## What's It All About?

- What laws guide services for students with exceptional  earning needs?
- What are the unique needs of students with attentional issues, giftedness, and exceptional creativity?
- How do special learning needs affect life outside the classroom?

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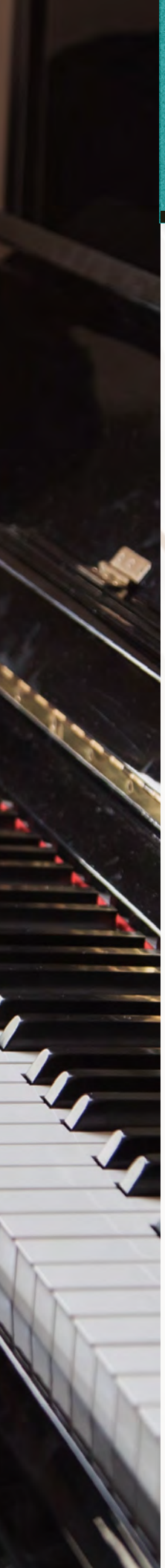

Chapter 11

# Exceptional Learning: Attention, Giftedness, Creativity, and the Family

## Chapter Objectives

- Review the Rehabilitation Act of 1973—Section 504.
- Review the Americans with Disabilities Act (ADA).
- Compare Section 504, ADA, and the Individuals with Disabilities Education Act (IDEA).
- Describe attention-deficit/hyperactivity disorder (ADHD).
- Describe giftedness and creativity.
- Explain how exceptionality affects the family.
- Describe the relation between exceptionality and cultural diversity.

# Extended Outline

## Exceptional Learning: Attention, Giftedness, Creativity, and the Family

*From Today's Headlines*

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- 11.1a Rehabilitation Act of 1973—Section 504
- 11.1b Americans with Disabilities Act (ADA)
- 11.1c Comparing Section 504, ADA, and IDEA
  - Defining Disability
  - Eligibility Protection under IDEA, Section 504, and ADA
  - Section 504 and ADA: Primary Goals
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*Summarize and Reflect*

11.2 Special Needs: Attention-Deficit/Hyperactivity Disorder and Giftedness and Creativity

- 11.2a Attention-Deficit/Hyperactivity Disorder
  - ADHD Identification and Controversies
  - Causes of ADHD
  - Assessment
  - Medication
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- 11.2b Giftedness and Creativity
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*Summarize and Reflect*

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  - Identification and Diversity
  - Cultural Diversity and Representation in Gifted Programs

*Summarize and Reflect*

The Chapter in Review

Interdisciplinary Case Focus

Key Terms

# From Today's Headlines

Addison Whitmer ◆ (November 22, 2022) ◆ *Deseret News*

## When the 'Gifted' Kids Aren't Right

The article written by Addison Whitmer discusses the challenges faced by gifted children in the American education system. According to Whitmer, gifted children within the context of school are those who have greater facility with academic material than their peers, but they often struggle in the classroom due to a lack of resources and support. One of the primary reasons for this is how educators approach teaching gifted students. Teachers are overworked, underpaid, and stressed with multiple simultaneous demands on their time. Whitmer reports those who remain in the profession are charged with supporting as many students as possible and when it's time to review test scores, the students who get high marks aren't the ones identified as needing additional assistance. "The kids who are low-achievers, the kids who are struggling with reading and math . . . all of the programs now are focused on getting those kids up to average. When we look at state testing, that's what we're looking at," Watterson said. And gifted kids are already there, which leads to teachers attending to other students.

The article also highlights the importance of providing therapeutic interventions to help gifted high schoolers' psychological well-being, as well as rekindle academic motivation in gifted students. The article also suggests that one potential solution for improving outcomes for gifted students is to provide more resources and support for teachers. This could include professional development opportunities, mentorship programs, and increased funding for gifted and talented programs. Another solution is to provide more individualized instruction and support for gifted students, such as advanced coursework, mentorship programs, and counseling services. Whitmer discusses the importance of identifying gifted children early on and providing them with the resources and support they need to succeed.

This can include early screening and assessment, as well as specialized programs and services for gifted children. By identifying and supporting gifted children early on, we can help ensure that they are able to reach their full potential and succeed academically and personally. Additionally, by identifying and supporting gifted children early on, we can help ensure that they are able to fully develop their talents and abilities.

(Adobe Stock)

It's important to identify gifted children early and to provide them with resources and support to succeed.

### Make the Connection

This chapter is about exceptional learning situations. As we can see from the Whitmer article, learning ability is often outside the norm and presents a variety of educational challenges. In this chapter, we will explore the unique needs of students with attentional issues, giftedness, and exceptional creativity. We will review relevant legislation governing education of these children. We will then look at how teachers can meet the needs of these exceptional learners. Finally, we will explore the impact of culture on the education of exceptional children.

# 11.1 Accommodating Special Learning Needs: Legislation and Practice

Today's teachers are highly skilled professionals. Their education and training enable them to teach a broad range of students. Some of their students will follow a typical developmental path, but others will require special attention. The special education system, which is governed by the Individuals with Disabilities Education Improvement Act (IDEIA; the acronym IDEA derived from a previous law is more commonly used), is a comprehensive system providing services for students with special needs (See Chapter 10 for a discussion of the special education system). In addition to IDEA, however, there are other legislative acts also governing services to students with special needs. These laws have a real impact on the educational system and the way teachers educate. Virtually all educators will teach students with special needs. If they are to meet the needs of these students, they will need to be familiar with these laws. The first section of this chapter reviews two important laws and their impact on educating students with learning differences. Next, we examine two of the most common learning situations either covered by legislation in addition to IDEA or not covered by IDEA at all. We look at the education of students with attention-deficit/hyperactivity disorder. This disorder receives enormous coverage in the press but is often misunderstood. We will also look at students identified as gifted and talented and their unique educational challenges. Throughout the section, we will discuss the process for providing necessary services, as well as the process of identification. The final section of the chapter looks at the lives of students with exceptionalities outside the classroom. Effective education includes an appreciation of the life circumstances of our students. We look at their social integration in the context of both peers and family. We will also review exceptionality as it relates to cultural diversity. To begin our exploration of these exceptional students, let's begin with a look at the legal aspects of providing services to students outside of the IDEA legislation.

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The Individuals with Disabilities Education Improvement Act (IDEIA) governs the education of students with certain special needs.

## 11.1a Rehabilitation Act of 1973—Section 504

Understanding the laws influencing the education of students with special needs is difficult. As we discussed in the last chapter, the Individuals with Disabilities Education Act (IDEA) governs the education of students with certain special needs. IDEA specifically addresses many disability categories. It does not, however, target every special need situation. The most notable exception is attention-deficit/hyperactivity disorder (ADHD). ADHD is a possible qualifying condition under the IDEA category of other health impaired (OHI), not a separate disability category. IDEA lists the following as possible qualifying conditions under the OHI category: asthma, attention-deficit disorder or attention-deficit/hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, and sickle cell anemia. This means that students with ADHD could receive services under IDEA. In a 2018 study (DePaul, G. J. et al., 2018) of 2,495 children with ADHD aged 4 to 17 years found that 42.9% of students received services under IDEA compared to 13.6% receiving services under Section 504 of the Rehabilitation Act of 1973. Other students with special learning needs are not addressed at all under IDEA. Students who are gifted and talented or exceptionally creative also require specialized education. How are services to these students educationally managed? The answer lies in two important civil rights laws, both of which have significant educational implications.

**Section 504 of the Rehabilitation Act of 1973** is particularly relevant for schools. The act was passed during the civil rights movement of the 1960s and 1970s. It established the federal grant programs for vocational rehabilitation, supported employment, independent living, and client services. Section 504 is also relevant for schools because it provides protection for children and adults from discrimination based solely on a disability. The law applies to any program or activity (both public and private) receiving federal financial assistance. Since most public and private schools receive some sort of federal funding, Section 504 applies in many areas where the IDEA legislation does not. For example, a student who is HIV positive may manifest with many physical and cognitive issues. Such communicable diseases are not covered under the IDEA legislation (See Chapter 10 for a more detailed discussion of what disabilities are covered under IDEA) but would be covered by Section 504 if it excluded the student from participation in schools or otherwise limited their ability to benefit from educational institutions.

**Section 504 of the Rehabilitation Act of 1973**

Law that established federal grant programs for vocational rehabilitation, supported employment, independent living, and client services

**Interconnections**

See Chapter 10 for a complete discussion of the IDEA legislation.

**Section 504 of the Vocational Rehabilitation Act of 1973**

No otherwise qualified individual with a disability . . . shall solely by reason of her or his disability be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance (29 U.S.C.A. § 794).

## 11.1b Americans with Disabilities Act (ADA)

Another educationally relevant law is the Americans with Disabilities Act of 1990 (ADA). The ADA legislation is another civil rights law. The primary difference between ADA and Section 504 (discussed above) is how broadly the law applies. Section 504 applies to programs or activities receiving federal funding. ADA applies to business, other public and private institutions, and their access for people with disabilities. Since the ADA legislation is not limited to federally funded institutions, this means it has even broader application. The only entities excluded from ADA are churches and private clubs.

In terms of schools, ADA makes few direct references to the education of students with disabilities (Latham & Latham, 2011). This means that to interpret ADA as it applies to schools, the Office of Civil Rights (OCR) uses the standards under Section 504. In fact, the definition for who is protected and the procedural safeguards of ADA are the same as Section 504. OCR treats each alleged violation of Section 504 as a violation of ADA because the same standards apply to both laws. This means that teachers should consider the education of students under Section 504 as also guided by ADA. To help clarify these laws and how they apply, let's look at how Section 504 compares to ADA and how these two laws differ from the IDEA legislation.

## 11.1c Comparing Section 504, ADA, and IDEA

Before we compare Section 504 and ADA, it is important to underscore how *both* laws are different from IDEA. Section 504 and ADA differ from IDEA in two important ways:

1. The way a disability is defined
2. The approach determining eligibility for services

### Defining Disability

IDEA uses a categorical approach to defining disability for most students. Children ages two through nine (varies by state) can receive services using the noncategorical development delay provision in the law. This means students must qualify as meeting the definition of one of thirteen disability categories (see Chapter 10). Without satisfactorily meeting the criteria for one or more of these categories, a student does not qualify for special education services. Section 504 and ADA use a noncategorical approach to defining a disability. These laws extend protections to any person who has a mental or physical impairment interfering with major life functioning, who has a record of such impairment, and/or who is regarded as having such impairment. The concept of major life functioning is somewhat vague, but typically refers to speaking, learning, walking, seeing and other activities common to everyday functioning. What this means is that Section 504 and ADA are much broader than the IDEA legislation. Many students, who fail to meet criteria for a disability under IDEA may qualify for services under Section 504 and ADA.

### Example of Students Receiving Services under Section 504/ADA

- Students with communicable diseases (e.g., hepatitis, HIV, etc.)
- Students needing temporary services due to injury or illness
- Students with allergies or asthma
- Students with substance abuse problems (may not be actively using)
- Students with attention-deficit/hyperactivity disorder
- Students with learning disabilities who do not manifest a significant discrepancy between intellectual ability and achievement
- Students who are considered socially maladjusted
- Students who are transitioned out of special education
- Students with environmental sensitivities or reactivity
- Students beyond typical school age (e.g., over twenty-two—depending on state); parents with disabilities

Source: Modified from Martin, R. (1992). *Continuing challenges in special educational law*. Carle Media.

## Eligibility Protection under IDEA, Section 504, and ADA

The difference in how disability is defined leads to a different focus when determining eligibility. The way IDEA is written, eligibility is based on meeting a disability definition. Section 504 and ADA not only define disability differently, but their approach also means eligibility is based on a comparison to other children considered typical in their development. In other words, IDEA is a comparison to a definition; Section 504 and ADA use a comparison to average performance for a student of that age. Again, this typically leads to many more children qualifying for services under Section 504 and ADA.

## Section 504 and ADA: Primary Goals

Now that we have some appreciation of how Section 504 and ADA differ from IDEA, let's take a closer look at how these very similar legislative acts compare. Section 504 and ADA have three primary goals:

1. Nondiscrimination
2. Free and Appropriate Public Education (FAPE)
3. Procedural Safeguards

The nondiscrimination goal is to protect students from discriminatory practices based on their disability in all institutions, including education. This does not mean that students who meet criteria for a disability according to Section 504 and ADA criteria are entitled to all the same services and educational opportunities as nondisabled students. This is because in addition to a disability, some students have other issues limiting their participation in educational activities. It is only discrimination if a student is not permitted to participate in an activity for which he/she is otherwise qualified. We will elaborate on this issue in the next section on evaluation.

The mandate for a **free and appropriate public education (FAPE)** is a minimally defined construct. Essentially, students with and without disabilities are entitled to services necessary to ensure an appropriate educational experience. This may include regular education, special education, supplementary aids, and other related services outside the general education setting (Jacob-Timm & Hartshorne, 1994).

