1: Challenging Behaviors of Individuals with Developmental Disabilities

Focus Questions

- What are the characteristics and types of developmental disabilities?
- What are some of the major challenging behaviors that this population often engages in and how can they be defined and measured?
- What is the prevalence of challenging behavior of individuals with developmental disabilities?
- What risk factors are associated with the occurrence of challenging behaviors?
- What is applied behavior analysis and the principles that account for behavior?

Understanding Developmental and Intellectual Disabilities

Children and adults with developmental or intellectual disability require the assistance of interdisciplinary professionals and parents to support their full development across adaptive areas. There are often many areas of need seen in a changing context across the individual’s lifespan. A developmental disability (Developmental Disabilities Assistance and Bill of Rights Act of 2000 PL 106-402) is a chronic mental and/or physical condition that occurs between 5 and 22 years-of-age and is likely to occur indefinitely (www.govtrack.us/congress/bills/106/hr4920) (Brown & Felce, 2007). For a diagnosis of developmental disabilities, the individual shows functional limitations in three or more categories of: self-care, receptive and expressive language, academic learning, mobility, self-direction, independent living, and economic self-sufficiency. The ability of individuals with developmental disabilities to interact with others in an appropriate manner, to take care of one’s self and one’s needs, and to maintain focus and active learning are critical skills. Failure to perform in a general education classroom is often linked to poor social skills (Salend, 2005). The related services, care, and treatment required to provide the individually tailored support needed may span professional areas such as: medical, speech-language pathology, special education, psychology, occupational therapy, physical therapy, counseling, and
social work among others (www.acl.gov/Programs/AIDD/Index.aspx).

The current diagnostic criterion for developmental disabilities is based more on function (limitations and capabilities) than category. As seen in Table 1, the main developmental disabilities include intellectual disability, autism spectrum disorder (ASD), cerebral palsy, and seizure disorder (Odom, Horner, Snell, & Blacher, 2007). Some individuals may have social, emotional, and behavioral issues within the definition of the disability (Vaughn & Bos, 2009). A functional diagnostic system provides information for treatment possibilities and deemphasizes labels that may produce negative connotations and reactions by others (Panek & Smith, 2005; Scior, Connolly, & Williams, 2013).

<table>
<thead>
<tr>
<th>Developmental Disability</th>
<th>Description</th>
<th>Resources</th>
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<tbody>
<tr>
<td>Intellectual Disability</td>
<td>Characterized by significant limitations in both intellectual functioning and adaptive behavior, which covers many everyday social and practical skills (AAIDD, 2010; DSM V, 2013)</td>
<td><a href="http://www.aaidd.org">www.aaidd.org</a></td>
</tr>
<tr>
<td>Autism Spectrum Disorder</td>
<td>A developmental disorder involving a wide range of significant impairment of social communication and interaction with repetitive behavioral aspects or restricted range of interest (DSM V, 2013)</td>
<td><a href="http://www.cdc.gov/ncbddd/autism/index.html">http://www.cdc.gov/ncbddd/autism/index.html</a></td>
</tr>
<tr>
<td>Cerebral Palsy</td>
<td>Non-progressive, permanent brain damage that affects muscle movement, balance, and/or posture.</td>
<td><a href="http://cerebralpalsy.org/about-cerebral-palsy/what-is-cerebral-palsy/">http://cerebralpalsy.org/about-cerebral-palsy/what-is-cerebral-palsy/</a></td>
</tr>
<tr>
<td>Seizure Disorder</td>
<td>A sudden disruption of the brain’s electrical activity accompanied by altered consciousness or behavior.</td>
<td><a href="http://www.epilepsy-foundation.org/">http://www.epilepsy-foundation.org/</a></td>
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According to a survey of over 100,000 parents, approximately 14% of American children have a developmental disability (Boyle et al., 2011). In this study, developmental disability was very broadly defined and included learning disability, stuttering, and Attention Deficit Hyperactivity Disorder (ADHD) in addition to the categories listed in Table 1. The most common developmental disabilities include learning disability and ADHD with the prevalence of autism and ADHD increasing from 1997–1999 to 2006–2008 (Boyle et al., 2011). A recent United States nationally representative telephone survey of over 60,000 households with children found that the prevalence of autism spectrum disorder (ASD) was 2% among children ages 6-17 years in 2011-2012, an increase from 1.16% found in 2007 (Blumberg et al., 2013).

