

An Overview of Autism Spectrum Disorders

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CASE STUDY

Mrs. Avery has a few students in her preschool classroom that she suspects are showing early signs of autism spectrum disorders (ASD). Generally, she looks for evidence that her students exhibit effective communication and sharing enjoyment, making social connections, and seeking social opportunity through play, and when she sees anything suspicious, she likes to refer the child for further evaluation.

One of Mrs. Avery's students, Dylan, demonstrates some concerning behaviors. One particular concern for Mrs. Avery is that she's noticed Dylan has some slight motor delays. For example, Dylan appears to have trouble throwing or catching a ball with accuracy at recess, he seems "clumsy" on the playground and in class, and he has an awkward pencil grip when working on class assignments. Dylan's caregiver reported that during his first six months of life, he vocalized and responded socially to others by smiling and cooing. Mrs. Avery has observed Dylan engaging his classmates in play, showing meaningful pretend play, sharing enjoyment by smiling at people, and interacting with others with ease. She also sees Dylan looking in response to bids to share attention; he appears to be socially engaged and uses eye gaze, vocalizations, and gestures to communicate. Dylan's parents have recently expressed concern to Mrs. Avery about his awkward physical movements.

Mrs. Avery has another student in her class, Erin, who has excellent language skills. She uses words in conversation that are at or above her age level, and all she wants to talk about is dogs. In class, she plays with a stuffed dog exclusively, or sometimes, she plays with plastic farm

LEARNER OBJECTIVES

After reading this chapter, the learner should be able to do the following:

- Discuss causal theories associated with autism spectrum disorders.
- Describe the major criteria necessary for an ASD diagnosis.
- Discuss common features associated with ASD but not necessarily required for a diagnosis.
- Explain the rationale for instructing students with ASD and discuss the least restrictive environment.
- Discuss the importance of working with families to educate students with ASD.

animals, especially the dog, and she likes to line them all up in a row. Erin does not engage with her peers during play, preferring to spend time alone with her toy animals. Erin seems to know everything there is to know about dogs—she can name different breeds and tell you how much to feed them, whether they are puppies or adults, and how often to walk them or let them sleep. When Erin does not get time to play with the stuffed dog or plastic animals, she gets upset, and she cries or screams. The teacher read in the file that Erin had poor eye contact during her 1-year well-baby visit with the pediatrician. Erin also seems to lag behind her classmates in penmanship, and she gets easily frustrated and sometimes has an “outburst” in response to the frustration. Mrs. Avery has also seen Erin flap her hands when she is excited or enjoys something such as when Mrs. Avery blows bubbles, and she has noticed that Erin does not respond to other adults’ or children’s bids to share attention.

Based on her understanding of the early signs of ASD, Mrs. Avery is considering referring one of her students for further testing.

INTRODUCTION

Students with autism spectrum disorders make up one of the largest populations of students receiving special education services in the United States (U.S. Department of Education, National Center for Education Statistics, 2013). ASD is one of the fastest growing childhood disorders in the United States and is one of the most commonly diagnosed disabilities in schools today (CDC, 2015). One in 68 children are identified with ASD, according to a 2010 study reported by the Centers for Disease Control (CDC, 2015). It is more common among boys (1 in 42) than in girls (1 in 189) (CDC, 2015). Newer government estimates indicate that about 1 in 45 children in the United States has an autism spectrum disorder. The report is based on parent interview data collected during the National Health Interview Survey for the years 2011 to 2014 (CDC, 2015).

Children diagnosed with ASD may display, in varying degrees, social communication difficulties and restricted, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2013). A diagnosis of ASD, according to the APA, occurs when a child has a severe qualitative impairment in reciprocal social interaction and communication skills and a restricted range of activities and interests (APA, 2013). These key diagnostic criteria must be present for an individual to receive a diagnosis of ASD. ASD is a *spectrum*, which refers to the wide range of symptoms, skills, and levels of impairment that children with ASD have (National Institute of Mental Health, 2015). Some children are mildly impaired by their symptoms while others express more severe impairments.

What we understand about ASD continually progresses. Scientists are actively discovering potential causes, appropriate assessments, and relevant intervention strategies. The purpose of this chapter is to provide the reader with a basic understanding of ASD,

given what we know currently. It is our intention to provide information to readers, whether new to the field or whether you've taught children with ASD for years, to assist you in meeting the needs of students with ASD in the best way possible. It is our hope that as your knowledge base increases, you will be better equipped to help children with ASD reach their full potential.