**Free and Appropriate Education (FAPE)**

Refers to the right of children with disabilities to receive an education that is tailored to meet their unique needs at no cost to their parents. Individuals with Disabilities Education Act, 20 U.S.C. § 1400 et seq. (2004)

Like IDEA, Section 504 and ADA also provide process guidelines for determining eligibility (McBride et al., 2011). Students are entitled to a referral process, possible evaluation, program planning and implementation where appropriate, and reevaluation. These process guidelines help enforce the protections afforded students under Section 504 and ADA. Parents also have several safeguards to ensure that appropriate procedures are followed. The law mandates that local education agencies provide impartial hearings for parents who disagree with evaluation findings on placement decisions. Parents are entitled to participate in the hearing process. They also have the right to be represented by counsel.

In addition to the procedural guidelines in Section 504 and ADA, state or local agencies may develop further guidelines to govern due process. Often local agencies establish a process for documenting the student's intervention plan. Section 504 does not mandate that schools provide a written intervention plan; however, local schools often require such documentation. Some schools choose to use the same format for a written Section 504 plan used for an Individualized Education Program (IEP) (see Chapter 10 for a discussion of IEP). This provides comprehensive documentation of the plan but can also cause some confusion for teachers who may be unsure under which law the student is being served.

**Interconnections**

The Individualized Education Program (IEP) is discussed in detail in Chapter 10.

## Evaluation for Services under Section 504 and ADA

To achieve the primary goals of Section 504 and ADA, it is important to undertake a careful evaluation of every student referred for assistance. Consideration for services begins with a referral. Anyone can refer a student for evaluation for services under Section 504 or ADA. Most referrals come from the regular education teacher, often in consultation with the student's parents. Section 504 and ADA do not require parental consent for evaluation, but it is in the student's and the school's best interest to have full parental cooperation. Referrals can be for a variety of reasons. This list includes only a sample of the possible precipitating reasons for a referral and cannot possibly list all the unique reasons for seeking additional support for a student.

### Possible Reasons for Referring a Student for Evaluation for Section 504 or ADA Services

- When a student is either not evaluated for services under IDEA or is considered not eligible
- When a student is suspected of having a learning issue or a behavioral problem
- When a student's behavior has warranted expulsion or suspension
- When a student has a chronic or acute health problem
- When a parent or teacher requests an evaluation

The evaluation and placement procedures are similar to IDEA. Section 504 requires that schools gather information from a variety of sources and that a group of individuals knowledgeable about the student consider the information. Students should be educated with their nondisabled peers as much as possible. The law also requires periodic reevaluations to determine current functioning and appropriate supports (Jacob et al., 2011). Evaluations for services under Section 504 and ADA attempt to determine the answer to three important questions:

1. Does a physical or mental impairment exist?
2. Does the physical or mental impairment cause a limitation in major life functioning?
3. What are the accommodations that will ensure the student receives a free and appropriate public education (FAPE)?

**Otherwise qualified**

To be protected from discrimination under Section 504 and ADA, the student's disability must be the only barrier to his/her participation in the activity

In making these determinations, the evaluation team must examine two important standards. The first is whether the student is **otherwise qualified** to engage in the educational experience given the nature of his/her disability. This means that to be protected from discrimination under Section 504 and ADA, the student's disability must be the only barrier to their participation in the activity. If this is the case, then the school system is obligated to provide necessary accommodations and services to make sure the student has comparable access to the activity. The difficulty arises when there are multiple factors that limit a student's participation in a given activity. For example, a student may suffer from health-related impairments such that her motor skills are severely impaired, and her cognitive functioning is limited. The science teacher has a lesson plan on the reaction of two chemical agents under heat. The students are required to mix two chemical agents under a Bunsen burner and then

explain the resulting changes. The question for the teacher is, "Is it discrimination to not allow the student with the health problem described above to participate in the activity?" This is a classic example of the standard of *otherwise qualified*. If the student's only limitation to participating in the activity were her motor limitations, then the teacher would be required to provide appropriate accommodations for the student so she could actively participate in the lesson. The student would be considered *otherwise qualified* to benefit from the educational experience. Her additional difficulties with cognitive functioning, however, complicate the situation. Her cognitive issues may mean that she is not able to intellectually benefit from the science experiment, even if the teacher could accommodate her physical limitations. In this case, the student would not be considered *otherwise qualified* to participate in the lesson, and the teacher is not discriminating against the student by not allowing her to participate in the lesson. Of course, the hope is that the teacher will consider the current experiment in light of her overall curricular goals and provide the student with another experience that she can appreciate cognitively and possesses the necessary motor skills to perform.

The other important standard to consider is what exactly constitutes **substantial limitation** in life functioning. Recall that the definition of a disability under Section 504/ADA is that there is a substantial limitation in one or more major life activity. The professionals involved in the evaluation largely make the determination of whether a major life activity is impaired due to the disability. Professionals rely on their expertise, experience, and the duration and severity of the condition. Some researchers have attempted to quantify the process using rating scales (Smith & Patton, 1998) as depicted in Figure 11–1.

**Substantial limitation**

A limitation that is largely determined by the professionals involved in the evaluation for protection under Section 504/ADA

## Figure 11–1 Section 504 Eligibility Determination Form

**Nature of Mental or Physical Impairment:** _____

| Major Life Activity | School-Related Description of Impairment[1] | Source of Information[2] | Severity (mild 1 2 3 4 5 severe) | Duration (short-term 1 2 3 4 5 long-term) | Substantial Limitation?[3] |
|---|---|---|---|---|---|
| caring for oneself | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| performing manual tasks | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| walking | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| seeing | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| hearing | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| speaking | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| breathing | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| learning | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| working | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |
| other[4] | | | 1 2 3 4 5 | 1 2 3 4 5 | Yes No |

[1]description of educational-related behaviors associated with specific major life activities affected by mental or physical condition

[2]listing of persons and/or evaluation techniquest used for identifiying behaviors associated with impairment

[3]based on consideration of the nature, severity, and duration of the impairment

[4]other major life activites might include bending, stooping, reaching

Source: Adapted from Smith and Patton. (1998). *Section 504 and public schools: A practical guide* (p. 35). PRO–ED.


## Evaluation Data

The final point to consider when conducting an evaluation for Section 504/ADA is what services are needed to ensure free and appropriate education (FAPE). The student must receive an education comparable to that of nondisabled students. According to these laws, they are eligible for special programming and accommodations necessary to provide appropriate education. Such services may include speech/language services; counseling; and occupational and/or behavioral or physical therapy. They may also receive necessary modifications to the classroom environment and testing process. Some students may need the attention of an in-class aide or special technological assistance. The cost for this programming does not come from federal funds. Local school districts must provide these services from the school's regular education funds.

There are two additional points to consider regarding evaluation for Section 504 and ADA services. Like IDEA, schools need to provide services to students in their regular classroom environments to the maximum extent possible. This means it is inappropriate for schools to remove a student with a disability from the regular classroom if their disability can be sufficiently accommodated in the regular classroom. It is also important to realize that schools do not have to evaluate a student they believe to be ineligible for services. As mentioned before, there are due process protections for parents who disagree with school findings (Hartwig, 2000).

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Free and appropriate education (FAPE) requires that disabled students must receive a comparable education to nondisabled students. These services may include counseling.

## Educational Services under Section 504 and ADA

Services provided to students under Section 504 and ADA are not necessarily different from those provided students under IDEA. Often issues can be addressed through accommodations such as testing modification, seating preference, homework modification, note takers, and modified attendance policies. These accommodations have the added benefit that they incur little or no additional financial cost to the school system. As previously mentioned, this is important because schools must fund these accommodations with their regular education budget.

**Reasonable accommodation**

Means that schools have considerable discretion regarding student services that they provide

The basic standard applied to any accommodations and services is that they are **reasonable accommodations** and provide FAPE. This means that schools have considerable discretion regarding student services. In addition to looking to a standard of reasonable accommodation, schools also look to the educational experience of the student's peers. Section 504 and ADA are designed to provide *comparable* services, including education. In other words, schools must provide equal opportunity to get the same educational benefit (Jacob-Timm & Hartshorne, 1994) as a nondisabled peer.

## *Summarize and Reflect*

1. The first part of the chapter focused on legislative aspects of providing services to students outside of the Individuals with Disabilities Education Act (IDEA) legislation.
2. Two important civil rights laws were reviewed. First, students frequently seek services under Section 504 of the Vocational Rehabilitation Act of 1973. Second, the Americans with Disabilities Act (ADA) also affects educational settings and applies to a wider range of situations.

3. The last part of this section took a comparative approach, looking at similarities and differences between Section 504, ADA, and the Individuals with Disabilities Education Act (IDEA).
4. Each of these laws defines *disability* and determines eligibility for services in a unique way.

### Informed Application

1. Develop an example of a teacher trying to determine her role in helping a student who is behaviorally impulsive and has a chronic health condition that interferes with the student's ability to benefit from the teacher's curricular plan. Explain what the teacher needs to consider relative to the laws presented in this section.
2. Describe two different options for how a teacher can meet the provision under Section 504/ADA that the student must have a substantial limitation in one or more major life activities.

# 11.2 Special Needs: Attention-Deficit/Hyperactivity Disorder and Giftedness and Creativity

Numerous students require special educational assistance, but do not receive this assistance under special education. As listed earlier in this chapter (see the *Evaluation for Services under Section 504 and ADA* section), there are a variety of conditions that are often served under Section 504 or ADA. In this section, we are going to focus on two of the most common of these situations.

## 11.2a Attention-Deficit/Hyperactivity Disorder

**Attention-deficit/hyperactivity disorder (ADHD)**
The most commonly diagnosed disorder of childhood, characterized by some combination of inattention, impulsivity, or hyperactivity

There is probably no other disorder receiving more media coverage than **attention-deficit/hyperactivity disorder (ADHD)**. It is the most commonly diagnosed disorder of childhood and is having a significant impact on education (Shaywitz et al., 1994; Shelton & Barkley, 1994; Tannock & Schachar, 1997). ADHD is defined as a behavioral issue characterized by one or more of the following symptoms: inattention, impulsivity, and hyperactivity. The Centers for Disease Control and Prevention's National Survey of Children's Health found that 9.8 percent of school-age children ages three to seventeen suffered from ADHD in 2016–2019 (National Center on Birth Defects and Developmental Disabilities, 2023). This means that approximately six million children have significant problems with impulsive behavior, hyperactivity, or difficulty directing attention. This is an enormous population and one that is not directly served by the special education system. For example, as we learned in the last section, there is no disability category for ADHD under IDEA.


(Adobe Stock)

Approximately six million children have significant problems with impulsive behavior, hyperactivity, or difficulty directing attention.

In this section, we will learn about the characteristics of ADHD and review how students receive needed educational services. We will explore contemporary theories about the origins of ADHD. We will also look closely at how we diagnose and treat this condition. Let's begin with a review of what exactly ADHD is.

## ADHD Identification and Controversies

One of the major controversies surrounding ADHD is whether it really exists. In 2002, an international conference on ADHD was held to develop a science-based consensus statement addressing conflicting media and scientific reports. This consensus paper reports that the U.S. Surgeon General, the American Medical Association, the American Psychiatric Association, the American Academy of Child and Adolescent Psychiatry, the American Psychological Association, and the American Academy of Pediatrics—all recognize ADHD as a valid disorder.

Not all scientists agree, however, that ADHD is indeed distinct. In a critique of the International Consensus Statement on ADHD, Sami Timimi (2004) cited several reasons why the existence of ADHD is still a valid debate. He notes that the very definition of ADHD changes with such frequency that it calls into question the validity of a single distinct syndrome. He also notes that variation in prevalence rates is so large that, again, it makes it difficult to see ADHD as a single unique disorder. Other researchers emphasize that ADHD might be "created" by our media style, which increasingly is geared toward immediate gratification, requiring little sustained attention (Hallowell & Ratey, 1995). Still others see ADHD as a continuum of function, as opposed to the more frequently used categorical view of the disorder, where some individuals experience a severity of symptoms so great as to necessitate intervention (McLennan, 2016). The threshold for needing services is unclear and in need of additional research.

Despite suggestions that ADHD is not a distinct disorder, it is still widely recognized and addressed in educational settings. Schools typically recognize a medical approach to the diagnosis of ADHD. This means schools rely on the diagnosis of a medical professional for identification of ADHD. The standard diagnostic reference for identifying ADHD is the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (*DSM*-5) (2013). This publication is produced by the American Psychiatric Association and is a compilation of diagnostic criteria and information on a wide range of disorders. The *DSM*-5 criteria and symptoms for ADHD are summarized in Table 11–1.

Attention-deficit/hyperactivity disorder is discussed using a variety of terms and abbreviations. Most of these variations are derived from older versions of the *DSM*. In general, the terms ADD, ADHD, AD/HD, attention-deficit disorder, and attention-deficit/hyperactivity disorder all refer to the same disorder. Strictly following the *DSM*-5, the diagnosis is properly cited as attention-deficit/hyperactivity disorder and is abbreviated ADHD.