**Behaviorally Defining & Measuring Challenging Behaviors**

In addition to deficits in academic performance and adaptive behaviors, individuals with developmental disabilities often engage in **challenging behaviors** (Lowe et al., 2007; Poppes, Van der Putten, & Vlaskamp, 2010). Emerson (2001) defines challenging behavior as, “culturally abnormal behavior(s) of such intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behavior which is likely to seriously limit use of, or result in the person being denied access to, ordinary community facilities” (p. 3).

General categories of challenging behaviors include aggression, stereotypy, self-injurious, or disruptive behaviors. These categories require additional description to allow reliable assessment and treatment procedures to be performed.
More specifically, self-injurious behavior (SIB) may consist of the individual forcibly (loud smack sound) hitting one’s own body with open or closed hand, or banging head against self or objects. A more specific and objective description of the behavior is necessary because one person’s definition of a general category of behavior, such as aggression, may differ from another’s, which is a problem in reliability. For instance, in one study in which 120 teachers were asked to define “disrespectful” behavior, over 17 different behaviors were given (e.g., talking back, not following teacher’s directions, interrupting adults) (Landers, Servilio, Alter, & Haydon, 2011). A behavior category would be inaccurately measured if it means one thing to one person and quite another to someone else.

A behavioral definition must be objective, clear, specific, and complete such that two observers naïve to that person could read the definition and independently and reliably identify instances of the same behavior (Hawkins & Dobes, 1977). This approach to determining the accuracy of measurement and adequacy of definitions is called interobserver reliability. Accurate measurement of the behavior is necessary for assessment purposes, to implement treatment procedures accurately, and to evaluate treatment effectiveness (Martin & Pear, 2011). For example, one behavioral definition of self-injury involves biting self by upper and lower teeth making contact with skin resulting in pink marks or indentations on skin (see Matson, & Turygin, 2012 for additional definitions of self-injury). Likewise, tantrumming is inadequate as a description of challenging behavior since it refers to a general category of behavior that would be open to interpretation. More specifically and objectively, tantrumming might be defined as screaming above a normal conversational level and forcefully banging one or both fists on the table. Aggression might be defined as making contact with an open hand, fist, or foot to any body part of another person. See Table 2 below for a list of questions to determine if your behavior definition is adequate.

Table 2: Checklist to gauge adequacy of behavioral definition

Checklist to determine if the behavior of interest, challenging or desired behavior, is appropriately defined

- Can you count or time the behavior, or measure how long it takes before it occurs?
- Did you use observable and measurable terms in defining the behavior?
- Will a stranger know exactly what behavior to look for after reading your definition?
- Can you explain what the behavior is not (i.e., give non-examples of the behavior)?
- Can you break the behavior into smaller specific, and more observable units?

In addition to defining the behavior well, behavior measurement procedures must be specified. Behavior can be observed and measured in terms of how many times it occurs or its frequency (e.g., number of coughs, instances of throwing chairs, or interruptions), how long the behavior occurs or its duration (e.g., duration of screaming, out-of-seat, or off-task), the form or topography of the behavior (e.g., how a yoga move is made, or how hair is brushed), or how long it takes for the behavior to occur following a stimulus or its latency (e.g., how long before someone walks to school after being told to go, or does their homework after it has been assigned). A behavior can also be measured in terms of its remnants, called permanent product (e.g., throwing items can be measured by counting the items on the floor, destroying furniture may be measured by counting the disconnected pieces). The frequency or duration of behavior within a larger period of time can be measured (See Miltenberger & Weil, 2013 for more). This is termed continuous recording.
Reliable identification of the challenging behavior will facilitate assessment of its function so that effective interventions can be designed. We will review environmental reasons for challenging behavior after considering prevalence and associated factors.

**Prevalence, Risk Factors, and Psychosocial Implications of Challenging Behaviors**

The likelihood of professionals encountering individuals displaying challenging behaviors is fairly high. One prevalence estimate of challenging behaviors displayed by people with intellectual disabilities ranges from 15-17.5%, according to Koritsas and Iacono’s (2012) review of 22 frequently-cited studies. It should be noted that estimates of prevalence of challenging behaviors for individuals with developmental disabilities varies depending on the methodology used (e.g., variations in definitions, assessment measures) and population addressed (e.g., institutional, residential, nationalities). When focusing on self-injurious behavior, a 19.1% prevalence rate was found in one state-wide parent survey of children with developmental disabilities (MacLean & Dornbush, 2012).