Family Voices 1.1

"Trying to describe Jack's autism to someone who doesn't know him is like trying to describe the bluest ocean to a person who doesn't see. It is deep and sparkling and brilliant and alive. It is slippery and quiet, but it can also be deafening. It likes to make waves. It's not something you can hold in the palm of your hand, and yet, all at once, it surrounds you. It can take your breath away."

Source: Author Carrie Cariello, in, "As a parent of a child with autism, this is what I want you to know about my family," in the Independent news, available at: <http://www.independent.co.uk/voices/comment/as-a-parent-of-a-child-with-autism-this-is-what-i-want-you-to-know-about-my-family-10081619.html>

POTENTIAL CAUSES OF AUTISM

Scientists have yet to determine the exact causes of ASD, but researchers suggest that both genetics and the environment may play a role. Researchers have identified some genes associated with ASD, and imaging studies have found differences in the developmental regions of the brain in some individuals with ASD. Scientists are learning that ASD could be the result of disruptions in brain growth very early in development. Environmental factors may also play a role, although scientists have identified no specific environmental cause. Initial beliefs that childhood vaccines are to blame for ASD have since been disproved by multiple studies showing no increased risk of ASD in children who received vaccines. Research is ongoing, in attempts to identify other potential environmental causes.

GENETIC INFLUENCES

There is some genetic component to autism, according to research, meaning it tends to run in families. If one sibling in a family has ASD, the other siblings have 35 times the normal risk of also developing the disorder (NIMH, 2015). Scientists are actively researching genetic factors and are starting to identify particular genes that may increase the risk for ASD. We also know that some people who receive an ASD diagnosis have no reported family history, which suggests that random gene mutations are likely to affect risk (NIMH, 2015).

Other lines of research provide evidence of genetic influences on autism. One group of researchers suggested that more than half of all cases of autism are traced

to a gene-disabling mutation found in the child but neither parent (Iossifov et al., 2015). Iossifov and colleagues conducted DNA analysis of over 1,800 families affected by autism, and they identified a gene mutation that occurs in the mother's egg, the father's sperm, or in early embryo development to suggest that genetics provide meaningful answers to the question of genetic influence (Iossifov et al., 2015). Another group of researchers also found that autism symptoms share a strong genetic correlation, based on their analysis of data from 568 twin pairs with at least one affected by autism (Frazier et al., 2014).

ENVIRONMENTAL INFLUENCES

Genetic factors alone do not account for all instances of ASD. Toxins or other environmental factors may also be associated with ASD, and these things are being investigated. Environmental factors are factors outside the body that can affect health, such as the air we breathe, the water we drink, the foods we eat, or the medicines we take. The surroundings of the child while in the womb or the mother's health while pregnant are other environmental factors. Environmental factors that can increase the risk of ASD include the family history of medical conditions, the age of parents, exposure to environmental toxins, or complications during pregnancy or birth. It is most likely no single environmental factor is responsible for ASD (NIMH, 2015).

VACCINATION CONTROVERSY

A great deal of controversy surrounds the potential risk of vaccines. Health professionals recommend that children receive necessary vaccines early in life to protect against infectious diseases like measles (NIMH, 2015). Children receive many vaccines during the first two years of life, around the same time that ASD symptoms often become noticeable, making vaccines a likely culprit in parents' opinion. In fact, some years back, a study was published that suggested a direct link between the measles, mumps, and rubella (MMR) vaccine and ASD, confirming many long-held suspicions. Numerous studies have since disproved the link between vaccines and ASD.

Recently, in a study conducted with over 95,000 children and published in the prestigious *Journal of the American Medical Association*, researchers established that the MMR vaccine is most definitely not a contributor to ASD in children of any age (Jain et al., 2015). A very interesting component of their study (Jain et al., 2015) considered children who had an older sibling with an autism spectrum disorder. Because so many parents in the study held to the belief that vaccines caused their oldest child's ASD, they refused to vaccinate their younger children. Children who do not get the MMR vaccines are just as likely to receive an ASD diagnosis (Jain et al., 2015), again proving no link between vaccines and ASD diagnosis.

Bryan King (2015), professor of psychiatry at the University of Washington, made this remark in the *Pediatric News* in response to the Jain et al. study:

The findings of Jain et al., taken together with those of approximately a dozen other studies, clearly show that the age of onset of ASD does not differ between vaccinated and unvaccinated children, the severity or course of ASD does not differ between vaccinated and unvaccinated children, and now the risk of ASD recurrence in families does not differ between vaccinated and unvaccinated children. This and other studies allow us to move forward with a more focused and productive search for temporal and environmental factors that contribute to autism risk. (p. 21)

Numerous researchers have sought to determine whether a link between vaccines and autism exists, and since 2010, not one of those studies has confirmed such an association (NIMH, 2015). King (2015) concluded that the results of these studies “should allay families’ concerns that the MMR vaccine may be harmful to their children” (p. 21).

T.I.P. – Theory Into Practice 1.1

VACCINATION CONTROVERSY: TAKE A STAND

1. Search the Internet for discussions that debate the link between vaccines and ASD.
2. Write a summary of your findings that provides evidence to support the belief that vaccines cause ASD.
3. Write an opposing argument that refutes those claims.
4. Provide a rationale for why you believe either side to be the correct position.

EARLY SIGNS OF AUTISM

Emerging research has identified behaviors during infancy that may signal a possible ASD diagnosis. For example, children who receive a later diagnosis of ASD may, during infancy, demonstrate early deficits in eye contact, responding to their name, social smile, joint attention, or tolerance of touch, according to Pineda, Melchior, Oberle, Inder, and Rogers (2015). Poor quality of physical movement can be evident as well. Some researchers have even explored social interactions in infants, such as cuddling, irritability, crying, gaze aversion, and response to human interaction (Pineda et al., 2015).

Patterns of development might also generate some concern for parents. Delayed development of communication abilities, such as the use of gestures and speech, may

lead parents to suspect developmental differences. Delays in toilet training might be evident, or the child may appear to have acute sensitivity to sensory experiences (e.g., sudden noises or various tactile sensations). Some children may display these characteristics early on, as young as eighteen months, but some children might not exhibit concerning behaviors until well into their second year. Still others can achieve typical developmental milestones, displaying no conspicuous signs of delay, and then, over a very short period, they stop gaining new language and social skills or begin to lose what they had. Early signs will be discussed in more detail in Chapter 13 on early childhood education.

DIAGNOSTIC CRITERIA

The APA (2013) has published the criteria necessary for receiving an ASD diagnosis.

The current diagnostic criteria include persistent difficulties in social communication and social interaction across multiple contexts and restricted, repetitive patterns of behavior.

SOCIAL COMMUNICATION INTERACTION

Impairments in this category include deficits in social-emotional reciprocity, non-verbal communication behaviors used in social interaction, and developing, maintaining, and understanding relationships. By social impairment, we mean more than just having a sense of shyness or inclination toward introversion. Impairments in this area, as well as others included in the diagnostic criteria, must be present in the early developmental period, they should cause significant impairment in important areas of daily functioning, and they should be beyond what is expected for children at that developmental level.

Social-emotional reciprocity. A significant issue for children with ASD is limited social reciprocity, which refers to the back-and-forth flow of social interaction. The American Psychiatric Association's (2013) *Diagnostic and Statistical Manual, Fifth Edition (DSM-5)* defines this category of deficits to include difficulties with back-and-forth conversation, reduced sharing of interests and emotions, and a failure to initiate or respond to social interactions.

Young children will show an interest in interacting with others and exchanging smiles, which eventually builds to being able to share in a conversational exchange as they grow to develop language. Children who have impairments in social reciprocity prefer to avoid social games and participate more in solitary activities; they may not notice another person's lack of interest in the focus or topic of conversation, or they might fail to notice another person's distress when it occurs. All of these deficits can contribute to an unsuccessful social exchange.

T.I.P. – Theory Into Practice 1.2

STOP AND THINK

Social reciprocity is the back-and-forth flow of social interaction.

1. How do individuals with ASD exhibit social reciprocity?
2. In what ways do you use social reciprocity in your everyday life?
3. How would you explain social reciprocity to others?

Nonverbal communicative behaviors. Individuals with ASD are reported to have difficulty interpreting nonverbal communication from others, such as those conveyed through body language, facial expressions, and gestures during social interactions. Nonverbal listener behaviors that convey an *interest* in the speaker include the body, head, or both being oriented toward the speaker, looking at the speaker's eyes or mouth, periodic smiling, raised eyebrows, head nodding, and even vocalizations such as “mmm hmm.” Behaviors that seem to show *disinterest* include diverting eye contact away from the speaker, leaning one's head on one's hand, making audible sighs, yawning, or raising eyebrows without a smile. Individuals with ASD can have difficulty understanding what such nonverbal signals mean.

Relationships. The *DSM-5* defines difficulties in this area of developing, maintaining, and understanding relationships to include difficulties adjusting one's behavior to suit different social contexts, difficulties sharing in imaginative play, difficulties making friends, and an apparent absence of interest in peers. On the spectrum of difficulties in relating to people, you might see one child who avoids social interactions, and you might see another who can tolerate social interaction with encouragement and can initiate social contact.

What comes naturally to some children, without conscious thought on the part of the child, may need to be taught specifically to students with ASD. Interventions that have received the most support in the research literature are those that deliver instruction, models, or prompts related to social interactions followed by tangible or social reinforcements delivered for correct responses and error corrections following an incorrect response (Plavnick, Kaid, & MacFarland, 2015). Video-based instruction using an Apple iPad to show video clips of social interactions is a strategy teachers have used with positive results, for example. Social skills groups are also a popular instructional strategy, where individuals with ASD meet several times per week to learn and practice social behaviors with one another and with instructors.

A commonly held misconception is that individuals with ASD do not want to socialize with others. In reality, we often hear that these children or adults do have a

desire for friends, but unwritten social codes that are readily understood by others seem indecipherable to them. It is true that they can seem uncomfortable in social settings and have difficulty making friends, but it may not be true that they have no desire to engage in social interactions.

RESTRICTED OR REPETITIVE PATTERNS OF BEHAVIOR, INTERESTS, AND ACTIVITIES

For a diagnosis of ASD according to the APA (2013), difficulties should be found in at least two of the following: (a) stereotyped or repetitive motor movements, use of objects, or speech; (b) insistence on sameness, inflexible adherence to routines; (c) highly restricted, fixated interests that are abnormal in intensity or focus; or (d) hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment.

Repetitive motor movements. Behaviors often associated with ASD, such as hand flapping, finger flicking, rocking, and spinning objects or self, are called *stereotypic behaviors*. Stereotypic behaviors are one of the core features of ASD and are one of the most frequent behaviors seen in individuals with ASD (Beighley et al., 2014). “All persons with autism, by its definition, will have some stereotypic behaviors at some time, and they may increase or decrease in frequency and/or intensity based on age and situation” (Boutot & Myles, 2011, p. 23).

Stereotypy comes in many forms. Most common manifestations include hand flapping, shaking objects, and repeating vocal sounds. Other forms of stereotypy can include opening and closing the mouth, grimacing, head tilting, head shaking, shoulder shrugging, tensing the body, stamping feet, spinning, and covering one’s ears. Repetitive vocal responses or unusual vocalizations in individuals with ASD are called *vocal stereotypy*. Although exact numbers are unknown, in one study, parents reported that 85% of children with ASD emitted atypical, repetitive vocalizations or speech (Mayes & Calhoun, 2011).

Insistence on sameness. Individuals with ASD tend to prefer things to be the same, or they prefer to be in a predictable environment. Change from one activity to the next, or transitioning from one setting to another (e.g., moving from classroom to outdoor recess) may cause distress. Individuals with ASD may feel overwhelmed when faced with unpredictable events and, as a result, will exhibit behaviors that appear to others as “meltdowns,” or they will withdraw from others or run away. Children with ASD prefer absolute consistency in their environment and their routines, and any slight change can be very disturbing. Any change in the normal routine, such as an unplanned stop at the market on the way home from school, could be very upsetting for children with ASD.

Restricted or fixated interests. Hyperfocus on a topic of interest is also a hallmark of ASD. These interests are often not shared with others of similar age (like playing

with SpongeBob figures at age 12) or are unusual at any age (e.g., washing machines or construction equipment). A fifth grader, for example, may choose to read only books or talk about machines for months. Many times, these preoccupations can take precedence over social interaction, or they may become the dominant topic of conversation when interacting with others. Sometimes, they have a tendency to talk endlessly about their topic of interest, and they have trouble recognizing when others have lost interest in the topic of discussion.

Children might have a preoccupation with parts of objects rather than the function of the object itself. A child might be interested in spinning the wheels of a toy truck, for example, rather than pretending to drive the truck around the room. Along the spectrum, another child might show a fascination with a particular category of objects and with accumulating as many of the interesting items as possible. For example, a child might collect unusual stones, packets of sweetener, felt-tip markers, or the like. Other children on the spectrum may develop an interest in a particular topic or concept. Common examples include transportation (trains, trucks, etc.), animals, or electronics.

Sensory input. In this category of impairments, children with ASD might have an apparent indifference to pain or temperature, an adverse response to specific sounds or textures, excessive smelling or touching of objects, or a visual fascination with lights or movement (APA, 2013). Many individuals on the autism spectrum can be painfully sensitive to certain sensations, like sights, smells, sounds, or textures.

Family Voices 1.2

“Your classroom is probably a very uncomfortable place for my son. The lights . . . the ticking clock . . . other students chatting and moving around . . . all this hurts his eyes and ears. When these things overwhelm him—which is often—he will act out.”

Some individuals with ASD are hypersensitive to sound, smells, or bright lights. The hum of an air conditioner, fan, a pencil sharpener, or the chatting of peers nearby can be a disturbing or painful experience that they seek to avoid, for example. For some children, sounds from a vacuum cleaner, a ringing telephone, an airplane overhead, or a car driving by can cause them to cover their ears and scream. An aversion to certain smells can be problematic as well, as are sensitivities to taste (resist certain textures of food, flavors, or brands). Some people are highly sensitive to bright lights, and they might react strongly to exposure to certain lights in the classroom.

Core Areas of Deficit	
Deficit Area	Common Behaviors
Social Communication	<ul style="list-style-type: none"> • Difficulty learning to interpret what others are thinking and feeling • Make little eye contact • Tend to look, listen, or respond less to people in their environment • Difficulty maintaining personal space, seeming to physically intrude on others • Lacking tact or appearing rude • Difficulty making or keeping friends • Appearing naïve, or easily taken advantage of • Difficulty understanding others' nonverbal communication (e.g., facial expressions, body language, or tone of voice) • Difficulty understanding jokes (often because of the literal nature of their thinking)
Restrictive, Repetitive, and Stereotyped Behavior, Interests, and Activities	<ul style="list-style-type: none"> • Expresses a strong need for routine or "sameness" • Expresses desire for repetition • Intense preoccupation with own unique interests • Asks repetitive questions • Displays repetitive motor movements, such as hand flapping, pacing, flicking fingers in front of eyes, or covering ears • Difficulty handling transition and change • Apparent indifference to pain or temperature • Adverse response to certain sensations, such as sights, smells, sounds, or textures • Visual fascination with lights or movement

OTHER FEATURES ASSOCIATED WITH ASD

In addition to the core features discussed previously, some studies have reported a number of associated features that are not necessarily required for a diagnosis but are often present in individuals with ASD. Here, we discuss cognitive and motor differences, emotional vulnerability, gastrointestinal problems, and language skills.

COGNITIVE DIFFERENCES

Signs of intellectual disability are also present in some individuals with ASD (NIMH, 2015). Moreover, just as in other areas of deficit on the autism spectrum, there is great variability in the intellectual performance of individuals with ASD. Individuals with ASD can demonstrate differences in verbal and nonverbal reasoning abilities, perceptual reasoning abilities, working memory, and processing speed. Children with ASD can also have differences in reading and math, as well as social cognition abilities (the ability to aware of the feelings of others). Generalizing skills, or the ability to apply concepts to real-life contexts, can also be impacted by ASD.

In reading, children with ASD may show weakened comprehension skills. Their ability to recount facts and details may be evident, yet using those facts to perform abstract reasoning tasks presents more of a challenge. One difficult area for students with ASD is the ability to comprehend text. While some children with ASD demonstrate the ability to decode text at a level above their current IQ, often outperforming their same-age peers in decoding skills, many children with ASD are outperformed by their peers in comprehension abilities (Nguyen, Leytham, Whitby, & Gelfer, 2015).

Inherent difficulties with understanding others' point of view or perspective likely contribute to the challenge of reading comprehension. For example, the curriculum in first grade expects children to understand characters' feelings in a text and relate those feelings to their own. Students with ASD struggle to understand that people have thoughts that differ from their own, or understand others' perspectives, and thus may have difficulties comprehending this part of the text. Individuals with ASD might also have trouble with comprehension due to their weak central coherence (the ability to combine details together to form a whole idea or concept) or challenges with executive functioning (the ability to plan, organize, monitor progress, and complete tasks) (Nguyen et al., 2015). Central coherence and executive functioning are skills necessary for comprehending text.

MOTOR SKILLS

In addition to social, communication, and behavioral deficits, many individuals with ASD have deficits in motor functioning. Such children will have difficulty with balance, manual dexterity, poor handwriting, and poor motor coordination, or they may walk with an awkward gait or walk on their toes. They might display unusual body postures (e.g., stiffness) or facial expressions (e.g., grimacing). Delayed motor milestones are not uncommon in children with an ASD diagnosis. Parents may observe a delay in learning to sit up, to crawl, and to walk or challenges with holding a spoon or small toy.

Impairments in fine motor skills impact a variety of areas for children with ASD, from the classroom to the home environments. For instance, difficulties cutting with scissors and poor penmanship are commonly observed by teachers regarding their students with ASD. Studies have established that children with autism have weaker grip strength than other children, which, in turn, can influence a variety of childhood tasks, such as handwriting

(Alaniz, Galit, Necesito, & Rosario, 2015). Limited grip strength can be problematic at home as well. For instance, any self-care skills, such as manipulating fasteners, tying shoes, or opening packages require fine motor control (Alaniz et al., 2015) and present a challenge for individuals with ASD. Other daily living skills that are impacted by fine motor skills include bathing, dressing, eating, and toileting.

EMOTIONAL VULNERABILITY

Emotions can be challenging for individuals with ASD to interpret. Not only can they be less likely to interpret and understand verbal or nonverbal expression in others, but they also have difficulty understanding or managing their own emotions. When faced with stress or even sensory overload, children with ASD are at greater risk for tantrums or rages that look like “meltdowns” to other observers.

Stress, obsessive worry, anxiety, self-injury (banging head, picking skin, or biting nails excessively, for example), and low self-esteem are commonly associated with ASD. Individuals with ASD may make frequent negative comments about themselves and have symptoms of depression. Depression is common among individuals with ASD. Typical symptoms of depression, such as irritability, sadness, crying, sleep disturbance, and appetite disturbance, can be present. Depression can also be accompanied by an increase in preoccupations and rituals and greater frequency of aggressive outbursts.

GASTROINTESTINAL PROBLEMS

The NIMH (2015) reports that parents say their children with ASD often have gastrointestinal or digestion problems, including stomach pains, constipation or diarrhea, acid reflux, vomiting, and bloating. Food allergies may also be evident in children with ASD. One study suggested that children with ASD might not have gastrointestinal (GI) problems but instead have behaviors that create GI symptoms. The researchers proposed, for example, that a child who insists on eating only certain foods might not get enough fiber or fluids, which leads to constipation. Some parents will put their child on a special diet in their attempts to control ASD or the associated GI symptoms. It may be true that some children can benefit from limiting certain foods, but there is no convincing evidence that these special diets reduce the symptoms of ASD, according to the NIMH (2015).

LANGUAGE SKILLS

Some individuals with ASD have relatively good verbal skills, with only a slight language delay, and they will demonstrate impaired social skills while others may not speak at all or have limited communication and interaction abilities. Still other individuals might use language in unusual ways, speaking only single words or repeating the same phrases over and over. Some might continually repeat what others say (called *echolalia*). The most

severe expression of symptoms in the area of communication skills is the silent child who has a vocabulary limited to sounds and not of words. This child may even be able to comprehend language but does not easily express him or herself. Parents might even observe their child's attempts to speak, but the child appears not to be able to connect through vocalizations.

A child who has limited speech may attempt to use other methods to communicate wants or needs. For example, Adele uses a system of symbols as alternative/ augmentative communication, and she can point to the picture of a toilet when she needs to use the restroom. If that form of communication is unsuccessful, Adele is forced to resort to less effective means of communicating her needs. Adele was on the playground one afternoon and did not have access to the picture of a toilet to indicate her needs. Because she was unable to express her needs to a teacher, Adele tried tugging on the teacher's hand, but when the teacher could not interpret Adele's needs, Adele began screaming and running away. The teacher shouted to Adele to stop running and return to the playground. This teacher, who was unaware of Adele's needs to use the toilet, interpreted her behavior as defiance and issued consequences that she felt appropriate. Adele was unable to use her alternative method of communicating, which was pointing at pictures, and therefore resorted to another strategy of running toward the toilet despite the teacher's requests to return.

The speaking abilities of some children with ASD may be in place, but they may require some external prompts. For example, when a child immediately echoes the utterance of someone or when he/she can see an object and say the name of the object or when a child uses sentences borrowed from a TV show or another speaker, the child might be using external prompts. Still other children with ASD can initiate original speech but have significant difficulties with pragmatic aspects of language. This child might use an unusual prosody or a tendency to be very pedantic, often making literal interpretations of a person's comments.

T.I.P. – Theory Into Practice 1.3

AUTISM CHARACTERISTICS OBSERVATION

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| 1. Make a checklist of the diagnostic criteria and associated behaviors of ASD discussed in this chapter. | 30 minutes to 1 hour to observe the child, at school or at home. |
| 2. Conduct an informal observation of someone you know who has received an ASD diagnosis. Give yourself about | 3. Check off each of the behaviors you notice the child exhibiting during the observation time. |
| | 4. Write a brief summary of your experience. |

INSTRUCTIONAL PRACTICES

One of the most commonly used instructional methods to address the learning needs of students with ASD is Applied Behavior Analysis (ABA). ABA will be discussed in detail in Chapter 5, which is devoted to this method. We will also consider functional behavior analysis (Chapter 6) and positive behavior supports (Chapter 7), environmental supports (Chapter 8), strategies for supporting social skills development (Chapter 9), and strategies for teaching communication (Chapter 10). Chapters 11 and 12 will also be devoted to teaching academic and functional skills to students with ASD. After a discussion of using assistive technology, we will introduce the idea of ASD and sensory processing and the related accommodations and adaptations educators can employ. Finally, strategies for working with children with ASD in early childhood settings (Chapter 13) and transitions to adulthood will be discussed (Chapter 14). All of the strategies at which we will look more closely are research-based and are designed to meet the needs of individuals with ASD.

INCLUSIVE CLASSROOM ENVIRONMENTS

The Individuals with Disabilities Education Act (IDEA, 2004) states that students with disabilities are entitled to experience the “least restrictive environment.” School districts are required by IDEA to educate students with disabilities in classrooms with nondisabled peers to the maximum extent appropriate, supported with the aides and services that may be necessary to make this possible. Not every student with ASD must be in a general-education classroom, however. The members of the IEP team will consider all of the issues and make the decision for each individual student with ASD.

The decision for students with ASD to participate in the general-education environment is referred to as inclusion. Inclusion does not mean that students are just “placed” in the general-education classroom and forgotten. It means that a variety of supports will be provided to create a successful learning environment and experience for everyone involved. Inclusion can be very successful for many children with ASD. Being educated alongside typically developing children can improve the functioning of children with ASD, including their social functioning. Children with ASD who are educated in the inclusive classroom are likely to engage in more social interactions than they would in other environments.

There is some controversy surrounding “inclusion” that should be mentioned here. Researchers and advocates agree that students with disabilities can learn well in inclusive environments alongside their peers, and there is evidence that students with disabilities tend to perform better in inclusive environments (Fruth & Woods, 2015). Despite the evidence, not all team members agree that inclusion is the best option. “Increasing the performance of students with disabilities and differences

requires a restructuring of the practice and approach of education,” which some team members may shy away from (Fruth & Woods, 2015, p. 352). A concern of many educators is the possible adverse effects of the presence of students with disabilities in the general-education classroom (Fruth & Woods, 2015). Fruth and Woods (2015) advocate that we work toward “dispelling such myths and opening up optimal educational experiences for all students based on practical evidence” (p. 354).

Family Voices 1.3

“Dear General Ed Teacher: I’m sorry—truly sorry—you don’t have the training you need to teach my daughter. I know you have 30 students in your class, all with different abilities, and you’ll have to give extra time to my daughter, and you don’t know how to help. I’m sorry for when she acts out or has a meltdown in your class, and I’m sorry that I don’t have all the answers.”

Given the IDEA mandate for considering the inclusion for students with special needs, throughout this book we will provide inclusion tips to accompany the instructional *best practices* for students with ASD. The tips provided in subsequent chapters are designed to help you better understand and manage the learning and behavioral characteristics that are unique to students with ASD.

TIPS FOR WORKING WITH FAMILIES

When there has been an ASD diagnosis, it becomes important that teachers and parents work together for the child’s best academic and social outcomes. Working with parents of children with ASD can be an important component of helping the child achieve his or her full potential. Parents know their child better than anyone else, and they can provide vital information to help their child succeed in school, and the well-trained teacher can provide strategies for parents to continue classroom learning into the home environment.

An important first step is to get to know the family well. When teachers and parents establish a meeting, it is helpful for the teacher to listen intently and allow the parents to talk about their child. When a parent feels comfortable sharing about their child, it creates the foundation for teachers to share issues that may arise in the classroom later. It is also important for teachers to be familiar with the IEP and to be able to communicate any educational terminology in ways that are easily understood by parents. Try your best to make parents feel comfortable now, and you will be better able to partner with parents in the future.

T.I.P. – Theory Into Practice 1.4

GETTING TO KNOW FAMILIES: QUESTIONS TO ASK

1. What are your child's areas of strength?
Tell me about a time when you saw your child demonstrating that strength.
2. What types of things work best for your child in terms of rewards or motivation?
3. What behaviors related to ASD am I most likely to see at school?
4. Are there triggers for these behaviors?
5. In your experience, what are the best ways to cope with these challenges and get your child back on task?
6. What are your concerns or fears about your child this year?
7. Is there anything else you can tell me about your child that you think would help support his or her learning?
8. What is the best way for us to communicate with one another about your child's progress and challenges (telephone, e-mail, Skype, after-school conferences, notes, or other), and what do you hope I'll communicate about?

Family Voices 1.4

"I really, really, really want to communicate with you. I know you are busy, but please tell me about my son's day—every day. If it was a great day, tell me why; if he had a rough day, tell me about it, and let's spend time talking about how to deal with it in the best way. Together we can come up with solutions so that the next day is just a little better."

SUMMARY STATEMENTS

- Children diagnosed with ASD may display, in varying degrees, social communication difficulties and restrictive, repetitive patterns of behavior, interests, or activities.
- Scientists have yet to determine the exact causes of ASD, but researchers suggest that both genetics and the environment play important roles.
- School districts are required by IDEA to educate students with disabilities in classrooms with nondisabled peers to the maximum extent appropriate, supported with the aides and services that may be necessary to make this possible.
- Parents and teachers who work together can form the successful partnership the child with ASD needs to reach his or her full potential.

WHAT WOULD YOU DO?

Look back at the case study about Mrs. Avery presented at the beginning of the chapter. Based on what you have read in this chapter and the knowledge you have gained from your professor's presentations or classroom activities, how would you respond to the following questions?

1. Which of the two children, Dylan or Erin, show some of the early signs of ASD?
2. What additional behaviors would you look for, if you were Mrs. Avery, to gain a more complete picture of the children's behaviors?
3. If you were Mrs. Avery, would you refer one of these students for further evaluation?
4. What next steps would you consider taking?
5. How might you respond to a parent who believes that childhood vaccinations were the cause of her child's unusual behaviors?
6. Do you think any of these children could be educated in the least restrictive environment with success?

CHAPTER REFLECTION QUESTIONS

1. Why is ASD considered a *spectrum*?
2. What are some possible causes of autism? Why are some of them controversial?
3. Describe the core deficits necessary to establish an ASD diagnosis.
4. Why might reading comprehension be troublesome for an individual with ASD?
5. What are some ideas about why individuals with ASD engage in repetitive behaviors?
6. Explain the rationale for educating students with ASD in the least restrictive environment.

RECOMMENDED RESOURCES

Autism Diagnostic Observation Schedule: The Autism Diagnostic Observation Schedule—Generic (ADOS-G) is an assessment of communication, social interaction, and play for individuals suspected of having ASD. Available at <http://www.google.com/#hl=en&source=hp&q=Autism+Diagnostic+Observation+Schedule&aq=f&aqi=&coq=&fp=400a82fa82571428>

Centers for Disease Control and Prevention. *Screening and diagnosis*. Available at <http://www.cdc.gov/ncbddd/autism/screening.html>

National Institute of Neurological Disorders and Stroke. Autism Spectrum Disorder Fact Sheet. Available at http://www.ninds.nih.gov/disorders/autism/detail_autism.htm

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