The three cardinal symptoms of ADHD are inattention, impulsivity, and hyperactivity. As you can see from Table 11–1, students experiencing inattention have difficulty with tasks requiring sustained attention. They are often distractable and characterized as daydreamers. Impulsivity describes problems students have regulating their behavior. They often speak out of turn and have trouble taking turns. These behaviors frequently translate into social problems. Hyperactivity often results in difficulty sitting quietly in their seat. They may also demonstrate an atypical need to run and climb and may talk excessively.

Research indicates that individuals express these symptoms differently. Some students have a great deal of difficulty with sustained attention and staying on task. Others may be constantly on the go and impulsive, but able to pay attention. Still others have a combination of these symptoms. To address these variations, the *DSM*-5 provides different diagnostic codes for the following variations in the expression of ADHD symptomology. Items refer to ADHD criteria listed in Table 11–1.

- Attention-Deficit/Hyperactivity Disorder, Combined Presentation: if both Criteria A1 and A2 are met for the past six months
- Attention-Deficit/Hyperactivity Disorder, Predominantly Inattentive Presentation: if Criterion A1 is met but Criterion A2 is not met for the past six months
- Attention-Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Presentation: if Criterion A2 is met but Criterion A1 is not met for the past six months

## Table 11–1 Diagnostic Criteria for Attention-Deficit/Hyperactivity Disorder

Per *DSM-5*, attention-deficit/hyperactivity disorder is characterized by inattention and/or hyperactivity-impulsivity as defined below. Symptoms of either inattention or hyperactivity-impulsivity or both must persist for at least six months and are inconsistent with the person's development level to the degree that they negatively impact social and academic/occupational activities. In children, six or more of these symptoms must be present. In youth age seventeen or older and adults, at least five must be present. Symptoms must occur often, not just occasionally, and must not be solely caused by a defiant or hostile attitude, oppositional behavior, or misunderstanding of tasks or instructions.

Criteria are classified as follows:

A) A persistent pattern of inattention (Criteria A1) and/or hyperactivity-impulsivity (Criteria A2) that interferes with functioning or development.

| Criteria | Symptoms |
|---|---|
| Inattention<br>(Criteria A1) | ▸ Overlooking or missing details or making careless mistakes in schoolwork, at work, or when engaging in other activities.<br>▸ Frequent difficulty staying focused when at work or play.<br>▸ Attention seems to wander during direct conversations, even when distractions are lacking.<br>▸ Frequent failure to follow through on instructions or easily sidetracked from schoolwork, work duties, or chores.<br>▸ Difficulty organizing tasks and activities; e.g., unable to manage sequential tasks, keep belongings in order, organize workspace, manage time, meet deadlines.<br>▸ Avoidance, dislike, or reluctance to engage in tasks, such as homework or preparing reports, that require sustained mental effort.<br>▸ Commonly loses items needed to accomplish tasks or activities (e.g., papers, books, pencils, keys, eyeglasses, cellphone).<br>▸ Easily distracted by extraneous stimuli; in older adolescents and adults, these distractions may be unrelated thoughts.<br>▸ Forgetful when doing daily activities such as chores or errands; in older adolescents and adults, this may encompass paying bills, keeping appointments, or returning calls. |
| Hyperactivity and Impulsivity<br>(Criteria A2) | ▸ Fidgeting with hands or feet or squirming while seated.<br>▸ Rising during a seated activity instead of remaining seated (as is expected).<br>▸ Running around or climbing at inappropriate times (in adolescents and adults, this may manifest as restlessness).<br>▸ Difficulty quietly playing or engaging in leisure activities.<br>▸ Uncomfortable being still for extended period of time; always seems "on the go" or "driven by a motor," making it difficult for others to keep up with.<br>▸ Talking excessively.<br>▸ Often blurts out answers, even before a question has been completed.<br>▸ Uncomfortable waiting in line or waiting to take their turn.<br>▸ Interrupts or intrudes on activities such as conversations or games, uses other's things without requesting or receiving permission; in older adolescents and adults, this may include intruding in on or even taking over someone else's task. |

B) Some impairment-causing hyperactive-impulsive or inattentive symptoms were present before age twelve.

C) Multiple inattentive or hyperactive-impulsive symptoms are present in two or more settings, (e.g., at home, school, work, or other activities, or when with family, relatives, or friends).

D) The symptoms clearly interfere with or reduce functioning in academic, social, or occupational settings.

E) Symptoms are not present during schizophrenic or psychotic disorder or explainable by another mental disorder such as anxiety, dissociative personality, mood disorder, or intoxication.

This means the *DSM*-5 recognizes symptoms that are primarily inattentive, hyperactive-impulsive, or both. The *DSM*-5 does not separate hyperactive and impulsive symptoms because of the significant overlap in the number of children experiencing both symptoms.

In addition to determining the nature of the symptoms, there are other important factors to consider when making a diagnosis of ADHD. The diagnostic criteria specify that symptoms must be present before age twelve. This helps the diagnostician separate children who have a long-standing problem from those whose symptoms may be a reaction to a current life event. The diagnostic criteria also specify that symptoms must be demonstrated in more than one setting. If symptoms were only present in one setting, then, again, they may indicate a specific reaction problem, rather than an enduring problem. Additionally, the problems must be causing significant social, academic, or occupational dysfunction. This is a typical qualifier for disorders listed in the *DSM*-5 and follows the idea that a disorder must have some negative consequences for the individual to warrant a clinical diagnosis.

The diagnostic criteria provided by the *DSM*-5 are only the beginning of the evaluative process (Martin & Zirkel, 2011). They help the clinician distinguish symptoms of ADHD from other disorders and provide a common reference point, but this is far from the complete assessment needed to provide a foundation for an educational intervention. We will turn to additional methods for evaluating a student suspected of having ADHD shortly, but first let's take a closer look at theories explaining what causes ADHD.

## Causes of ADHD

There are many theories why some children experience ADHD. Some theories focus on the genetics we inherit from our parents. Other theories emphasize the unique brain functioning of the child with ADHD. To date, no single theory can fully explain why a child experiences ADHD symptoms. As this text consistently emphasizes, every student is a unique individual and finding a single explanatory structure for a given educational or personal issue is not likely. Teachers, however, can familiarize themselves with the available evidence and the theories that guide research. In a real way, these theories help us talk to our students and their families in a research-grounded way about the problems they are experiencing. We may not be able to provide exact answers, but we can help students and their families understand and appreciate the range of relevant factors impacting their difficulties.

The first theoretical approach to ADHD we will examine is heritability or linking the expression of ADHD to the genetics we inherit from our parents. There are several lines of research pointing to a strong genetic component to ADHD. Research on parents and their children have found that a child with ADHD is two to eight times more likely to have a parent with ADHD (Faraone & Doyle, 2001). Additionally, research on first-degree relatives has shown that there is an 18 percent chance of a biological parent having ADHD if their child has ADHD. This is compared to only a 6 percent chance if the child with ADHD was adopted. Biological parents of children without ADHD had only a 3 percent chance of having ADHD themselves (Sprich et al., 2000).

Another type of research supporting the heritability theory of ADHD is twin research (Greven et al., 2011). A common approach is for researchers to look at identical twins, who have the same genetics, and fraternal twins who only share 50 percent of their genes. If ADHD is more likely in identical twins (called a concordance rate) compared to a fraternal twin pair, then this suggests a genetic explanation for ADHD. Numerous researchers have found higher ADHD concordance rates in identical twins (Crosbie et al., 2013; Faraone et al., 2005; Sherman et al., 1997; Smalley et al., 2000; Thapar et al., 1999; Thapar et al., 2000). Studies vary in exact concordance rates, but rates for identical twins generally range from 60 percent to 80 percent compared to 20 percent to 30 percent for fraternal twins. This evidence, coupled with the work on relatives and adoptees, provides strong evidence for the heritability theory of ADHD.

Another theoretical approach to understanding the causes of ADHD is to associate their behavioral problems with evidence of biological or neurological differences. Research over the last twenty years has emphasized the importance of certain brain structures involved in ADHD (Barkley, 1998; Castellanos & Swanson, 2002; Castellanos et al., 2000; Castellanos, et al., 2001). The most reported differences are in areas of the frontal lobes and a set of deep brain structures called the basal ganglia. The frontal lobes are involved in several aspects of self-regulation, and the basal ganglia are known to influence motor behavior. Other brain-related differences involve brain chemistry. Researchers have found that children with ADHD have lower levels of a brain chemical called dopamine (a neurotransmitter discussed in Chapter 2). Findings indicate lower levels of dopamine in the frontal lobes and basal ganglia (Castellanos, 1997; Gupta, 2000). In addition to anatomical and chemical differences, researchers have also found differences in brain electrical activity (Jarrett et al., 2020; Swartwood et al., 2003). In other research, one of the most consistent findings in ADHD research is the difference in brain structure. Studies have shown that individuals with ADHD tend to have a smaller overall brain volume compared to those without the disorder. Specific regions, such as the prefrontal cortex, basal ganglia, and cerebellum, have been found to be reduced in size. The prefrontal cortex, responsible for executive functions like decision-making and impulse control, may contribute to the impulsivity and inattention observed in ADHD patients (Hoogman et al., 2017). Functional MRI (fMRI) studies have also revealed differences in brain activity in individuals with ADHD. There is reduced activity in the prefrontal cortex during tasks that require attention and impulse control. Additionally, there's increased activity in the default mode network (DMN), a network active during rest and associated with mind-wandering. This heightened DMN activity might explain the distractibility characteristic of ADHD (Castellanos & Proal, 2012). Finally, studies have explored the connectivity between different brain regions in individuals with ADHD. There is evidence of altered connectivity, especially between the prefrontal cortex and other brain regions. This disrupted connectivity might contribute to the difficulties in attention regulation and impulse control observed in ADHD (Fassbender et al., 2009).

(Adobe Stock)

The prefrontal cortex may contribute to the impulsivity and inattention observed in ADHD patients.

A third theoretical approach to understanding ADHD is to use a construct known as executive functioning (Di Trani et al., 2011). **Executive functioning** refers to a collection of skills involved in self-regulation, planning, internalization of speech, perception of time, and some aspects of working memory. The executive functioning perspective fits well with the available biological and neurological evidence because executive functions are known to have a biological foundation in the frontal lobes (Stuss & Knight, 2002). One of the most notable of the executive functions is self-regulation. Children with ADHD often have difficulty with monitoring and managing their own behavior. This has obvious implications for school since students are increasingly taught self-reliance. Another important executive function is the ability to plan for future activities. We all have difficulty making sure we have the materials we need for a future task, but children with ADHD have problems beyond what is expected for their age. Teachers are likely to spend considerable time helping children with ADHD organize their day so that they have necessary materials. This is related to another executive function, internalization of speech. Talking to ourselves as we progress through our day helps us monitor our current actions and evaluate future needs. Impairment in this function will make it even more difficult to effectively plan. This can also lead to an unusual perception of the flow of time. Children with ADHD often report that time moves too slowly. They have trouble waiting and allocating time effectively to tasks. This leads to frustration and difficulty with task performance.

**Executive functioning**

A collection of skills involved in self-regulation, planning for the future, internalization of speech, perception of time, and some aspects of working memory

A final point to consider is a potential problem with working memory. Information flowing to and from working memory (discussed in Chapter 5) involves crucial executive functioning. To effectively manage our day, we need to be able to efficiently retrieve memories and integrate those memories into events of our immediate world. When the teacher asks us to turn in our homework, we need to recall the location of our homework plus recall the process for getting it to the teacher. Additionally, these memories must be reconciled with what is happening in the classroom at that moment. Perhaps you are in the middle of a conversation with a friend or working on another assignment. How will you deal with this existing task and the new need to turn in your homework? This juggling of information in your working memory is challenging for all of us, but children with ADHD have more difficulty with this important executive function.

**Interconnections**

Working memory as part of the information processing model is reviewed in Chapter 5.

## Assessment

The process for obtaining an initial diagnosis of ADHD is highly variable. Historically, identification may have been as simple as walking into your doctor's office, answering a few questions, and perhaps filling out a simple rating scale of your child's behavior. Concerns about over-diagnosis and inconsistent diagnoses have led to more systematic approaches to assessment. The American Academy of Pediatrics (AAP) attempted to create a more consistent and holistic approach to diagnosis by publishing evaluation guidelines (2019). These guidelines (see Table 11–2) incorporate the *DSM*-5 criteria described earlier and information from other sources such as schools. These guidelines are a positive step forward in the evaluation of ADHD. They encourage practitioners to consider multiple sources of information, creating a more comprehensive diagnostic approach. Still, many school systems find the guidelines fail to provide enough detail to produce the highest quality evaluation.

### Table 11–2 Summary of the American Academy of Pediatrics Key Action Statements (KASs) for Diagnosing, Evaluating, and Treating ADHD in Children and Adolescents

Scientific evidence determined to be at least "good" in quality and which had demonstrated benefits over harms, received a "strong recommendation" or "recommendation." This is the approach clinicians should follow unless there is a "clear and compelling rationale" for an alternative approach. An "option" level is recommended for data that is lower quality or limited and has expert consensus, or for high-quality evidence with a balance of benefits and harms. Evidence levels were then assigned grades from a high of "A" to the lowest grade of "D." Those shown in the table include:

- Grade A, derived from consistent level A studies.
- Grade B, derived from consistent level B or extrapolations from level A studies.
- Grade C, derived from level C studies or extrapolations from level B or level C studies.