There are many co-occurring factors (such as diagnostic category and level of functioning) that may compound the difficulties that the individual with challenging behaviors and others around that individual face. Children with autism are more likely to show behavior problems compared to children without autism and more individuals with severe conditions are more likely to engage in challenging behaviors compared to those with less severe conditions (Totsika, Hastings, Emerson, Lancaster, & Berridge, 2011). In their sample of over 1,300 North American children and adolescents with autism, Felce and Kerr (2013) found that 88% of individuals with autism engaged in mild to severe aggression, with those cases mostly occurring to caregivers (56%). However, even with a sample of high functioning children with autism spectrum disorder, 72-86% had some sort of behavioral or emotional problems (Yoon, Ze, Tze, & Min, 2011).

Similarly, more severe levels of intellectual disability and autism have been found to be associated with the occurrence of challenging behaviors in a sample of adults with disabilities in Sweden (Lundqvist, 2013). More than half (62%) of these individuals had at least one challenging behavior as gathered through administration of the Behavior Problems Inventory (Rojahn, Matson, Lott, Esbensen, & Small, 2001) via interview method.

Multiple challenging behaviors and/or comorbid psychiatric conditions may be more likely to be present with individuals who display challenging behaviors (Rosenberg, Kaufmann, Law, & Law, 2011). Based on the use of the Self-Help and Behavior rating scale administered to 943 children with severe disability, Oliver, Petty, Ruddick, and Bacarese-Hamilton (2012) found that high frequency repetitive or ritualistic behavior was associated with a greater risk of severe self-injury. Moreover, low mood of people with severe and profound intellectual disabilities has been associated with challenging behaviors (Hayes, McGuire, O’Neill, Oliver, & Morrison, 2011). A higher rate of challenging behaviors was found with young children with atypical development and no ASD and comorbid psychopathology (e.g., anxiety behaviors, conduct problems, eating/sleeping problems, inattention/impulsivity) as measured by the Baby and Infant Screen for Children with Autism Traits (Matson, Mahan, Sipes, & Kozlowski, 2010). Likewise, higher rates of challenging behavior have been found with a sample of adults with developmental disabilities and symptoms of depression (Turygin, Matson, MacMillan, & Konst, 2013).

The presence of communication deficiencies has also been linked to the occurrence of challenging behaviors (Kevan, 2003; Matson, Boisjoli, & Mahan, 2009). In one interesting study examining the relationship between communication
skills, social skills and challenging behaviors with 109 children with ASD though, the presence of challenging behaviors was associated with more impaired social skills than difficulties in communication (Matson, Hess, & Mahan, 2010).

It is important to note that the studies cited above examining associated risk factors with the occurrence of challenging behaviors involved some form of descriptive/correlational research method, which merely provides information about the type of association and its strength. Correlational results do not provide information about causation or cannot tell if one variable causes another; such as the proposition that poor communication skills cause challenging behaviors to occur. It may be that poor communication causes challenging behavior, challenging behaviors cause poor communication, or quality of early home environment causes both poor communication and challenging behaviors. The careful manipulation and control of confounding variables involved with an experimental research method rules out alternative explanations and that methodology is not present with correlational research designs. Correlational research simply portrays the relationship between two variables (e.g., positive relationship where both variables increase, negative relationship where one variable increases as the other decreases). In the research cited above, due to the nature of the variables studied (e.g., type of disability and occurrence of challenging behavior), only descriptive/correlational research is possible.

The ramifications of challenging behavior are pervasive. Severe behaviors such as aggressive, self-injurious, and disruptive behaviors can be some of the most intractable and troublesome to deal with, contributing to staff and teacher stress and burnout (Hastings & Brown, 2002; Male & May, 1998). Parenting stress has been associated with higher levels of child behavior problems (Rezendes, & Scarpa, 2011). Totsika et al. (2011) found that mothers of children with autism are more likely to have emotional problems compared to mothers of children without autism. The occurrence of challenging behavior by the individual may also negatively affect attachment with support staff (De Schipper, & Schuengel, 2010). Staff may see themselves as less able to control the individual’s behavior if it is severe and thus less likely to step in to intervene to improve it (Dilworth, Phillips, & Rose, 2011).

The occurrence of challenging behaviors may lead to the use of restrictive procedures to curb those behaviors (Matson & Boisjoli, 2009). Allen, Lowe, Brophy, and Moore (2009) reviewed social service agencies’ plans for 901 individuals with developmental disabilities in South Wales, UK, and found that more severe aggressive behavior was associated with a higher use of restrictive procedures (e.g., seclusion, emergency restraint, medications).

### Applied Behavior Analysis

Applied behavior analysis (ABA) principles and techniques provide a means of addressing the challenging behaviors of individuals with developmental disabilities. ABA consists of a variety of environmentally-based procedures to increase socially significant behaviors (Cooper, Heron, & Heward, 2007). ABA is based on learning principles and procedures, and many of the techniques used in this field have been empirically validated to be effective at changing overt (observable) and covert (e.g., thoughts, feelings, images) behaviors. The use of ABA has led to a greater understanding of the occurrence of both normal and abnormal behaviors and has resulted in the development of many empirically-based treatment procedures for challenging behaviors (Fisher, Piazza, & Roane, 2012).

### Environmental Factors Maintaining the Individual’s Challenging Behavior

The main factors that contribute to the occurrence of challenging behavior include the immediate environmental
consequences that follow that behavior and the cues or antecedents that signal those desired consequences. A recent meta-analysis of over 170 empirical studies found that, in most clinical cases, a clear environmental reason for the individual’s challenging behavior was identified (Matson et al., 2011).

Positive reinforcement and negative reinforcement are the basic environmental functions or maintaining variables for individuals’ challenging behavior (e.g., Beavers, Iwata, & Lerman, 2013; Lancioni, Singh, O’Reilly, Sigafous, & Didden, 2012; Matson, 2009). Positive reinforcement is a term used when events, objects, or sensory stimuli presented immediately following a behavior result in an increase in that behavior in similar situations (Martin & Pear, 2011). For instance, an adolescent who has severe intellectual disability and is in a wheelchair may grab at staff’s clothes resulting in much negative attention from the staff member (e.g., a stern look and statement to, “Please don’t do that!”). Although the staff member may be attempting to decrease the individual’s behavior, if the grabbing behavior is increasing and occurring when someone is around, then that behavior may be maintained by positive reinforcement in the form of attention. Positive reinforcers are the specific consequences that increase the individual’s behavior that they follow and can include attention, toys (tangibles), or food (edibles). It should be recognized that there are many consequences that are positive reinforcers for a child and that what is a positive reinforcer for one may not be for another. Attention (even in the form of reprimands), objects (e.g., toys, food, electronic devices), and specific events (e.g., seeing a show, going for a walk) can be positive reinforcers when they increase the behavior that preceded it.

Reinforcement may also be produced by engaging in the behavior itself without any mediation by others, termed automatic positive reinforcement. For instance, the individual might be engaging in excessive finger tapping as a function of the sensory stimulation produced by that behavior. Likewise, thumb sucking may occur because of the sensations it produces on the skin.

Another major function of challenging behavior is negative reinforcement (Lancioni, Singh, O-Reilly, Sigafoo, & Didden, 2012). Negative reinforcement refers to stimuli or events that when removed or avoided immediately after a behavior increase its rate in similar situations (Martin & Pear, 2011). A negative reinforcer is an object or event that when it is immediately removed (escape conditioning) or prevented (avoidance conditioning) following a behavior results in that behavior being more likely to occur in similar situations. For example, a child at the dinner table may scream at the top of her lungs leading to the parent sending the child to her room. If that child screams at dinnertime more often, then negative reinforcement, in the form of “escaping” from the dinner table, may be occurring. As another example, a child who is having difficulty with his homework talks to nearby classmates to avoid completing the work. See Table 3 below for additional examples of challenging behaviors maintained by positive and negative reinforcement.

