possible (Foreman, 2011). Under the Disability Discrimination Act of 1992 students with a disability have equal access to general classrooms (Dempsey, 2011) and a quality education free from discrimination (MCEETYA, 2008).

Education of students with autism has followed the lead of scientific theories and research (Dodd, 2005). The current trend identifies particular thinking and learning styles of students with autism and develops strategies for optimum outcomes (Dodd, 2005). With strengths as sensory learners, visual learning strategies though graphics, diagrams and assistive technologies (Misra, 2012) can be incorporated in inclusive pedagogy and curriculum.

Another focus is on the social nature of the core difficulties, spurred on by Theory of Mind (Baron-Cohen, 1995), suggesting that impaired shared attention blocks the development of theory of mind resulting in an inability to think and feel from another's perspective. The implications of this in an inclusive education setting would require adaptation of curriculum and explicit teaching of abstract concepts such as critical literacy, a core requirement of the Australian English Curriculum (ACARA, 2010). Humor would have to be explicitly explained too.

(Westling & Fox, 2009)

Conduction of assessments to determine instructional needs is a critical element of teaching and learning. Assessments are tools that provide efficient information on how well the program is working and if appropriate progress in learning goals is being made. Evidence based, effective teaching practices in conjunction with regular assessments have been shown to improve learning outcomes for all students.

Some other evidence-based practices include:

- Carefully planned instruction
- Effective management of time and student behavior
- Designing instructional settings and groupings that meet individual needs
- Smooth efficient routines and transitions
- Collaboration with parents, experts and colleagues
- Monitoring student performance, feedback, review and reteach when necessary
- Interacting with students in a positive and caring way

The Commonwealth’s Disability standards for Education (DEEWR, 2013) requires that reasonable adjustments be made to curriculum, materials, assessment, activities, modes of delivery and physical setting as is necessary for educational access and participation.

Reasonable adjustment: Minimum change to ensure access to curriculum

When thinking of implications in the education context conceptualize:

Justice: Restoring and maintaining balance

Inclusion: Enhancing belonging through barrier removal
SPECIFIC ACADEMIC STRATEGIES:

1. **Building language for conceptual understanding and communication skills through scaffolding.** The teacher guides understanding of a problem through language support and gradually shifts responsibility to the student as confidence, strength and ability grow (Boyle & Jenkins in Ashman & Elkins, 2012). For a student with autism, understanding the concept allows for meaning making and thus increases the likelihood of language being used for communication. This gives the student a means to overcome academic and social barriers.

2. **Some students will benefit from Individual Learning Programs, while others will comfortably access the general curriculum. Content enhancement supports like graphic organizers; mnemonics, note taking and self-monitoring strategies are considered useful (Rosenberg, Westling & McLesky, 2011). Students with autism have strengths as visual learners and any instruction that promotes the use of other modes of learning: auditory, written, visual, kinesthetic, is more likely to succeed, especially if two to three modes are used for one instruction. This allows the teacher to maintain balance in the classroom as individual learning styles are catered to.

3. **Augmentative and alternate communication strategies** (Rosenberg, Westling & McLesky, 2011). These are strategies that utilize pictorial and other forms of communication and can be delivered through various technological tools. An inability to communicate needs can prove to be very frustrating and providing a means to overcome the communication barrier allows the teacher to restore balance within the class community. Two commonly used strategies are: **PECS:** Pictorial Exchange Communication System. PECS begins by teaching an individual to give a picture of a desired item to a "communicative partner", who immediately honors the exchange as a request. The system goes on to teach discrimination of pictures and how to put them together in sentences. In the more advanced phases, individuals are taught to answer questions and to comment. **I-Pad apps:** One symptom of autism is a difficulty in speaking or an inability to speak. **Proloquo2Go** is an augmentative and alternative communication (AAC) app that teaches children how to construct sentences using symbols and pictures. It also has text-to-speech, word prediction and a customizable vocabulary.