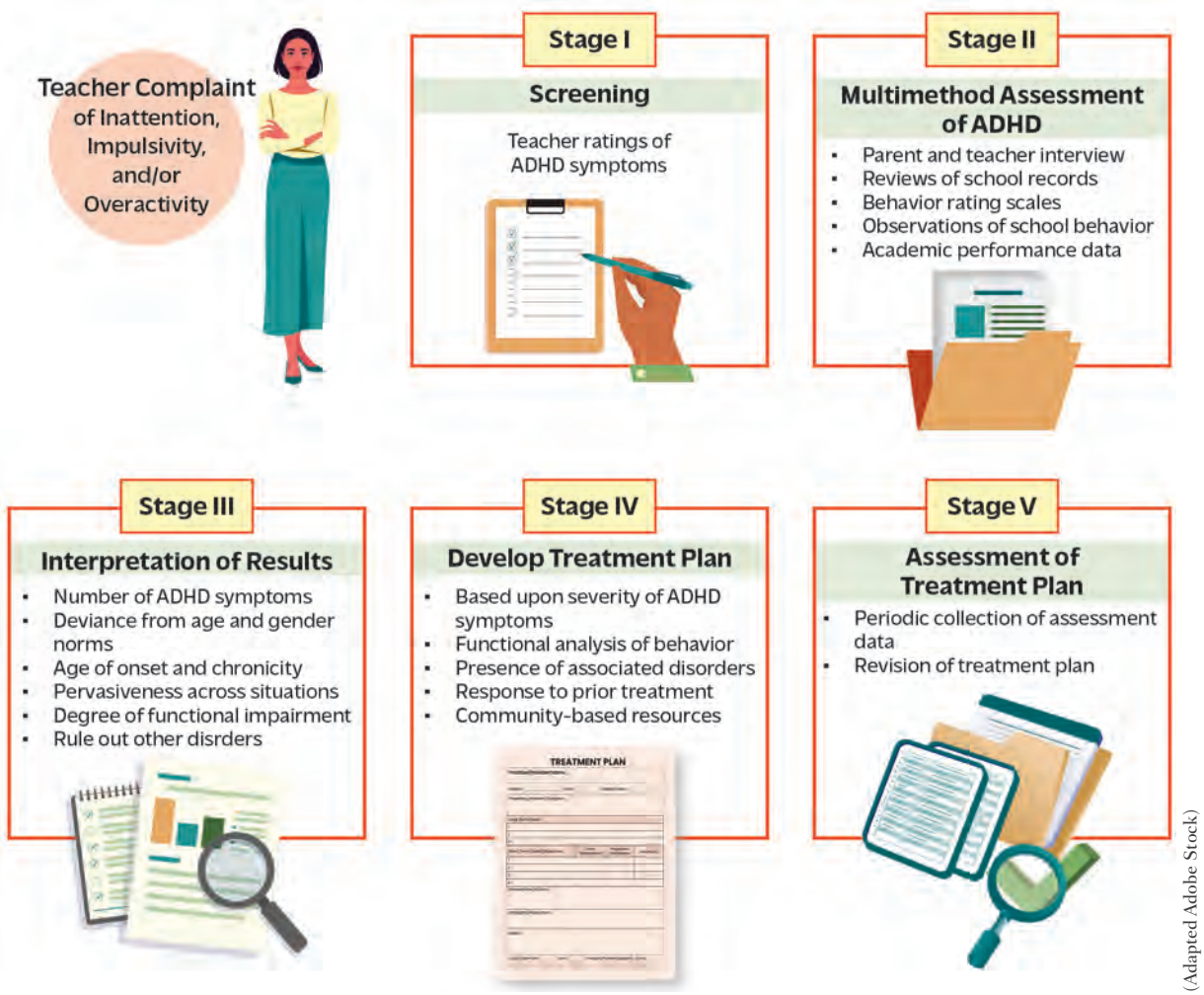
| KAS # | Summarized Key Action Statements (KASs) | Evidence Quality | Strength of Recommendation |
|---|---|---|---|
| KAS 1 | Any child age four to eighteenth birthday who presents with academic or behavioral problems and symptoms of inattention, hyperactivity, or impulsivity should be evaluated for ADHD. This evaluation should be initiated by a pediatrician or Primary Care Clinician (PCC). | Grade B | Strong recommendation |

| KAS # | Summarized Key Action Statements (KASs) | Evidence Quality | Strength of Recommendation |
|---|---|---|---|
| KAS 2 | A diagnosis of ADHD hinges on the determination by the PCC that *DSM-5* criteria have been met. Symptoms and impairment must be documented by parents/guardians, teachers/school personnel, and any mental health clinicians involved in providing care, in more than one setting. Alternative causes should be ruled out. | Grade B | Strong recommendation |
| KAS 3 | The evaluation for ADHD should include a process to screen for emotional, behavioral, developmental, or physical comorbid conditions, including emotional or behavioral conditions. | Grade B | Strong recommendation |
| KAS 4 | The principles of the chronic care model and medical home should be followed when managing ADHD patients, the same as with special health care needs youth. | Grade B | Strong recommendation |
| KAS 5a | Available evidence-based Parent Training in Behavioral Management (PTBM) and/or behavioral classroom interventions should be prescribed as first-line treatment for children age four to sixth birthday.<br>If improvements are not seen through behavioral interventions, and the four- through five-year-old has moderate-to-severe continued disturbance in functioning, methylphenidate may be considered; the risks of starting the medication before age six must be weighed against the harm of delaying treatment. | Grade A<br>Grade B | Strong recommendation<br>Strong recommendation |
| KAS 5b | The PCC should prescribe FDA-approved medications for adolescents age six to the twelfth birthday, PTBM and/or behavioral classroom intervention should also be prescribed (preferably both).<br>Other treatments include educational interventions and individualized instructional supports in the school environment, class and instructional placement, and behavioral supports. These often include an individualized education program (IEP) or rehabilitation plan (504 plan). | Grade A<br>Grade A | Strong recommendation<br>Strong recommendation (for training and behavioral treatments with family and school) |
| KAS 5c | The PCC should prescribe FDA-approved medications for adolescents age twelve to the eighteenth birthday, with their assent. Available evidence-based training interventions and/or behavioral interventions should also be prescribed.<br>Other treatments include educational interventions and individualized instructional supports in the school environment, class and instructional placement, and behavioral supports. These often include an individualized education program (IEP) or rehabilitation plan (504 plan). | Grade A<br>Grade A | Strong recommendation<br>Strong recommendation (for training and behavioral treatments with family and school) |
| KAS 6 | Doses of medication should be modified (titrated) by the PCC to achieve maximum benefit with tolerable side effects. | Grade B | Strong recommendation |
| KAS 7 | PCCs trained or experienced in diagnosing comorbid conditions, may initiate treatment for them or make a referral to a subspecialist; PCCs not trained or experienced in diagnosing or initiating treatment should refer the patient to a subspecialist. | Grade C | Recommendation |

Adapted from The American Academy of Pediatrics, *Clinical Practice Guideline for the Diagnosis, Evaluation, and treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents* (2019).

Other assessment approaches have been developed to help meet the need for a more specific evaluative process. In their book on ADHD in the schools, DuPaul and Stoner (2003) provide an extensive chapter on their stage approach to the evaluation of ADHD. Figure 11–2 provides an overview of the process. The model provides a comprehensive, school-based approach to the assessment, evaluation, and treatment of ADHD. This is a trend in school systems where deliberate attempts are being made to ground ADHD evaluations in the schools, rather than relying exclusively on medical professionals for diagnostic information. The model has multiple stages designed to build a solid diagnostic foundation from which effective intervention can evolve.

**Figure 11–2 Stage Approach to the Evaluation of ADHD**




(Adapted Adobe Stock)

**Behavior rating scale**

One of the most common tools that professionals use to assess/rate behavioral disturbances

A significant part of any evaluation for ADHD is the assessment tools used to gather information on the child's functioning. **Behavior rating scales** are one of the most common tools professionals use to assess ADHD. Many types of rating scales are available and most follow a similar format. The respondent is asked to read questions about the individual's behavior and provide a rating as to how much of the behavior is exhibited. For example, a question might ask, "Does your child have difficulty sustaining attention compared to classmates?" The respondent might answer by circling one of the following options: never, sometimes, often, very often, or always. Using this approach, evaluators can quickly gather information across many

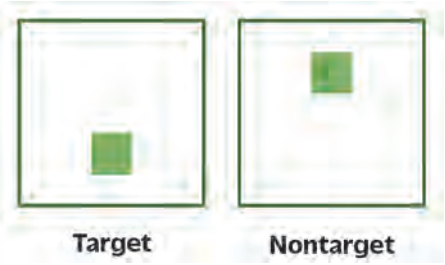
areas of functioning. Behavioral rating forms come in many editions. Some are designed for the child's teacher, the parent, or even the child to fill out. Each rating provides a different perspective on the student's problems. Commonly used scales include the Revised Conner's Teacher's Rating Scale and the ADHD Rating Scale–IV. Some professionals elect to use behavior-rating scales that measure multiple behaviors in addition to attention, impulsivity, and hyperactivity. For example, the Behavior Assessment System for Children–Third Edition (BASC–3) also measures behaviors like aggression, anxiety, and depression. Like other scales, the BASC–3 comes in teacher, parent, and student forms.

Another type of assessment tool used in the assessment of ADHD is the continuous performance test. The **continuous performance test (CPT)** is a test designed to measure an individual's ability to sustain attention. Some of these tests are auditory, but most are visual. Some come in self-contained kits, and others come as software that can run on most computers. One test, the Test of Variables of Attention 9 (T.O.V.A.), uses a simple computer display that only presents two symbols (see Figure 11–3). The student is to press a button when the target symbol is shown and refrain from pressing the button when the nontarget is displayed. The test is twenty-two minutes long and requires no reading skills. Although the task appears simple, the length of the test sufficiently challenges the student so that individuals with attentional difficulties perform differently from individuals without attentional issues. Other CPTs commonly used in educational evaluations are the Gordon Diagnostic System and the Conner's 4.

**Continuous performance test (CPT)**

A test designed to measure an individual's ability to sustain attention

**Figure 11–3 Test of Variables of Attention (T.O.V.A.)**




Adapted from the T.O.V.A Professional Manual.

## Medication

One of the most common treatment approaches to ADHD is stimulant medication. On the surface, this may seem like a poor choice on many levels:

- *If children with ADHD have issues with hyperactivity, why give them a stimulant?*
- *Is it safe to regularly give your child a prescription medication for ADHD?*
- *Will a stimulant medication produce better learning outcomes?*

The rationale behind providing stimulants for students with ADHD is like the reason many adults drink coffee in the morning. Coffee contains caffeine, which is also a stimulant. Ask yourself: When I drink coffee in the morning, do I become hyperactive? The answer will depend on how much coffee you drink. Stimulants have an interesting dose response curve. That is, we behave differently with different doses of a stimulant. If a small dose is taken, we see individuals increase their attention span and decrease their motor restlessness, settling into the day. This is the reason most people drink coffee in the morning. However, sometimes we drink too much coffee, and then we experience behavioral symptoms for which


**Mike Depaula**

"I thought that only students with ADHD would respond to Ritalin by paying attention more. That this kind of response diagnosed them as ADHD."

**Professor Denault**

"This is a common misconception regarding ADHD. Individuals without ADHD respond to stimulants in the same way as individuals with ADHD. Again, with low dose stimulants, everyone will increase their ability to direct their attention."

the drug class was named—*stimulant*. At a moderate dose of a stimulant, we indeed look "stimulated." Our motor activity increases, and we have difficulty staying on task. The same dose response principles that apply to the caffeine in our coffee apply to the stimulant medications we provide students with ADHD. When low dose stimulants are given to individuals with ADHD, we see a decrease in motor behavior and an increase in on-task behavior.

Prescribing stimulant medication is not without concerns. Some of the problems are that there is no clear way to predict how much to give to a person. The patients response to the medication has no reliable biological predictors (like weight), so doctors have to guess at the starting dose and then modify the dose as needed (called titrating) until the desired effect is achieved (Powell et al., 2011). Side effects are another issue: Some people experience insomnia, weight loss, nausea, and irritability (especially as the mediation wears off). Research shows that most prescribed stimulants for ADHD are safe and effective when taken as prescribed (Pancheri & Prater, 1999). This does not mean, however, that stimulant medication should always be used to treat ADHD. Some of the most common stimulant medications used for ADHD are presented in Figure 11–4. It should be noted that there are also several nonstimulant medications and antidepressants that are prescribed for ADHD.

Although stimulants help address the behavioral symptoms of ADHD, there is no clear evidence showing improvements in learning (Pelham et al., 2022). This is a critical point and should be carefully considered before a child is placed on a stimulant medication. The medicine is a moderator of behavior. It is not a drug than can produce a greater ability to study effectively, improve test grades, or socialize more effectively. There is a difference between spending more time quietly looking at your math worksheet and actually learning math. Teachers and parents are often so impressed by the improvement in behavior that they fail to recognize there are still many other issues to address. The bottom line is that stimulant medication is potentially a useful tool in the behavior management of students with ADHD. It should, however, never be seen as a solution or used without a thorough evaluation of the student's problems and concerns.

**Figure 11–4 Stimulant Medications Used to Treat ADHD**

Short-Acting Stimulants

| Type | Brand Name | Duration |
|---|---|---|
| Dextroamphetamine | Dexedrine® | 4–6 hours |
| Dextroamphetamine | Zenzedi® | 3–4 hours |
| Dextroamphetamine and amphetamine | Adderall® | 4–6 hours |
| Dexmethylphenidate | Focalin® | 4–6 hours |
| Methylphenidate | Methylin®, Ritalin® | 3–4 hours |

Intermediate and Long-Acting Stimulants

| Type | Brand Name | Duration |
|---|---|---|
| Amphetamine sulfate | Dyanavel® | 8–12 hours |
| Amphetamine sulfate | Evekeo® | 6 hours |
| Dextroamphetamine | Dexedrine® Spansule® | 6–8 hours |
| Dextroamphetamine and levoamphetamine | Adderall XR® | 8–12 hours |
| Dextroamphetamine and amphetamine | Mydayis™ | 12 hours |
| Dexmethylphenidate | Focalin® XR | 6–10 hours |
| Lisdexamfetamine | Vyvanse® (and chewable) | 10–12 hours |
| Methylphenidate | Aptensio® XR, Concerta®, Cotempla XR-ODT®, Daytrana®, Metadate® CD, Ritalin LA®, Metadate® ER, Ritalin® SR, Quillichew® ER, Quillivant XR® | 8–13 hours, depending on brand |
| Serdexmethylphenidate/dexmethylphenidate | Azstarys | 13 hours |

## Education of Students with ADHD

(Adobe Stock)

Although stimulants help address the behavioral symptoms of ADHD, there is no clear evidence showing improvements in learning

To fully address the symptoms of ADHD, we need to look at a more comprehensive educational approach. There are many educational approaches to working with a student with ADHD. One of the most prominent of these approaches focuses on the student's behavior. Specifics vary, but a behavioral approach helps structure the student's environment so that reinforcements are given for desired behaviors. These behavioral approaches can be used in addition to or in place of medication. One study found that students who used a behavioral self-reinforcement program in addition to medication were able to complete more assignments than students taking medication alone (Ajibola & Clement, 1995). This is, however, still about behavior and not necessarily learning.

To improve academic performance, teachers need to turn to many of the instructional techniques discussed in the last chapter for students with special learning needs (DuPaul et al., 2011). In addition to providing special support (i.e., assistance with reading comprehension) for a learning issue, the student with ADHD also benefits from a curriculum that maximizes certain environmental features. Students with ADHD appear to rely more heavily on novel stimuli, feedback, variety, choices, activity, and challenging, relevant work (Turnbull et al., 2004). This means that you may have two students who need reading support, but if one also has ADHD, they may need services delivered in such a way that these qualities are emphasized.

**Self-regulation strategies**

Strategies that help students moderate their own behavior by having them periodically stop and "check" their behavior

It is also important to remember the diagnostic research on ADHD when programming educationally. Recall that students with ADHD often have difficulty with executive functions. This means that teachers should provide the necessary structure and support needed for the student to develop a greater sense of self-regulation. **Self-regulation strategies** help

students moderate their own behavior by having them periodically stop and "check" their behavior (Johnson & Johnson, 1999). Depending on their unique situation and skills, students are given strategies to check their behavior, whether they are on-task, their social appropriateness, etc. They are asked to record their actual behavior at these checkpoints and given strategies for improvement if they are having trouble. The student and the teacher develop goals or criterion behavior, so it is clear to the student when they are succeeding. This is an excellent approach for students with ADHD. It clearly addresses their difficulty with key executive function and gives them the supports to be successful.

Many teachers do not look at ADHD as a "problem." Rather, they see it as a different way of experiencing the world. Operating under this premise, teachers strive to find ways to modify their classrooms so students with ADHD are not penalized for their naturally high activity levels, externally driven attention span, or impulsive behavior. Attempting to accommodate some of the child's behavior using this approach demonstrates a greater appreciation of the unique qualities of the student and allows them greater freedom to function in a more natural way.

## Accommodations to Help Students with Attention-Deficit Disorders

**Harvey C. Parker, PhD, Clinical Psychologist**

Children and youth with attention deficit disorder (ADD) often have serious problems in school. Inattention, impulsiveness, hyperactivity, disorganization, and other difficulties can lead to unfinished assignments, careless errors, and behavior which is disruptive to oneself and others. Through the implementation of relatively simple and straightforward accommodations to the classroom environment or teaching style, teachers can adapt to the strengths and weaknesses of students with ADD. Small changes in how a teacher approaches the student with ADD or in what the teacher expects can turn a losing year into a winning one for the child.

Examples of accommodations that teachers can make to adapt to the needs of students with ADD are grouped below according to areas of difficulty.

### Inattention

- seat student in quiet area
- seat student near good role model
- seat student near "study buddy"
- increase distance between desks
- allow extra time to complete assigned work
- shorten assignments or work periods to coincide with span of attention; use timer
- break long assignments into smaller parts so student can see end to work
- assist student in setting short-term goals
- give assignments one at a time to avoid work overload
- require fewer correct responses for grade
- reduce amount of homework
- instruct student in self-monitoring using cueing
- pair written instructions with oral instructions
- provide peer assistance in note taking
- give clear, concise instructions
- seek to involve student in lesson presentation
- cue student to stay on task, i.e., private signal

### Academic Skills

- if reading is weak: provide additional reading time; use "previewing" strategies; select text with less on a page; shorten amount of required reading; avoid oral reading
- if oral expression is weak: accept all oral responses; substitute display for oral report; encourage student to talk about new ideas or experiences; pick topics easy for student to talk about

- if written language is weak: accept nonwritten forms for reports (i.e., displays, oral, projects); accept use of typewriter, word processor, tape recorder; do not assign large quantity of written work; test with multiple choice or fill-in questions
- if math is weak: allow use of calculator; use graph paper to space numbers; provide additional math time; provide immediate correctness feedback and instruction via modeling of the correct computational procedure

### Mood

- provide reassurance and encouragement
- compliment positive behavior and work product frequently
- speak softly in nonthreatening manner if student shows nervousness
- review instructions when giving new assignments to make sure student comprehends directions
- look for opportunities for student to display leadership role in class
- conference frequently with parents to learn about student's interests and achievements outside of school
- send positive notes home
- make time to talk alone with student
- encourage social interactions with classmates if student is withdrawn or excessively shy
- reinforce frequently when signs of frustration are noticed
- look for signs of stress build up and provide encouragement or reduced workload to alleviate pressure and avoid temper outburst
- spend more time talking to students who seem pent up or display anger easily
- provide brief training in anger control: encourage student to walk away; use calming strategies; tell nearby adult if getting angry

### Motor Activity

- allow student to stand at times while working
- provide opportunity for "seat breaks," i.e., run errands, etc.
- provide short break between assignments
- supervise closely during transition times
- remind student to check over work product if performance is rushed and careless
- give extra time to complete tasks (especially for students with slow motor tempo)

### Impulsiveness

- ignore minor, inappropriate behavior
- increase immediacy of rewards and consequences
- use time-out procedure for misbehavior
- supervise closely during transition times
- use "prudent" reprimands for misbehavior (i.e., avoid lecturing or criticism)
- attend to positive behavior with compliments, etc.
- acknowledge positive behavior of nearby students
- seat student near role model or near teacher
- set up behavior contract
- instruct student in self-monitoring of behavior, i.e., hand raising, calling out
- call on only when hand is raised in appropriate manner
- praise when hand raised to answer question

### Compliance

- praise compliant behavior
- provide immediate feedback
- ignore minor misbehavior
- use teacher attention to reinforce positive behavior
- use "prudent" reprimands for misbehavior (i.e., avoid lecturing or criticism)
- acknowledge positive behavior of nearby student
- supervise student closely during transition times
- seat student near teacher
- set up behavior contract
- implement classroom behavior management system
- instruct student in self-monitoring of behavior

*(continues)*

*(continued)*

**Organization and Planning**

- ask for parental help in encouraging organization
- provide organization rules
- encourage student to have notebook with dividers and folders for work
- provide student with homework assignment book
- supervise writing down of homework assignments
- send daily/weekly progress reports home
- check desk and notebook regularly for neatness; encourage neatness rather than penalize sloppiness (do not penalize for poor handwriting if visual-motor defects are present)
- allow student to have extra set of books at home
- give assignments one at a time
- assist student in setting short-term goals
- encourage learning of keyboarding skills
- allow student to tape record assignments or homework

**Socialization**

- praise appropriate behavior
- monitor social interactions
- set up social behavior goals with student and implement a reward program.
- prompt appropriate social behavior either verbally or with private signal
- encourage cooperative learning tasks with other students
- provide small group social skills training
- praise student frequently
- assign special responsibilities to student in presence of peer group so others observe student in a positive light

Source: Harvey C. Parker, PhD, from *The ADHD Handbook for Schools: Effective Strategies for Identifying and Teaching Students with Attention-Deficit/Hyperactivity Disorder,* via A.D.D. WareHouse.

## 11.2b Giftedness and Creativity

Gifted individuals have always captured our attention and our imagination. We are in awe when we attend our school's winter concert and see a tiny little girl, barely able to climb on the piano bench, play like a virtuoso. We flock to movies with young stars that can make us cry with genuine sorrow or laugh with joy. There are also those more familiar incidences of exceptional learning ability. For example, those nieces and nephews at every wedding who answer complicated mathematical problems in their head while we run for paper and pencil. These are the gifted and talented youth of our schools and our lives. They are such a unique population that we have always had trouble designing effective educational programs. How do you teach a student poetry comprehension when his/her perceptual insights exceed your own? How do you teach a student to paint, when his/her own work is already selling at galleries? These are legitimate concerns, and the answers are elusive. In this section, we will look at how we define gifted and talented, as well as the associated skill of creativity. We will also examine characteristics of the gifted and explore the challenges these present educators.

### Defining Gifted and Talented

There are many ways to define giftedness, but let's begin with the influential federal definition. The federal government reauthorized the Jacob K. Javits Gifted and Talented Students Education Act of 1988 as part of the Every Student Succeeds Act of 2015. The Javits legislation is important for the education of gifted students because it provides a common definition. It also provides much needed funding for gifted programs. States can apply for grants to support services for gifted and talented youth. It also provides for leadership funding for

educators to broaden their understanding of gifted and talented education. Unfortunately, the law does not mandate services or specific programs for gifted students. The lack of a centralized mandated program often leads to substantial differences in program quality.

### Definition of Gifted and Talented—Javits Gifted and Talented Students Education Act

The term "gifted and talented" when used with respect to students, children or youth means students, children or youth who give evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership ability, or in specific academic fields, and who require service or activities not ordinarily provided by the school in order to fully develop such capabilities.

Source: Public Law 103–382, Title XIV, 1988, p. 388.

Gifted programs also vary in quality because schools design gifted programs around different definitions of giftedness. The federal definition has found its way into many state laws, but other definitional approaches are common (Heller, 2007; Lubart & Zenasni, 2010; Subotnik et al., 2011). Another popular approach to viewing students with gifted abilities comes from Renzulli (1978, 2020). He defines giftedness by the characteristics needed to produce exceptional work. According to his theory, there are three important factors: above average ability, task commitment, and creativity. His theory is typically represented graphically (see Figure 11–5) as three intersecting circles. This figure represents how the individual uses natural intelligence, creativity, and high task commitment to achieve exceptional outcomes. According to Renzulli, gifted students can apply their talents to general performance areas like math or language arts and to a wide range of specific performance areas, like poetry, clothes design, or architecture. This model has survived the test of time and is a frequently cited model of giftedness.

**Figure 11–5** **Renzulli's Three Characteristics of Giftedness**

## Characteristics of Giftedness

The search for characteristics of the gifted has a long history. Probably one of the longest running studies of gifted children is a study started by Lewis Terman (Holahan & Sears, 1995; Terman & Oden, 1947, 1959; Terman et al., 1925;) in the 1920s. His study of over a thousand children with IQ scores over 140 has provided a valuable look at the qualities and characteristics of very intelligent people. There was certainly variability in the participant population; in general, however, they were more emotionally stable, athletic, and better adjusted as adults. They also had lower rates of divorce, drug problems, and delinquency. The Terman studies are important because they are a lengthy follow-up of a single cohort of individuals, but the studies are not without critics. The selection criteria used to establish the original cohort was far from systematic. Teachers simply nominated "bright" students who then received an IQ test. It is possible that these teachers were able to identify students who would later have positive outcomes. It has also been noted that many of the students in Terman's study came from upper-income families whose resources may have helped their children regardless of intellectual ability (Ceci, 1990).

Other researchers have taken a global approach to defining the characteristics of students who are gifted. Winner (1996) proposes three qualities that define the remarkable abilities of giftedness:

- *Precocity* Children who are gifted explore a domain of interest at an accelerated rate. They make earlier gains in the area than their peers and reach mastery at an early age. Learning in this domain has an effortless quality, and they appear to enjoy the process.
- *Insistence on marching to their own drummer* Learning for the child who is gifted is qualitatively different, not just accelerated. They resist explicit instruction. They enjoy learning on their own and create their own learning path.
- *Passion to master* Children who are gifted display an intense internal motivation. Their desire to learn often takes on an obsessive quality, requiring little parental support.

Additional research on the characteristics of children who are gifted shows that they are less conforming to peer opinions (Gottfried & Gottfried, 1996), adjust better emotionally (Oram et al., 1995), and have superior leadership skills (Roeper, 1992). Not all research, however, shows a positive outcome for children who are gifted. Research has also shown that children who are gifted have higher levels of emotional reactivity (Piechowski, 1991) and may have lower self-concepts (Lea-Wood & Clunies-Ross, 1995). It is important to keep in mind that participant populations across these studies vary, and teachers should use caution when applying research findings to specific students. These findings help us, however, ask better questions and look more closely at certain factors.

An additional point to consider when thinking of the characteristics of children who are gifted is their similarity to children with ADHD. There are certainly differences between the two student populations, but there is enough overlap that diagnostic decisions are complicated. Figure 11–6 lists some characteristics that appear similar between children with ADHD and children who are gifted. As you read each of the qualities, there does appear to be a common set of problems; however, a closer examination of the issues indicates a different underlying cause for the observed behavior. For example, task persistence appears to be impaired in both situations. In ADHD, however, the issue is with an impaired ability to internally direct attention. External stimuli cannot easily be ignored leading to a limited attention span. The child who is gifted also has trouble with task persistence, but the cause of their trouble is different. They are frequently educated in a manner that is not sufficiently challenging. This is particularly true in students whose exceptionality is unrecognized. This leads to boredom, which in turn makes it difficult to stay on task. Teachers need to look beyond the behavior itself and consider the underlying causes of the behavior. This helps determine the true nature of the student's difficulties and leads to appropriate identification and services.

**Figure 11–6 Comparison of ADHD and Giftedness Behaviors**

| Behaviors Associated with ADHD (Barkley, 1990) | Behaviors Associated with Giftedness (Webb, 1993) |
|---|---|
| ■ Poorly sustained attention in almost all situations | ■ Poor attention, boredom, daydreaming in specific situations |
| ■ Diminished persistence on tasks not having immediate consequences | ■ Low tolerance for persistence on tasks that seem irrelevant |
| ■ Impulsivity, poor delay of gratification | ■ Judgment lags behind development of intellect |
| ■ Impaired adherence to commands to regulate or inhibit behavior in social contexts | ■ Intensity may lead to power struggles with authorities |
| ■ More active, restless than peers | ■ High activity level; may need less sleep |
| ■ Difficulty adhering to rules and regulations | ■ Questioning of rules, customs, and traditions |

Adapted from Webb, J. T. & Latimer, D. (1993). ADHD and children who are gifted. *ERIC Digests,* ED358673, ERIC Digest #522.

## Assessment of Giftedness and Creativity

The nature of evaluation for giftedness depends on the model a particular school uses for identification (Johnsen, 2011). Some schools screen entire grades for students who are gifted. They use group IQ and achievement tests to screen for students who might be eligible for services. The group approach is attractive for screening, because it opens the possibility for gifted services to the entire population being tested. Other approaches rely on teacher or parent nomination for evaluation. Once a given student is identified as possibly needing services for giftedness, they are likely to receive an individually administered IQ test. Using an IQ cut-off score has historically been a prominent approach to establishing eligibility for gifted programs. Other newer approaches take a more comprehensive look at the student and their abilities.

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One way through which gifted students can be identified is visual and performing arts assessments.

More comprehensive approaches to the identification of gifted students include intelligence testing, academic testing, direct observation, visual and performing arts assessments, creativity checklists, and tests of creativity. Unfortunately, it is rare to see this level of commitment to testing for the student who is gifted. The benefits, however, are clear. Students who are gifted often display their gifts in different domain areas. Assessing only intelligence and academics ignores individuals who express their giftedness in other areas like visual and performing arts. Still, other students may exhibit their gifts in social relations or athletics, which is why direct observation is important. Creativity checklists often cover many areas of interest in an inexpensive and convenient test. For example, the Pfeiffer-Jarosewich Gifted Rating Scales (Pfeiffer & Jarosewich, 2003) provides teachers with rating scales for intellectual ability, academic ability, artistic ability, creativity, motivation and leadership.

Although there is a general trend to do less testing when determining giftedness, one area that has seen greater attention is creativity. Recall that according to Renzulli, creativity is a necessary component to gifted work. **Creativity** is often defined as having two qualities: originality and functionality (Simonton, 1990). This means that it is not only important to produce or do something novel, but also that it needs to have some functional outlet to be considered a creative work. In schools, a commonly used test of creativity is the Torrance

**Creativity**

Often defined as having two qualities: originality and functionality

**Divergent thinking**
The ability to think of multiple solutions to a given problem

**Convergent thinking**
The ability to think analytically, and usually deductively, of the one correct solution

Tests of Creative Thinking (Torrance, 1972; Torrance & Hall, 1980). This test specifically looks at three facets of divergent thinking. **Divergent thinking** is the ability to think of multiple solutions to a given problem. This is contrasted with **convergent thinking**, the ability to think of the one correct solution. The three facets of divergent thinking measured by the Torrance Test of Creativity are fluency, flexibility, and originality. *Fluency* refers to the ability to produce many ideas (e.g., thirty different uses for a brick). Flexibility refers to the ability to think in categorically different ways (e.g., bricks can be used as paper weights and bricks can be used as building materials—two categorically different uses). *Originality* is the ability to think of unusual responses (e.g., a brick can be broken and the pieces used to replace the bone a person has broken). Imagine a student that thought of thirty different uses for a brick, but all the uses were for "building" something. Some of the things suggested, however, were unusual for their age (e.g., building a sea wall to save an eroding beach). This student would likely score well on fluency and originality, but low on flexibility since all responses were about building. As you can see from this example, the test in this case is also defining the construct. That is, because the Torrance Tests of Creative Thinking was used, the definition of creativity became fluency, flexibility and originality. This is often the case with assessment, and educational professionals need to consider this fact when selecting assessment instruments. Ideally, the school or state would deliberate on their meaning of the construct first and then choose assessment instruments that accurately and effectively measure the construct.

## Education of Students Who Are Gifted

Historically, there appears to be a view of gifted education that "less" is the best practice. Some view students who are gifted as so self-motivated that no special educational modifications are needed. This is not the case. As this book consistently emphasizes, all students need an educational program that is uniquely suited to their individual learning needs. Students who are gifted are no different. Unfortunately, research shows that teachers are not increasing their use of such differentiated learning practices with students with exceptional gifts as discussed in Chapter 8 (Westberg & Daoust, 2003). If schools are to meet the needs of students, they need to be sensitive to the individual. This means teachers will need many educational tools to meet the wide variety of student needs. Let's look at some of the educational approaches used with children demonstrating gifted ability and exceptional creativity.

**Acceleration**
The process of providing an advanced instructional setting to meet the needs of exceptional learners

**Enrichment**
The process of providing advanced learning opportunities for students, while maintaining their regular educational placement

### Acceleration versus Enrichment

One persistent controversy in gifted education is over acceleration versus enrichment (Davis & Rimm, 2004; Feldhusen et al., 1996). **Acceleration** is the process of providing an advanced instructional setting to meet the needs of exceptional learners (commonly thought of as skipping grades). **Enrichment** is the process of providing advanced learning opportunities, while maintaining students' regular educational placement. Research provides positive support for the acceleration of students who are gifted (Kulik, 2003). Students appear to benefit from higher achievement and more positive self-concepts. They do not appear to suffer from greater social problems as is commonly believed (Swiatek, 1993). Some teachers mistakenly believe that accelerating students means they need to skip grades. Although this is an option, there are many other ways to accelerate students who are gifted. They may be moved to another grade for instruction only in an area of strength. For example, rather than stay in their regular classroom for math, they may go next door to a higher grade for math instruction. Also, young children may simply start school early. Adolescents may leave their high school earlier

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Research provides positive support for the acceleration of gifted students.

in the day to take classes at a local college. All of these approaches provide accelerated learning opportunities. Alternatively, enrichment approaches attempt to give the student challenging learning opportunities in their current grade placement. The difficulty with this approach is that the teacher often finds it necessary to give the advanced student independent work while attending to the more typically developing student majority. At times this works given the exceptional internal motivation of these students, but the loss of active teaching may limit their progress.

# In the Classroom

## *Applying Theory*

### Practical Suggestions for Teachers Applying Acceleration and Enrichment Approaches to the Education of Gifted Students

#### Classroom Application

As the above section suggests, acceleration and enrichment approaches can have a positive impact on academic achievement of gifted students (Kim, 2016; Steenbergen-Hu & Moon, 2011). The following provides practical suggestions for how to apply the results of research findings to curriculum implementation and shaping the classroom environment for the gifted student.

**Acceleration:** Acceleration is a strategy that involves moving students through an educational program at a faster pace or at a younger age. Research has shown that this can be beneficial for gifted students.

- **Grade-skipping** If a student is academically advanced, consider allowing them to skip a grade. This can provide them with more challenging material and keep them engaged in their education.
- **Subject-specific Acceleration** If a student is particularly advanced in one subject, consider allowing them to take a higher-level course in that subject. This can provide them with the challenge they need without accelerating them in all areas.
- **Early Admission** For students who are ready, consider early admission to kindergarten or college. This can provide them with the academic challenge they need at an earlier age.
- **Dual Enrollment** Allow students to enroll in college courses while still in high school. This can provide them with a challenging curriculum and the opportunity to earn college credits.

**Enrichment:** Enrichment involves providing students with additional learning experiences that go beyond the standard curriculum. This can be particularly beneficial for gifted students who may not be challenged by the standard curriculum.

- **Independent Study** Allow students to pursue independent study projects on topics of interest. This can provide them with the opportunity to delve deeply into a topic and develop their research skills.
- **Mentorship Programs** Connect students with mentors in their area of interest. This can provide them with real-world experiences and the opportunity to learn from experts in the field.
- **Extracurricular Activities** Encourage students to participate in extracurricular activities that align with their interests. This can provide them with additional opportunities to explore and develop their talents.

### Curriculum Packing

**Curriculum packing**
A technique to help teachers make appropriate curricular adjustments, depending on the specific learning needs of the student

Another easy-to-implement approach to gifted education is called curriculum packing. **Curriculum packing** is a technique to help teachers make appropriate curricular adjustments depending on the specific learning needs of the student (Reis et al., 1992). In other words, it is a system to help teachers modify daily lessons to meet the needs of each student. The authors of the approach regard the system as "organized common sense." This simply underscores that the system is an organized approach to techniques teachers are already using. Curriculum packing has three basic phases:

1. The first phase is to have the teacher thoroughly define their goals for a particular lesson or unit. This can be a bulleted or numbered list of goals or objectives.
2. Next, the teacher determines which students have mastered all or most of the goals for that unit.
3. Finally, for those students who demonstrate mastery of the current lesson objectives, replacement material is provided that appropriately challenges the student. This supports each student's continued intellectual growth.

The difficult part of this process is that teachers will need to maintain a thorough curricular plan for future material. This is because students who are gifted will rapidly outpace their classmates and require the instructional material to address advanced learning goals. The process of providing advanced instructional materials may take the form of enrichment (discussed earlier) or acceleration, particularly if the student is performing significantly above grade level.

### Problem-Based Learning

**Problem-based learning (PBL)**
A student-centered technique based on constructivist principles that typically helps students use self-directed group-based learning to work through real-life, open-ended problems

**Problem-based learning (PBL)** is another popular approach used with students who are gifted (Finkle & Torp, 1995; Gallagher, 2021). This approach is a student-centered technique based on constructivist principles that typically helps students use self-directed group-based learning to work through real-life, open-ended problems. It is important to develop a real-life problem that the students find engaging. The problem can be co-designed with the students to increase student investment. It is also important to have an ill-defined problem or one with multiple solutions. This is because the approach is essentially an exercise in divergent thinking. The students are encouraged to think creatively and come up with multiple solutions to the problem. This requires critical thinking and active learning. Research shows that problem-based learning can motivate students to actively participate in their own learning, but this needs to be balanced with more traditional instruction in the content material (Arends, 2000; Smith et al., 2004). Table 11–3 lists some of the benefits of using PBL with gifted students and some suggestions for implementation.

## Encouraging Creativity

A final point we will consider is educational approaches supporting creative thinking. Much of the educational process is geared toward teaching students to find the *correct answer.* On the surface this sounds like a positive goal, but there are some issues with focusing too heavily on such a convergent thinking approach. Finding the correct answer often requires a thorough and productive brainstorming process. Brainstorming is a divergent thinking process and just as crucial as convergent thinking. Teachers need to help students develop both thinking approaches.

## Table 11–3 Problem-based Learning with Gifted Students

| Benefits/ Implementation | Description |
|---|---|
| Benefits of PBL for Gifted and Talented Students: | ▸ **Depth and Complexity:** PBL allows gifted students to delve deeper into topics, exploring them from multiple angles and seeking out complex solutions.<br>▸ **Autonomy:** Gifted students often thrive when given the autonomy to direct their own learning, which PBL naturally provides.<br>▸ **Collaboration:** Working in teams helps gifted students develop social skills and learn to value diverse perspectives.<br>▸ **Real-world Application:** PBL encourages students to apply their knowledge in real-world contexts, making learning more relevant and engaging. |
| Implementing PBL for Gifted and Talented Students: | ▸ **Select Meaningful Problems:** Choose problems that are open-ended, complex, and relevant to students' lives.<br>▸ **Facilitate, Don't Direct:** The role of the teacher shifts from being a "sage on the stage" to a "guide on the side." Teachers should provide guidance and resources as needed but allow students to take the lead.<br>▸ **Encourage Reflection:** Regularly have students reflect on what they're learning, the processes they're using, and the solutions they're developing.<br>▸ **Assess Holistically:** Rather than traditional tests, use portfolios, presentations, and other holistic assessment methods to evaluate students' understanding and skills. |

One important factor in encouraging creative thinking is to provide a safe, risk-free learning environment (Piirto, 1999). How many times do you think beginning teachers say, "Do you have any questions?" What kind of student response are they likely to get? The answer depends on the classroom environment, but all too often the students simply stare at the teacher and the next learning objective is presented. Teachers need to create a comfortable learning environment where students feel safe to ask any question and offer any response. This is a challenging task. Often, teachers who attempt to create a relaxed and safe learning environment feel that unusual student responses and questions derail curricular progress. They may inadvertently suppress such questions by subtle looks or differentially reinforcing more traditional student questions. Again, the downside is that students will fail to develop their creative thinking ability. Ultimately, this may mean they have difficulty reaching correct solutions to problems because they are unable to think of a sufficient range of possible answers.

(Adobe Stock)

A safe, risk-free learning environment is critical for encouraging creative thinking.

## *Summarize and Reflect*

1. The second section of this chapter reviewed two of the most common exceptional learning situations not covered under IDEA.
2. Attention-deficit/hyperactivity disorder (ADHD) is one of the most common disorders of childhood. We looked at the current process for identification of ADHD, as well as concerns over its possible over-diagnosis. We then reviewed how current theories attempt to explain the causes behind this complex disorder. Next, we discussed several assessment approaches and the benefits and concerns regarding medication. Finally, we looked at several educational approaches designed to help create a productive learning environment for students with ADHD.

3. The other special needs situation we explored was giftedness. Often considered one of the most underserved special learning needs, students with accelerated learning present many challenges. First, we defined giftedness and reviewed some basic characteristics of the gifted student. Next, we reviewed issues related to the assessment of giftedness and creativity. Finally, we discussed different educational approaches for gifted students and reviewed how teachers can support creative thinking.

### Informed Application

1. Create an example of a teacher beginning to be concerned about a student who is experiencing deficits in executive functioning. Detail what student behaviors or thoughts are the source of her concerns and specify what kind of referral would be appropriate.
2. A high school science teacher is invested in developing students' convergent *and* divergent ways of thinking. What specific quality do you think she is particularly interested in developing? How can she modify classwork and the classroom environment to accomplish her goals?

## 11.3 Exceptionality: Families and Culture

This chapter has looked at ways students differ in their learning ability, behavior, and social functioning. We have learned about identification of special needs, assessment, and education. Effective education, however, cannot ignore the powerful influence of factors outside the school environment. One of the significant changes seen in schools across the last twenty years is the growing appreciation of families as collaborators in education (Nabors, 2011). This is true for every student but takes on special meaning for families of students with exceptionalities. Families are the foundational structure from which children emerge to grow and explore the world. Family influence on the educational lives of students is significant and vital to their achieving the best educational experience. In this section, we will look at the ways teachers interact with parents and family members to create positive learning experiences. We will also take a closer look at the relationships with fathers, siblings, and grandparents and how they play a unique role in the dynamics of family life and student success. Finally, we will examine the influence of a family's cultural background on the educational process. We will review research on disability acceptance and cultural background. We will also look at how cultural background relates to identification for special services in the schools.

### 11.3a Exceptionality and the Family

Families are highly interactive and interdependent groups. Families rely on each other for social and financial support. We also look to our families for emotional support and understanding. This is an incredibly complicated system, yet one with which teachers need to become familiar to provide the best educational experience for students. Bronfenbrenner (1977, 1979, 1989) describes developmental life in the context of larger familial, community, and societal levels. His ecological theory stresses the importance of these larger layers of influence if one is to fully understand the development of the child. For example, a teacher may notice an increase in a student's focus and determination. After a parent conference, the teacher learns that the parents are providing additional support and encouragement for the child to help the child achieve better grades. This is because the parents recently learned that their company offers a scholarship plan for dependents that maintain an *A* average in school. What this shows is that a student's performance is influenced by many factors. Some are close and

constant factors in the child's life, like parents, siblings, and grandparents. Larger community and societal factors also affect students. As this example shows, a company policy resulted in real changes in the academic achievement of the student. These shifting and dynamic changes provide valuable information for the teacher. It helps them better understand and help students achieve their potential. Students with exceptionalities are no different in the complexity of their life system. Let's look more closely at the overall life circumstance of the student with exceptional learning needs.

(Adobe Stock)

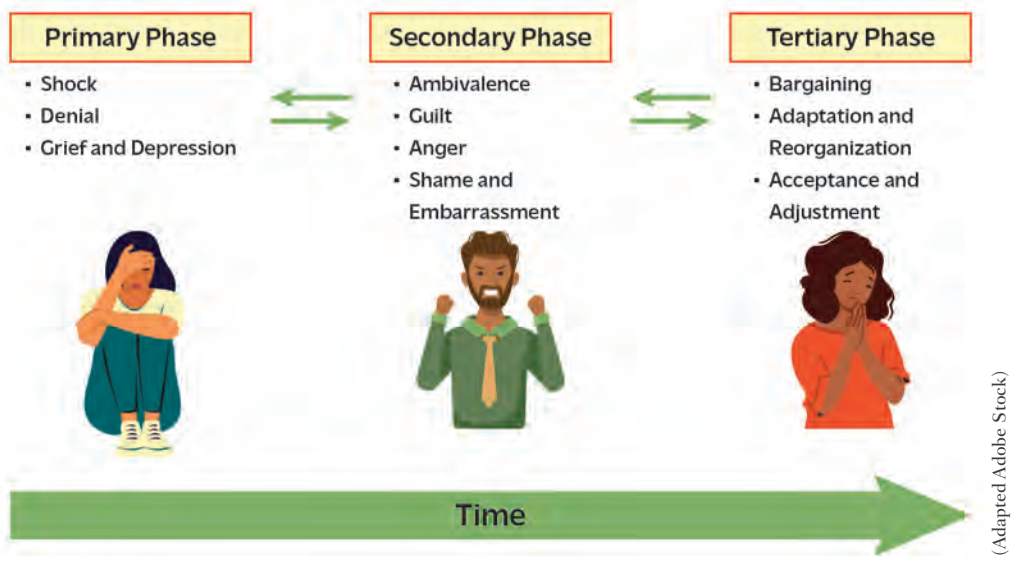
Teachers need to be familiar with each student's family system to provide the best educational experience.

## Parents

How we view the role of parents in education has changed dramatically over time. Currently, parents and caregivers act as integral collaborators in the education of their students. They actively participate in educational planning and help provide an important look at the context in which students live and learn. Viewing parents as collaborators gives teachers better tools to understand factors affecting student success. This is particularly true when a student has an exceptional learning need. Whether the identification of a special need is new or long-standing, the nature of the exceptionality affects the entire family; in turn, the family affects the motivation, outlook, and success of the student.

It is difficult to predict a family's reaction to the news that a child has an exceptional learning need. In part, it depends on the nature of the learning situation. Families are much more likely to view a diagnosis of gifted learning ability favorably than a diagnosis of autism. Some families, however, view even severe impairments with optimism and hope. Some parents can look at a challenging learning need and see hope and faith that the challenge will help the family grow stronger. Others follow a more traditional path of grief, guilt, and eventual acceptance. Researchers have defined stage models to define the adaptation process following the diagnosis of a disability (Gargiulo, 1985), as shown in Figure 11–7.

**Figure 11–7 Stage Models of the Adaptation Process Following the Diagnosis of a Disability**




(Adapted Adobe Stock)

(Adobe Stock)

Parents and caregivers are an integral part of the education of their child.

Again, the importance of this model is not that every parent will go through these stages, but the model informs the teacher about possible parental reactions. This helps teachers deal more effectively with parents by allowing them some time to consider how to deal with the range of emotional possibilities.

The dynamic relationships within a family mean that adjustment problems experienced by the student will have an impact on the relationship of the parents. Again, parental reactions will vary and depend on numerous factors. One potential outcome is that parents might experience marital difficulties following a disability diagnosis. The research on this topic is mixed. Some studies find an increase in marital issues (Gabel et al., 1983; Hodapp & Krasner, 1995); whereas, others find the opposite effect (Scorgie & Sobsey, 2000; Scorgie et al., 1998). It appears to depend on the unique situation of the family, and teachers should remain sensitive to this and provide support and appropriate resources.

Another family dynamic gaining attention is that of fathers and children with disabilities. Historically, researchers have focused heavily on the nature of the mother-child relationship. Newer research, however, is investigating the equally important paternal relationship in the development and success of the child with a disability (Flynn & Wilson, 1998; Lamb & Meyer, 1991; Meyer, 1986; Young & Roopnarine, 1994). Fathers appear more likely to focus on issues like the visibility of the disability and the long-term consequences to the family. They are less likely to focus on the day-to-day issues in raising a child with a disability. The father's attitude clearly influences the views of the family and the student, which has implications for the student's performance in school. Again, teachers should be sensitive to these dynamics when planning assistance for students with disabilities. It is not enough to create an appropriate learning environment at school. Attending to the social dynamics of the student's life outside school is just as important in determining the success of the student. There are limits to a teacher's influence in home affairs, but developing a thorough understanding of the student's life provides the foundation for a truly collaborative relationship with the family.

## Siblings

Siblings play a crucial role in our development. For many, sibling bonds are the first significant social network in a child's development (Powell & Ogle, 1985). This relationship is typically altered by the knowledge that a child has a disability. Sometimes the nature of the disability limits the social interactions of siblings because of the amount of parental attention required to care for the child (Crnic & Leconte, 1986). Sometimes this leads to positive interactions among siblings (McHale & Gamble, 1987) as siblings take on socially supportive roles. Other times, siblings can develop anger and resentment (Russell et al., 2003; Stoneman & Berman, 1993). Support groups often help siblings understand their role in families raising a child with a disability (Meyer & Vadasy, 1994). Support groups help children share their feelings and discover a level of care for their siblings that balances their need for love and personal attention. Teachers can also play a supportive role. Often teachers have students in their classes who have a sibling with a disability. Their knowledge and experience can help the student better understand the nature of his/her sibling's challenges and provide a supportive and understanding educational environment.

(Adobe Stock)

For many people, sibling bonds are the first significant social network.

## Grandparents

One of the newer areas of research in this field is grandparents. Up until recently, little research focused on the impact of extended family members on the life of the child with an exceptional learning need. Grandparents usually have multiple concerns when they learn a grandchild has an exceptional learning need. They care for the well-being and education of their grandchild, but they also care for their own child (the parent) and the difficulties they encounter raising a child with special needs (Marsh, 1993; Seligman et al., 1997). Many grandparents provide generous emotional support for their child (the parent) and their struggles rearing a child with a disability (Seligman & Darling, 1997). This depends, however, on the grandparent's own perception of the grandchild's learning needs. Potentially, grandparents can provide additional stressors if they fail to perceive the situation in a positive light. In the end, for families dealing with a child with special learning needs, it is about having a positive outlook and hard work.

(Adobe Stock)

Grandparents help care for the needs and education of their grandchildren.

# 11.3b Exceptionality and Cultural Diversity

Families play a significant role in the life of a student with exceptional learning needs. Not all families, however, are created equal. Families are made up of different relationships, numbers of individuals, and varied cultural backgrounds. As we saw in the last section, different family members play unique roles in the dynamics of family life. In this section, we will expand that discussion, looking at sociological and cultural differences. We will also look at how culture potentially impacts the identification of giftedness.