Table 3: Examples of Challenging Behaviors Maintained by Positive and Negative Reinforcement

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>The individual may receive one of the following after the behavior resulting in its increase:</td>
<td>One of the following may be removed or avoided after the behavior resulting in its increase:</td>
</tr>
<tr>
<td><strong>Attention</strong> (e.g., reprimands given after a child screams)</td>
<td><strong>Demands/tasks</strong> (e.g., tantrums result in unpleasant task or situation being removed)</td>
</tr>
<tr>
<td><strong>Tangible</strong> (e.g., hitting another child to get a toy, grabbing someone’s food)</td>
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Automatic (nonsocial sensory-based) (e.g., sucking fingers due to the sensation it produces, regurgitation to stimulate the esophagus, screaming because of the sound produced, rocking due to inner ear stimulation)

Attention (e.g., running away to remove undesired attention)

Automatic (nonsocial sensory-based) (e.g., hitting head to relieve pain, being aggressive to remove noise or get out of a crowd)

As is the case with positive reinforcers, a stimulus that is a negative reinforcer for one individual may not be so for another. The best way to determine if something is a negative reinforcer is to test whether the rate of a behavior increases when certain events are removed immediately after that behavior compared to a condition in which no consequences are delivered following the behavior. To ensure consistency in the results and rule out confounding factors, this test should be replicated or repeated in an A-B-A-B fashion where A = no consequence and B = a consequence for behavior is provided.

A history of reinforcement for the occurrence of challenging behavior in addition to the presence of certain antecedent stimuli or conditions that “set the stage” or increase the likelihood for the behavior (e.g., difficult work assignment, certain person) should be identified. The purpose of assessment is to identify the reason or function for the individual’s challenging behavior. An analysis of the function of behavior entails breaking the situation into smaller units to allow a clearer understanding and determination of the behavioral principle (positive reinforcement or negative reinforcement) involved in controlling the individual’s behavior (Martin & Pear, 2011). The motivational condition, antecedent stimulus, behavior, immediate consequence, and long term effects should be identified to reveal the behavioral principle that is involved, as illustrated in the box below. A motivational operation refers to a temporary state or condition that changes the value of the reinforcer and the probability of behavior that leads to that reinforcer (Michael, 2000). For instance, after not drinking water for several hours while out in hot weather, the value of a drink as a positive reinforcer will increase and there is a greater likelihood of the individual asking for something to drink. Additional examples of how the individual’s situation can be broken down, and thereby better understood by analyzing the motivational condition, antecedent stimulus, behavior, and immediate consequence is shown in Table 4 below.

Table 4: Examples of a behavioral analysis of the situation in terms of the motivating conditions, antecedents, and consequences for behavior

<table>
<thead>
<tr>
<th>Motivational condition</th>
<th>Antecedent stimulus/situation</th>
<th>Behavior</th>
<th>Immediate consequence</th>
<th>Long term effect</th>
<th>Behavioral principle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunger</td>
<td>Middle of night</td>
<td>Adolescent gets up and screams and yells</td>
<td>Provided with pudding</td>
<td>More likely to scream and yell in future similar situations</td>
<td>Tangible positive reinforcement</td>
</tr>
<tr>
<td>Lonely or no social interaction for hours</td>
<td>Presence of staff member</td>
<td>Young adult in wheel chair grabs staff member</td>
<td>Staff member says, “No, don’t do that!”</td>
<td>More likely to grab staff members in similar situations</td>
<td>Attention positive reinforcement</td>
</tr>
<tr>
<td>Difficult</td>
<td>Teacher</td>
<td>Child gets out of seat</td>
<td>Gets out of</td>
<td>More likely to get out of seat</td>
<td>Escape</td>
</tr>
</tbody>
</table>
Motivational condition | Antecedent stimulus/situation | Behavior | Immediate consequence | Long term effect | Behavioral principle
--- | --- | --- | --- | --- | ---
assignment | says, “Complete this assignment” | seat and socializes with neighbor | doing assignment | and socialize when given difficult assignments next time | negative reinforcement
Low levels of stimulation | Light switch present | Repeatedly flicks light on and off | Sensory stimulation of light flickering | More likely to flick lights when in a similar situation | Automatic positive reinforcement

Determining the function of an individual’s challenging behavior can, at times, be difficult. For a small percentage of cases, the individual’s behavior may be controlled by multiple functions or be unable to be specified (Beavers & Iwata, 2011; Mueller, Nkosi, & Hine, 2011). The challenging behaviors of 521 participants reviewed by Beavers and Iwata (2011), showed only 16.9% had multiple functions with most behaviors involving multiple response topographies. In a small percent of cases (roughly 4-12%), the individual’s challenging behavior may be maintained by idiosyncratic variables or, particular antecedents or consequences specific to that case (Schlichenmeyer, Roscoe, Rooker, Wheeler, & Dube, 2013). As Schlichenmeyer et al. (2013) note in their review of the research literature, idiosyncratic variables such as preferred conversation (Roscoe et al., 2010), instructional style (Borrero et al., 2004), or the therapist leaving the room (Edwards et al., 2002) may be involved in setting the context for increased likelihood of the occurrence of the individual’s challenging behavior. These idiosyncratic variables may be difficult to pinpoint unless assessment procedures are tailored to the individual’s circumstances. Additional factors that may contribute to the individual’s challenging behavior can be seen in Table 5 below.

Table 5: Possible relevant factors that may be related to the occurrence of challenging behavior

**Organismic**
- Motivational state (e.g., hungry, thirsty)
- Temporary bodily states (e.g., fatigue, menstrual cramps)
- Emotional state (e.g., jealousy, frustration) and other conditioned emotional responses (fear, anger, anxiety)
- State of health (e.g., flu, headache, allergies)
- Medication effects and side effects (e.g., lethargic)

**Familial**
- Abuse, neglect, nutrition, poverty, loss of work, death in family, socioeconomic factors, ethnicity
School-related

- Size of room, number of people, teacher proximity, temperature, noise, lighting, unclear directions, unpredictability, inadequate help, unclear expectations
- Events, holidays, certain activities (e.g., dances), visitors

Special Education Perspective

Many children with behavior disabilities (BD) including challenging behaviors are served in general education classroom settings. Approximately 25% of all school age children identified with a disability are labeled as having a behavior disability (Vaughn & Bos, 2009). Twice as many males as females are labeled as having BD and more children who are African American are labeled than any other ethnicity (Vaughn & Bos, 2009).

School districts and agencies often lack personnel trained in the professional decision making process to handle these difficult situations and so must hire experts to provide training at high financial cost (Hall & Hall, 2003). It is of critical importance to develop partnerships between schools that lack the expertise and colleges and universities that can train teachers to manage challenging behaviors (Johns & Carr, 1995).

The movement for inclusion of students with disabilities in public schools has had a major impact on the way teachers are trained to work with all students and on the way students learn in the classroom setting (Mastropieri & Scruggs, 2010). The inclusion movement, which began in the early 1990’s after decades of integration of students with disabilities into the least restrictive environments (LRE) for learning, redefines the philosophy of teaching and learning so that all learners, regardless of abilities, have the opportunity to work on their academic and social skills alongside of their peers. Inclusion is the process of teaching so all students can process and understand the material in whatever way is best for them. Inclusive education is a core belief and set of teaching practices that supports the tenet that all students should be full members of the community (Shapon-Shevin, 2007, p. xii). However, students with challenging behaviors are often found to be segregated due to those behaviors. Professionals and families must work together to ensure that the effects of challenging behavior are addressed in inclusive educational settings that provide heterogynous groupings for students.

As inclusive classrooms across the United States continue to evolve according to legal mandates, teachers’ beliefs and practices are still being challenged by the changes in the students who make up their classroom communities (Shapon-Shevin, 2007). As new, pre-service level teachers enter the field of education with training, they must demonstrate the dispositions, knowledge, and skills to work with all students. The instructional demands for teachers are staggering; many classes have students for whom English is not their primary language, students who have experienced trauma, students who are years behind their classmates, and students who lack basic experiences for understanding their world. For teachers, the demands are to assist students and their families in the identification and remediation of challenging behaviors that prevent full inclusion placements. However, the movement may not be successful especially for those students with significant behavioral needs if educators cannot find a way to identify, assess, and intervene in these significant behavioral challenges in classrooms. A strong need exists for effective methods to decrease the challenging
behaviors of individuals with developmental disabilities.

Summary

Individuals with developmental disabilities may display a broad array of challenging behaviors and lack the social and adaptive behaviors that are necessary for functioning in everyday life. However, students with disabilities have the right to be educated in settings that are heterogeneous. Inclusion has been used to describe the education of students with disabilities in general education settings or inclusive settings with peers who can act as role models. Co-occurring conditions for the individual may be present and increase the difficulty and complexity of that case for the professional addressing the individual’s needs. The first step when attempting to help the individual is to behaviorally define that person’s challenging and desired behaviors, which can assist in its measurement, assessment, and treatment.

Environmental factors, such as positive reinforcement and negative reinforcement, are major reasons for the occurrence of challenging behaviors and must be addressed in on-going assessment and treatment procedures. Applied behavior analysis is an empirically-based approach that can be used to teach adaptive and desirable behaviors and decrease the challenging behaviors observed in various settings with this population. Chapter 2 will review FA methods as a means to identify the function of individual’s challenging behaviors.

Discussion Questions

1. What challenging behaviors are most important to address? What considerations are important when prioritizing which of several challenging behaviors should be targeted?
2. Discuss whether risk factors are likely to cause challenging behaviors. Explain why it is difficult to know what the cause or challenging behaviors is (hint: draw from your knowledge of research methods).
3. Why is it important to understand the function of an individual’s challenging behavior?

Exercise 1: Behavior Definition

1. What are the characteristics of a well-defined behavior?
2. Are each of the following definitions of behavior adequate? If not, then revise the definition to improve it.
   1. Non compliance = a child does not complete the instruction delivered by the experimenter within 6 s of presentation of the instruction
   2. Stereotypy = flapping hands or arms, rocking torso, jumping and turning in circles, waving, mouthing
   3. Aggression = firmly grabbing and pulling on the experimenter or cursing
3. Read the following behavioral definitions and determine if you think the problem behavior in bold is well-defined. If your answer is “no,” change the problem behavior by defining it appropriately.
   1. Tomika is very disrespectful in that she sasses her teachers when she does not want to do what they ask.
   2. Paula engages in inappropriate interactions with her peers by being quiet and disagreeable.
   3. Inappropriate vocalizations that Ternia says include loud or high-pitched statements such as “No!” and “I want to go home.”
4. Define teasing.
Exercise 2: Identifying, Defining, and Measuring Behavior

With a partner, go to a public location (e.g., cafeteria, library, building hallway or courtyard) and identify a behavior that one or many individuals are displaying. Be sure that the behavior occurs fairly frequently (e.g., at least once per min).

1. Behaviorally define the behavior.
2. Indicate how to measure it (e.g., frequency, duration, latency, permanent product). Select a data sheet from Chapter 7 templates.
3. You and your partner should independently measure it.
4. Compare your data with your partner’s. Did you agree on all occurrences of the behavior? Why or why not? How could you improve your definition of the behavior?

Exercise 3: Practice in Identifying Behavioral Principles

Next, determine for each of the following if this is an example of positive or negative reinforcement.

Sally receives a point on her score card for making a perfect shot in basketball. She is shooting baskets better than ever.

- Positive Reinforcement
- Negative Reinforcement

A child is in the dentist’s seat and when the dentist goes to insert a tool in his mouth, the child shakes his head and says, "No!" The dentist removes the tool and moves away from the child. The dentist always has a hard time with this little fellow.

- Positive Reinforcement
- Negative Reinforcement

Frederick is a teenager with an obesity problem who joins the gym, and regularly works out. His best friend works out with him and repeatedly tells him how he is getting stronger and fitter right after each session. Frederick goes to the gym more often.

- Positive Reinforcement
- Negative Reinforcement

Whenever a teacher places a worksheet on the student’s desk, the student then gets up and sharpens an already sharp pencil to get out of doing the work.

- Positive Reinforcement
- Negative Reinforcement

In school art class, Almero made some paper cut-out flowers to give to his mom, which resulted in many hugs and
kisses from his mom. He does this more often now.

- Positive Reinforcement
- Negative Reinforcement

Exercise 4: Analysis of Challenging Behavior Exercise

1. Think of someone you know who engages in a challenging behavior.
2. Behaviorally define the individual’s challenging behavior so that it might be reliably observed and measured.
3. Speculate on the possible environmental reason for it by completing the following chart.

<table>
<thead>
<tr>
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