4. **Making Thinking Visual with Graphic Organisers**

<table>
<thead>
<tr>
<th>KEY PURPOSE OF THE ORGANISER</th>
<th>SAMPLE GRAPHIC ORGANISERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recalling, grouping, classifying, summarising ideas</td>
<td>Spider diagram, Affinity/cluster web, Concept map</td>
</tr>
<tr>
<td>Sequencing events, ordering ideas</td>
<td>Cycle circle, Flow chart, Timeline</td>
</tr>
<tr>
<td>Showing causal links (cause and effect)</td>
<td>Futures wheel, Bridge, Fishbone</td>
</tr>
<tr>
<td>Deeper analysis—dissecting an idea into parts, and exploring different attributes</td>
<td>Venn diagram, Y chart, T chart</td>
</tr>
<tr>
<td>Planning and decision making or reviewing</td>
<td>Scales, Comic strip, ECG graph</td>
</tr>
</tbody>
</table>

5. **Rosenberg, Westling & McLesky (2011) suggest these strategies to effectively guide curriculum design and instruction for students who are having learning difficulties comorbid with autism:**
   - **Big Ideas:** Key concepts that facilitate the most efficient acquisition of information.
   - **Judicious review:** Opportunities to practice and apply information that was previously taught.
   - **Conspicuous strategies:** Steps used to solve a problem or accomplish a task

**Strategies for comorbidity with social emotional behaviors:**
   - Working with peer tutors
   - Adapting assignments
   - Self monitored work sheets
   - Completing assignments on the computer

**Strategies for comorbidity with ADHD:**
   - Brief, clear, visually supported instructions.
   - Ensure students know the rules and procedures for transitions before the transitions occur.
   - Token economy reinforcement systems are effective especially when rewards are changed frequently.
SPECIFIC BEHAVIOURAL STRATEGIES:

1. Developing social skills through the Stop Think Do sequence. This teaches young children to develop social skills by encouraging a traffic light visual system to develop appropriate relationships. Developed by Lindy Peterson, it acts as a problem solving approach to stop an impulsive act, consider the solutions and consequences and choose the best solution (Boyle & Jenkins in Ashman & Elkins, 2012). Stopping inappropriate behavior reduces social barriers while appropriate behavior restores social balance.

2. Circle of friends: Systematic way of establishing small group of peers, led by a teacher in order to assist the child to make friends and understand why their behavior is causing social exclusion. The group problem solves to develop alternative behaviors to promote social inclusion (Boyle & Jenkins in Ashman & Elkins, 2012). The student gets an opportunity to understand the social barriers and is assisted to restore social balance through appropriate behaviors that lead to friendships.

3. Power cards aim to improve theory of mind by using single cards that draw on the student's special interest to help guide their behavior. The special interest is used to systematically guide the student through step-by-step appropriate behavior (Boyle & Jenkins in Ashman & Elkins, 2012). This strategy overcomes barriers and maintains social balance by understanding the world from the student’s perspective. It uses modes of learning that not only motivate and appeal but also are a strength.

4. Social stories: Scattone, Wilczynski and Focus (2006), suggest that there are numerous studies that validate the use of Social Stories as an effective behavioral intervention. Many of these studies focused on decreasing inappropriate behaviors such as aggression, screaming, and grabbing toys. Scattone, Wilczynski and Focus (2006) investigated the effectiveness of Social Stories when used as a sole intervention to increase appropriate social interactions of children with autism. An increase in appropriate social interactions occurred suggesting that Social Stories are effective in reducing social/communication barriers.

5. Social skills autopsy: Social situations are analyzed through explicit deconstruction of the event. This results in pro-social approaches that lead to social competence and restoration of social balance (Elksnin & Elksnin, 2000).

(Larsen, 2012) Challenging behavior is caused by problems in communication, social understanding, sensory disturbances and differences in imagination. To understand the behavior, you need to understand autism from within.

Temple Grandin

Normal people have an incredible lack of empathy. They have good emotional empathy, but they don’t have much empathy for the autistic kid who is screaming at the baseball game because he can’t stand the sensory overload. They also lack empathy for the kid with autism having a meltdown in the school cafeteria because there is too much stimulation.
6. Functional Behavior Assessments:

Chandler and Dahlquist (2010), define challenging behavior as behavior that interferes with learning, that of the student and others, hinders positive social relationships and interactions and harms the student and others. In essence, challenging behavior can be viewed as a barrier to optimum learning, social development and safety of the student and others in the context of an educational setting. Ashman and Elkins (2012) consider barriers to be obstacles that reduce access to effective learning opportunities, be they academic or social in nature.