## Cultural Heritage and Acceptance

Cultures around the world vary in how they perceive someone as "different" and how they behave toward such individuals. Much of the United States and Eastern Europe still see "differences" as negative, which potentially results in separation from mainstream society (Smart, 2001). This is interesting because western cultures also tend to hold a medical view of disability, believing that disabilities can be identified and treated (Harry, 1992). Other cultures have a very different belief structure regarding disability. Some see a disability as the will of a higher power (Hanson et al., 1990). Asian cultures often see a disability as a source of shame or embarrassment (Misra, 1994). These belief structures make it more difficult for teachers to develop productive and collaborative educational relationships. Teachers, however, can make every effort to help parents view their child's situation as one where positive change can be made. It requires the teacher to maintain a sensitivity and understanding for the unique cultural heritage of the parents (Salend & Taylor, 1993). They also need to demonstrate their willingness and obligation to the appropriate education of the student and their belief in the student's ability to make positive changes.

## Identification and Diversity

A final point to consider is the impact of cultural heritage on the identification for special services. A review of the potential for cultural factors to impact a student's inclusion in the special education program was covered in Chapter 10. Let's now take a similar look at how cultural factors impact the identification of gifted students.

(Adobe Stock)

Cultures around the world differ in how they perceive those who are "different."

## Cultural Diversity and Representation in Gifted Programs

Gifted programs across the nation suffer from issues that are almost the mirror image of those found among students receiving services under IDEA. In 2017–2018, the National Center for Educational Statistics reported that 12.6 percent of students from Asian descent were in gifted programs. This compared to 8.1 percent for white students, 4.9 percent for American Indian/Alaska Native students, 4.5 percent for Hispanic students, and 3.6 percent for Black students. As we discussed earlier in this chapter, gifted programs are increasingly recognized across the country. Programs are growing, but it is not clear that this growth is affording equal opportunity to all students. Schools need to pay close attention to the selection process for gifted programs and the reasons for over- or under-representing certain student populations. Families from economically disadvantaged backgrounds and students who manifest their gifts in unusual domains are particularly at-risk for exclusion from gifted programs.

## *Summarize and Reflect*

1. The final part of this chapter examined the life of students with exceptionalities outside the classroom.
2. We learned that research is continuing to demonstrate that educational best practices are grounded in an appreciation of the whole student. This includes their family life and the cultural framework in which they live.
3. We began our look at life beyond the classroom by exploring the many relationships in the family unit.
4. We discussed the role of parents and their adjustment to life with a student who has special learning needs. We also looked at siblings and the powerful influence they have on each other. Grandparents also play a role in the dynamics of the family. We examined their effect on the student with exceptional learning needs, as well as the parents.
5. The final part of this section focused on exceptionality and culture. Although cultural background is often viewed as far removed from the day-to-day learning situation, it is a constant influence in the lives of students.
6. We discussed how different cultures view exceptionality. We also discussed how identification of special learning needs is influenced by culture and racial/ethnic background.
7. We reviewed steps teachers can take to help ensure students receive equal attention when a special learning situation is suspected and evaluated.

### Informed Application

1. Describe a student/parent conference specifically held to discuss the recent identification of the student as gifted. List at least three important questions the teacher should ask as well as the parent's responses. Finally, briefly describe changes the teacher can make based on this conversation to provide a better educational environment for the student.
2. How can a teacher integrate an understanding of a student's cultural heritage into how they educate the student?
3. In your opinion, what are important elements to include in the assessment of a student for a gifted program? Should you guard against cultural factors impacting the process?

# The Chapter in Review

Today's educational system faces many challenges as schools strive to meet the individual learning needs of all students. In this chapter, we examined special learning needs supported through legislative acts other than the Individuals with Disabilities Act (IDEA). Two laws developed during the civil rights movement govern much of our work with students outside of IDEA. The Vocational Rehabilitation Act of 1973 has a specific section that has direct application to schools. Section 504 provides discrimination protection for any institution receiving federal funds. We learned that since most public and private schools receive some measure of federal funding, they are obligated to meet the nondiscrimination standards of the law. We also reviewed the Americans with Disabilities Act (ADA), which also provides discrimination protection for individuals with disabilities. We compared ADA with Section 504, learning how the two laws use a common set of standards to ensure equitable treatment under the law. We also compared these two laws to IDEA in terms of defining disability, eligibility, evaluation, and services. We underscored the importance for all teachers to develop a thorough understanding of these laws if they are to have the necessary tools to provide a free and appropriate education for all students.

In the second part of the chapter, we examined attention-deficit/hyperactivity disorder (ADHD) and students who are gifted and talented. ADHD is an often misunderstood set of behavioral symptoms. We began with a definition of ADHD and then discussed the many theoretical explanations for the disorder. We also looked at assessment tools and the evaluation process for diagnosing ADHD. The final part of the section reviewed important educational considerations when dealing with students with ADHD. In this section, we also explored the life and education of the student with unusual gifts. Gifted and talented programs are becoming more common and elaborate but are still limited. We examined defining characteristics of giftedness and how educational professionals identify gifted students. We also discussed several educational approaches that support accelerated learning abilities.

The last part of the chapter expanded our look at exceptional learning needs by focusing on life outside the school. Evidence is growing that teachers need to understand and appreciate the life circumstances of students if they are to provide the best educational environment. To understand the life of the student outside school, we began with a close examination of the impact on family members. We looked at parents, siblings, and grandparents, and how family members have a direct impact on the academic success of the student. Next, we reviewed important cultural factors influencing student life. We explored the effects of a student's cultural group on the acceptance of disability. All these factors contribute to the educational success of the student, and today's teachers are increasingly taking a holistic educational perspective.

# Interdisciplinary Case Focus

## Student/Teacher Case Focus

Kyra Baldwin, Student

## Interdisciplinary Team

- Parents
- Psychologist

## Referral Question

Possible need for referral to the gifted program due to unusual aptitude in mathematics.

## Kyra Baldwin

Kyra Baldwin is a seven-year-old girl attending Mt. Dora Elementary School. She is in the second grade and the eighth child of Debra and William Baldwin. She has Ms. Sara Evans for all subjects except science, which is taught by the other second grade teacher, Ms. Barbara Mason. Her current curriculum is standard for the grade. She does well in all subjects. This is consistent with all the Baldwin children, who are known throughout the school as diligent and successful students. The one area of concern is Kyra's mathematical ability. Ms. Evans noticed at the beginning of the school year that Kyra demonstrated a strong aptitude for mathematics. She easily handled in-class math work and enthusiastically answered any math question when called. It was about one month into school when Kyra began bringing in what she called "extra credit." The first of these sheets looked like a series of squiggles on a lined sheet of notebook paper. Ms. Evans smiled at Kyra and gave her a polite, "Thank you" for the unusual submission. Kyra apparently realized that Ms. Evans did not understand, so she proceeded to explain the significance of her work. Kyra told the teacher to count the "humps" on each of the squiggles. Somewhat confused, but curious, she began to count out loud: 2 6 10 14 3 6 9 12 4 10 16 22. Unsure Ms. Evans was able to understand the pattern, Kyra explained that she was adding a number to the first number to create a pattern. First, she was adding 4 each time, then she switched to 3, and finally 6. She added that if you "tap out" the pattern on the desk it makes a sort of song. She exclaimed, "This is my music." Ms. Evans thanked Kyra for her extra credit and began to keep a closer eye on Kyra's math work. Her next extra credit involved multiplication. She turned in a sizable stack of paper filled with simple multiplication problems written in tiny, very precise handwriting. She had accurately written down the entire multiplication table through the 20s. When asked if she copied this from something, Kyra frowned and said adamantly that she "counted it out." The work was so extensive and must have taken so much time, Ms. Evans began to get concerned and decided to talk to her parents.

### Parent Conference

Kyra's parents did not seem surprised at the call and readily agreed to a conference the next day. Ms. Evans expressed her concern that perhaps Kyra was spending an unusual amount of time on her "extra credit." Her parents smiled and assured Ms. Evans that Kyra loves math. They said that while their other seven children completed their homework each evening, Kyra would get bored so that is when she decided to do her extra credit with her siblings. They informed Ms. Evans that Kyra is very bright and frequently surprises them with her insights. For example, the other day Mr. Baldwin was making cookies with Kyra and decided to double the recipe. The first ingredient was three-quarter

teaspoon of baking soda. Mr. Baldwin told Kyra that to double that amount they would need 1½ teaspoons. Fascinated, Kyra asked her father to explain. Using soup cans, Mr. Baldwin attempted to explain part/whole relations to Kyra. To his surprise, Kyra was able to double each of the other ingredients with only one mistake. Ms. Baldwin then quickly told about an incident when Kyra and her sister were driving to a nearby town. Kyra's sister asked her how long it would take, and Ms. Baldwin told her that at their current speed, it would take twenty-five more minutes. Kyra then pronounced that if her mother doubled her speed, it would only take twelve and one-half minutes and that she should speed up.

Both parents told Ms. Evans that they had been meaning to talk to the school about having her tested for the gifted program, but with eight children they had trouble getting anything done. They also noted that Kyra did well in other areas but did not exhibit the same acceleration in anything but mathematics. They wondered if this was typical of gifted children. After some discussion about gifted and talented students, Ms. Evans and Kyra's parents decide to have the school psychologist give Kyra an individually administered IQ test. Ms. Evans expressed concern that the school's policy was that students needed to achieve a score of 130 or higher to participate in the gifted program. Kyra's specific skills in math may not produce an overall IQ score high enough. She indicated that they would start with the IQ test (which has a separate math subscale) and collect additional information if necessary.

### ✦ School Psychologist

The school psychologist, Mr. Hyam, administered the WISC-IV, which is an individually administered IQ test commonly used in school systems. The test took approximately two hours to complete. The psychologist report indicated an overall IQ of 124. This places Kyra in the superior range of intellectual performance. The psychologist noted that Kyra's scores were consistently high across subtests with an exceptional strength on the Arithmetic subscale. Her performance on this scale was higher than 99 percent of students her age. Curious about this discrepancy, the psychologist called Kyra's parents and requested permission to give her the math sections of the Woodcock-Johnson Test of Achievement. The parents wanted to contact her teacher to discuss the results before proceeding with additional testing.

## Collaborative Meeting: Parents, Teacher, Psychologist

Mr. and Ms. Baldwin met with Ms. Evans and the school psychologist, Mr. Hyam, to discuss the merits of additional testing. Mr. Hyam expressed his concern that the IQ tests failed to capture Kyra's talents in math. He indicated that a math achievement test would further explore her math ability. Ms. Evans agreed but noted that since Kyra did not achieve the required 130 on her IQ test, she was ineligible for the school's gifted program. She noted her disagreement with the school's policy regarding the gifted program and made two suggestions. First, they could proceed with the achievement testing and if the results documented her exceptional abilities, they would begin to look for appropriate classroom modifications to meet her learning needs. Second, she encouraged Kyra's parents to make an appointment with the school's principal to discuss the possibility of adopting a more holistic set of criteria for the gifted program. Mr. and Ms. Baldwin agreed with both suggestions.

At a second meeting, the psychologist reported that Kyra did exceptionally well on the achievement test, scoring better than 99.9 percent of students her age. He thought it important to note that on specific computational skills, she was well above average; however, on a subtest of mathematical reasoning, which relies less on skills Kyra has not yet been taught, she scored at the tenth-grade level.

The team discussed how best to meet Kyra's learning needs. They considered an enrichment approach, where Kyra would stay in her regular class and receive advanced instruction. They also considered moving her to the third-grade class for math only. After considerable discussion, it was decided to recommend to the principal that Kyra remain in the second grade for the immediate future. Ms. Evans would make a list of all the math skills taught in the second grade and begin to test Kyra on each skill. In cases where Kyra has clearly mastered the skill, Ms. Evans would move ahead to the next skill in the

curriculum. They agreed that they would follow this *curriculum packing* approach until Kyra had mastered all the second-grade skills. At that point, she would move to the third-grade math class following a similar approach.

### Follow-up

Kyra quickly moved through the second, third, and fourth grade curricula. She began her third-grade year in the fifth-grade math class. Her performance outside of math continues at an excellent rate but is manageable in her age-appropriate grade.

Mr. and Ms. Baldwin met with the school principal to discuss the school's policy on admission to the gifted program. This led to additional meetings with the school board and other educational officials. At present, the school is preparing to modify its gifted program. The school is adding other sources of information including teacher observations, teacher and parent rating scales, achievement tests, and tests of creativity.

Mr. and Ms. Baldwin also located a gifted summer program at a nearby university where there is a special program for advanced math students. The six-week program allows Kyra to explore math using tools and facilities unavailable in her local school. She is also able to socialize with other students with similar ability, which helps her develop a positive view of herself and gives her broader socialization opportunities.

# Key Terms

Acceleration 474

Attention-deficit/hyperactivity disorder (ADHD) 457

Behavior rating scale 464

Continuous performance test (CPT) 465

Convergent thinking 474

Creativity 473

Curriculum packing 476

Divergent thinking 474

Enrichment 474

Executive functioning 461

Free and Appropriate Education (FAPE) 453

Otherwise qualified 454

Problem-based learning (PBL) 476

Reasonable accommodation 456

Section 504 of the Rehabilitation Act of 1973 451

Self-regulation strategies 467

Substantial limitation 455

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