

The Underside of the Iceberg

Underlying Characteristics of Students on the Autism Spectrum

There is a purpose behind all behavior. Because we look at the behavior of others through the lens of our own background and experience, it may be difficult to understand the motivation of another person, but there will always be a purpose. To understand the behavior of students with autism, we need to know how these students experience their worlds.

Some of the early indicators of autism include:

- Atypical eye contact
- Lack of joint attention (e.g. engaging with another person in attending to an item, topic, or person)
- Lack of back and forth dialogue
- Atypical sensory/motor processing

These early developing differences lead to host of characteristics and deficits that Barry Grossman and Ruth Aspy of *The Ziggurat Model*, refer to as the base of the iceberg. We see the tip of iceberg, the observable behaviors. But we can only begin to understand our students when we look below the water line to what lies underneath. Some of the characteristics we may observe at the base of the iceberg include:

- Impaired theory of mind
- Sensory differences
- Weak central coherence
- Executive dysfunction
- Difficulty processing non-verbal communication
- Poor auditory processing
- Areas of intense interest
- Fear, anxiety, and depression

Impaired theory of mind: There is a well-known psychological test called the "Sally-Anne" test. You can try this yourself with your students on the spectrum. Show the child a simple skit involving two girls, Sally and Anne. Sally has a basket and Anne has a box. While Sally is out of the room, Anne takes the marble out of the basket and puts it in her box. Ask the children where Sally will look for the marble when she returns to the room. Young children and many children of any age with autism will answer "Anne's box." They have difficulty imagining someone not knowing what they know. (Baron-Cohen, Leslie & Frith, 1985). It is a challenge for some individuals with autism to understand that other people have ideas, feelings, and thoughts that are different from theirs and change their behavior based on those perceptions. This is also referred to as *mindblindness*. This trait of being locked in to one's own perspective may contribute to a tendency to be inflexible or engage in predominantly *black and white* thinking.

Some of the behaviors that arise from theory of mind deficits are:

- Lacks the ability to take the perspective of another person in real life or in literature
- Makes comments that seem rude
- Misinterprets the intentions of others, is easily taken advantage of
- Less inclined to "people pleasing" behaviors, such as doing a difficult task to please a parent or teacher
- Inflexibility and strict adherence to rules

Sensory differences:

Students with autism may be over-sensitive or under-sensitive to all sensory stimuli; auditory, visual, vestibular, proprioceptive, olfactory, taste, and tactile. They may seek out or avoid stimuli in any of these areas.

Some of the behaviors that may arise from sensory issues are:

- Will only eat a narrow list of foods
- Avoids the playground or gym
- Refuses to go outside in very warm or very cold weather
- Loves to jump, swing, or spin

- Inability to process information from multiple senses at once
- Distracted by sounds and sights (as florescent lights)
- Avoids handwriting tasks

Weak central coherence:

Weak central coherence refers the inability to get the Individuals with autism may be gifted at perceiving details but often do not see the forest for the trees. This trait may be connected to the student's inability to *generalize* a skill, or apply a skill learned in one setting to a different setting. A student may be able to verbalize and demonstrate a social skill in a small group with a school counselor yet not be able to transfer that school to the classroom or playground setting.

Some of the behaviors that may come from weak central coherence are:

- The inability to generalize skills from one setting to another
- The inability to summarize information or get the main idea of text
- Inability to distinguish minor problems from major problems
- The inability to apply skills learned in one setting to a different setting
- Inability to distinguish information that is relevant from that which is irrelevant

Executive dysfunction:

In individuals with autism, there may be abnormalities in the functioning of areas of the brain that are responsible for executive functioning activities. These include; goal-oriented behavior, organizing assignments and personal belongings, planning the completion of multi-step projects, demonstrating flexibility, maintaining attention, regulating emotions, and controlling impulses. Students with this trait may have difficulty processing information for different sources simultaneously. Some evidence of this deficit might be:

- The failure to bring the necessary materials to class
- The inability to plan for the completion of assignment
- Difficulty focusing attention on instruction
- Impulsive actions or comments
- Inflexibility

- Rigid responses or rituals
- The failure to see how doing a task contributes to a larger goal

Difficulty processing non-verbal communication:

Because of the early lack of inclination to attend to social information, students with autism may fail to learn how to decipher non-verbal communication. They may fail to see when another person is angry, bored, or frustrated by deciphering body language.

This deficit may be displayed by:

- Failure to *repair* communication break-down
- Continuing to talk on topic of interest when the other person is no longer interested

Auditory processing disorders

Students with autism tend to take language very literally and miss innuendo, sarcasm, metaphors and idioms. They also have trouble focusing on and processing language. According to the article in the November issue of *Science Translational Medicine*, researchers at UC San Diego and Johns Hopkins studied the brain function of typical individuals and those with autism during language tasks. In typical children, there was connectivity between the frontal lobe and other areas of the brain, including the left side of the brain, which is involved with language. In those participants with autism, there was less connectivity to other parts of the brain and more activity within the frontal lobe itself "almost as if it's talking to itself."

Some behaviors resulting from this aspect of autism are:

- An inability to shift attention to the teacher's speech
- Difficulty following directions
- Inability to maintain focus on lectures
- Literal interpretation of language

Areas of intense interest:

One of the most fascinating aspects of autism is the area of intense interests. They might be common fascinations (trains, dinosaurs, or Sponge Bob) or very unique (odometers or sprinkler heads). They are often quite narrowly focused (large ships that sank or the subway

system of Boston). These interests may dominate their conversation and monopolize their thoughts. Frequently, they can be used as rewards, springboards for learning new material, or an opportunity to excel in a field of study.

Some behaviors that stem from this characteristic may include:

- Difficulty transitioning away from area of interest
- Difficulty shifting conversation to topics other than their area of interest.

Fear, anxiety, and depression:

Temple Grandin, autism self-advocate and author, has stated that as an adolescent, fear and anxiety were her predominant emotions. Researchers at UC Davis M.I.N.D. Institute (Amaral & Corbett, 2002) have hypothesized that the abnormalities in the amygdala of individuals with autism may contribute to their "abnormal fears and increased anxiety." Individuals with autism are at increased risk for depression (Tantam, 1991; Kim et. al., 2000). They may exhibit poor concentration, and thoughts and/or comments about suicide. Not only is depression more common in students on the spectrum, their means of dealing with it, such as talking it out with another person or asking for help, are more limited.

This fear, anxiety, and depression may be exhibited by:

- Low frustration tolerance
- Rage reactions or *meltdowns*
- Has difficulty coping with changes in the environment
- Suicidal thoughts and comments

Areas of strengths

It will also benefit the teacher to be alert for areas of strengths that the student with ASD might display. Attributes that in some circumstances are weakness may be strengths in another context. For example, A person who has a strict adherence to routine will have difficulty in the rapidly changing school environment, but may do very well in an occupation other might find monotonous. This area of characteristics

will vary as greatly as the deficits area, but some common strengths include:

- Visual processing
- Rote memory skills
- Strong rule orientation
- Persistence
- Focus of energies and attention to an area of interest
- Honesty and idealism
- Highly logical thinking often leading to strengths in math, science, and technology
- Adherence to rules
- Aptitude for technology
- Affinity for routine

This is far from a complete list of underlying characteristics in individuals with autism, but it includes many of those commonly connected with behaviors we see in the school setting. These characteristics are not choices. They are brain-based differences that affect many areas of functioning. Temple Grandin stated, "I cannot emphasize enough the importance of a good teacher." There may be no group of students who are more in need of educated understanding than those on the spectrum." While many behaviors will remain a mystery to us, having an educated understanding of the underside of the iceberg will bring most of them into clearer vision. These students face many obstacles, they also have many amazing abilities. Many of the advances we enjoy in our modern society are attributable to individuals who, diagnosed or not, were somewhere on the spectrum. As we gain more understanding, we will be able to see and appreciate the children or young adults who are there behind the autism and their potential.

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