Functional Behavior Assessments are a process that develops statements about relationships between a student's behavior and events in their environment. FBAs are relevant in the context of challenging behavior as they acknowledge that the behavior is occurring because it produces a desirable outcome for the student and consider such behavior to be replaced by altering the environmental variables that support the challenging behavior (Chandler & Dahlquist, 2010). FBAs focus on the behavior itself, the communicative function of the behavior (Klein, Cook, & Richardson-Gibbs, 2001) and the context but not the student, thus establishing a proactive and positive approach (Chandler & Dahlquist, 2010). FBAs are a part of Positive Behavior Support, a problem solving method (Steege & Brown-Chidsey, 2008) that aims to bring about lasting positive outcomes by providing strong non-aversive alternatives that reduce challenging behavior and emulate positive behavior (Sailor, Dunlap, Sugai, & Horner, 2009). FBAs and positive behavior support maintain balance by increasing opportunities for work and independent living and reduces barriers to positive social relationships.

7. Acquisition, maintenance and generalization of skills:

Acquisitions are interventions to reduce challenging behavior and increase appropriate replacement behavior (Chandler & Dahlquist, 2010). Maintenance and generalization of skills is when students apply learnt skills, be they academic, social, life or work skills, in a variety of contexts across time (Westling and Fox, 2007).

Effective strategies:

- Multiple exemplars and training loosely- multiple examples of concept or behavior, which is generalized across a variety of people, settings, instructions (Chandler & Dahlquist, 2010).
- Fading reinforcement- Systematically fading the use of antecedents and consequence to reduce dependence (Chandler & Dahlquist, 2010).
RESOURCES:

- PowerPoint Presentation on Functional Behavior Assessments by Dr. Tracy Gershwin Mueller. Click here
- Official journal of pediatrics http://pediatrics.aappublications.org
- Autism specific journals: http://researchautism.net/pages/autism_autistic_asperger_spectrum/autism_resources/autism_journals

- General information sites with links to various other valuable information

- Sites to assist teachers with information, resources and ideas: http://www.angelfire.com/pa5/as/asteachersites.html

- Well known authors and presenters in the field of autism:
  1. Temple Grandin's site: http://templegrandin.com

Well-regarded books on Autism:

1. Thinking in Pictures: My Life with Autism by Temple Grandin
2. Ten Things Every Child with Autism Wishes You Knew by Ellen Notbohm
   - Let Me Hear Your Voice
   - Behavioral Intervention for Young Children with Autism
   - The DAN Protocol
   - Thinking In Pictures
   - The Me Book
   - Nobody Nowhere
   - Emergence: Labeled Autistic
   - Biological Treatments for Autism and PDD
   - Somebody Somewhere
   - There’s a Boy in Here
   - The World of the Autistic Child
   - Son-Rise
   - Teach Me Language
   - The Sound of a Miracle, A Child’s Triumph Over Autism
   - Special Diets for Special Kids
   - The Social Story Book
   - The Biology of the Autistic Syndromes
   - Children with Autism: A Parent’s Guide
   - Autism: Handle with Care!

Other recommendations:

* Girls growing on the Autism Spectrum by Shana Nichols
* My child has Autism by Clarissa Willis
* Spring Board to Social skills by Kerrie Shanahan
* The kids guide to working out conflicts- How to keep cool, stay safe and get along by Naomi Drew

* Comorbidity:
  1. Understanding ADHA by Christopher Green
  2. The survival guide for kids with ADD or ADHD by John Taylor
  3. Overcoming Dyslexia by Sally Shaywitz
Justice and Inclusion

If justice is about restoring and maintaining balance, the question to ask is

How am I ensuring that academic and social balance is maintained for all my students, including the student with autism?

If inclusion is about ensuring belonging through barrier removal, the question to ask is

What is my role in ensuring barriers that reduce access to curriculum and the deterrent the creation of active, creative, confident citizens of the future, are removed?

We have got to work on keeping these children engaged with the world.

Temple Grandin

This Interactive brochure is produced for school staff in order to raise Autism Awareness
REFERENCES:


