7.1 What Is Gifted and Talented?

This section provides definitions of gifted and talented. These definitions do not come from IDEA 2004 because this legislation does not cover students who are gifted. The section continues with a discussion of the prevalence of gifted and talented students in schools.

Defining Gifted and Talented

Gifted is often used as an umbrella term that describes individuals who are gifted or talented. Students who are gifted demonstrate innate abilities that are exceptional. Students who are talented demonstrate exceptional performance related to their ability. Most people use the terms gifted and talented interchangeably.

While there are no universal definitions of gifted or talented, the primary organization that represents gifted students, the National Association for Gifted Children (NAGC), provides the following guideline:

Gifted individuals are those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in top 10% or rarer) in one or more domains. Domains include any structured area of activity with its own symbol system (e.g., mathematics, music, language) and/or set of sensorimotor skills (e.g., painting, dance, sports). (2008)

According to the NAGC definition, gifted and talented students demonstrate or have the potential for exceptional abilities in one or more areas.

Another definition, this one from a federal statute, explains that gifted and talented students demonstrate higher performance or are capable of higher performance in intellectual, creative, or leadership domains. According to these definitions, which also vary from state to state, gifted and talented students need specialized instruction, activities, or services in order to develop their exceptional abilities above and beyond general classroom instruction (Stephens & Karnes, 2000).

Gifted and Talented and IDEA 2004

Giftedness is not a category under IDEA 2004, but many school districts serve gifted students through special education offices or programs. The thinking is that students with disabilities require individualized instruction to meet their learning needs, and the same should be true for gifted students. The wide variability in definitions of gifted by both states and districts, though, means that many gifted students are not identified and are underserved (Robertson, Pfeiffer, & Taylor, 2011).

Furthermore, money to provide specialized programs to gifted students does not come from funds provided to school districts under IDEA 2004. Districts provide services through their district budgets; some schools apply for grant funding or work with private organizations to provide programs for gifted students.

Prevalence of Gifted and Talented

According to state-reported data from the National Center for Educational Statistics (2008), more than 3 million American students qualified as gifted in 2006. Each school or district, however, determines its own criteria and process for determining giftedness in both academic and nonacademic areas. Thus, the statistical prevalence of giftedness is difficult to determine and compare between schools, districts, and state populations (Callahan, 2011). As with students with disabilities, giftedness persists into adulthood (Fiedler, 2012).

Minorities tend to be underrepresented in gifted programs (Ford, 2013), as opposed to overrepresented in disability categories (Bollmer, Bethel, Garrison-Mogren, &Brauen, 2007). Reasons for the underrepresentation of minorities include fewer referrals from teachers and bias of assessments for eligibility (Ford, 2013; Hargrove & Seay, 2011). Also, some minority students may choose to not participate in programs because of the negative comments they could get from peers about being in the gifted program (Henfield, Washington, & Owens, 2010). While this is more often reported for minority students, many gifted students may experience some bullying or ostracism because of being gifted (Peters & Bain, 2011).

7.2 How Has the Gifted and Talented Field Evolved?

Like students with disabilities, students with giftedness have not always received special services. Toward the end of the 19th century, some schools started to provide appropriate educational services to gifted students.

One such effort was put forth by William Torrey Harris, the superintendent of schools in St. Louis, Missouri. Harris ensured that the school curriculum was enhanced to meet the needs of gifted students and incorporated art and music into the school day. By the turn of that century, school districts in large cities, such as San Diego and Chicago, started creating classes or schools for students who could handle an advanced curriculum (VanTassel-Baska, 2010). The first school devoted exclusively to the education of gifted students opened in Worcester, Massachusetts, in 1901 (Henry, 1917).

The Debut of the Intelligence Quotient Test

With the development of the first intelligence quotient (IQ) test in France in 1905, people began the attempt to quantify intelligence. The Binet-Simon Intelligence Test was originally designed to identify students with intellectual disabilities.

Lewis Madison Terman, an educational psychologist at Stanford University, revamped the Binet-Simon test in 1916 as the Stanford-Binet IQ test. This test allowed schools to identify students of below-average or above-average intelligence according to their scores. Schools could use the scores to identify gifted students and provide additional or different programs for them.

After the introduction of the Stanford-Binet IQ test, schools began placing students into tracks (i.e., educational programs based on intelligence) in an attempt to provide appropriate educational services. At the heart of this movement was Leta Stetter Hollingworth, who started a "Special Opportunity Class" in New York City for students with above-average intelligence. Hollingworth went on to open the Speyer School in New York (VanTassel-Baska, 2010), which was devoted to educating gifted students. She studied her students over a number of years and wrote the first textbook on gifted students.

The Push for Educating Gifted Students

In 1954, the National Association of Gifted Children was founded to advocate for specialized programs on behalf of gifted individuals. A few years later in 1957, when the Soviet Union launched Sputnik, the first artificial Earth satellite, a movement to identify and provide advanced instruction to gifted individuals took on new life. The United States, fearing that the Soviet Union was getting ahead in terms of technology and science exploration, began pouring money into educational programs that promoted science, technology, and mathematics education. Legislation, such as the National Science Foundation Act and the National Defense Education Act, began providing funds for the education of gifted students in grades K–12.

In 1972, the U.S. Commissioner of Education, Sidney P. Marland, Jr., published a report on the education of gifted students. The Marland report defined gifted as children capable of high performance including those with demonstrated achievement and/or potential ability (Marland, 1972).The Marland report emphasized that students with outstanding abilities need differentiated instruction and services above and beyond the typical educational programs (Kaplan, 2011). In differentiated instruction, students participate in classroom activities and assignments that are tailored (i.e., differentiated) to the strengths of the individual student.

To be gifted, according to Marland, students needed to demonstrate achievement or potential ability in at least one of the following areas: general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual or performing arts, or psychomotor ability (Jolly, 2009b). (Psychomotor ability was later removed from the definition.) To assist in delivering a proper education to gifted students, the Office of the Gifted and Talented in the U.S. Department of Education was recognized in 1974.

The Jacob K. Javits Gifted and Talented Students Education Act

A 1983 report called A Nation at Risk announced that students in the United States were not performing as well as students in comparable countries around the world. The report suggested that gifted students should receive a curriculum that supports their needs. To affirm this idea, the U.S. Congress passed the Jacob K. Javits Gifted and Talented Students Education Act in 1988. This Act provided funds for national centers and programs for the education of the gifted and talented. The Javits Act was included in the authorization of No Child Left Behind in 2001 but has not been reauthorized since 2011. Without reauthorization, funds to conduct research and outreach in the area of gifted education are unavailable to research centers and state departments of education.

Even though state and federal standards for students are rising with efforts like the Common Core and No Child Left Behind, gifted students still require individualized and differentiated instruction (Johnsen, 2012). In fact, some people feel that such initiatives focus only on raising the performance levels of lower-performing students (Siemer, 2006). Therefore, gifted students may not be receiving the educational services that are warranted (Hargrove, 2012). Without proper avenues for research and dissemination (with the Javits Act) and funding opportunities for gifted programming, it is difficult for many school districts to afford gifted programs.

7.3 What Are the Characteristics of Students Who Are Gifted and Talented?

The exceptional abilities that gifted students display tend to fall into the categories of creative thinking, general intellectual ability, leadership ability, psychomotor ability, specific academic ability, and visual and performing arts ability (Amend, Schuler, Beaver-Gavin, &Beights, 2009; Song &Porath, 2011). Many (if not all) students exhibit one or more characteristics of giftedness at some time during their school careers. When these characteristics are exhibited consistently, a student warrants additional or different instruction at school.

The following section discusses the characteristics of gifted students related to their exceptional abilities and moves on to discuss students who are "twice exceptional."

Characteristics Related to Gifted and Talented

Gifted students often demonstrate a gift or talent in one or more of the following areas. These areas are similar to those found in the Marland (1972) report and those outlined by the National Society for the Gifted and Talented (NSGT). Students may exhibit some of these characteristics in one or more of the following areas (Carroll, 2008; Cukierkorn, Karnes, Manning, Houston, &Besnoy, 2008; Glass, 2004; Neumeister, Adams, Pierce, Cassady, & Dixon, 2007; Renzulli, Siegle, Reis, Gavin, & Reed, 2009):

General intellectual ability

Displays advanced vocabulary

Engages in tasks independently

Gets excited about new ideas and information; curious

Picks up new material quickly

Remembers information easily

Asks engaging questions

Processes information in complex ways

Specific academic aptitude

Eagerly participates in readings

Reads widely in an area

Comprehends difficult material

Reads advanced material

Accurately recalls facts

Discovers patterns in mathematics

Solves problems abstractly or creatively

Uses a variety of representations

Creative or productive thinking

Pursues opportunities to work and create with technology

Enjoys working with hands-on materials

Invents and creates

Writes and speaks in creative ways

Provides several solutions to problems

Challenged by creative tasks

Displays mature sense of humor; understands sarcasm

Grasps metaphors and analogies

Leadership ability

Sought out by peers as a leader

Works well with others

Expresses ideas fluently

Acts confidently

Makes sound judgments and thinks through consequences of decisions

Is organized

Likes structure

Visual or performing arts

Creates

Observes

Has a visual memory

Displays exceptional ability in art, dance, drama, or music

Reasons well spatially

Solves puzzles and mazes easily

Twice-Exceptional Students

Twice-exceptional students—that is, those who are gifted and also have a disability—have been recognized since the 1970s (Leggett, Shea, & Wilson, 2010). These students have above-average intelligence, but their disability prohibits them from reaching their full potential.

Twice-exceptional students can experience giftedness concurrent with a specific learning disability (Barber & Mueller, 2011), an emotional or behavioral disorder (Bianco & Leech, 2010), attention-deficit/hyperactivity disorder (Foley-Nicpon, Rickels, Assouline, & Richards, 2012), and autism spectrum disorder (Amend et al., 2009; Assouline, Nicpon, & Dockery, 2012). Twice-exceptional students represent a small percentage of students with disabilities. For example, approximately 3–4% of students with SLD also experience giftedness (Leggett et al., 2010).

It is often difficult to identify twice-exceptional students, because their disabilities may mask their giftedness or their giftedness may be more obvious than their disabilities (Morrison & Rizza, 2007). Schools need to use a variety of identification methods rather than relying on one assessment or observation (Rizza & Morrison, 2007). Because of difficulties with identification, twice-exceptional students are underrepresented across the United States (Bianco & Leech, 2010). That is, many students who are twice exceptional remain unidentified and only receive services or accommodations related to their disability and not their giftedness.

Determining best educational practices for twice-exceptional students can be difficult (Amend et al., 2009). These students require specialized instruction and appropriate accommodations and modifications for both their disability and their giftedness (Jeweler, Barnes-Robinson, Shevitz, &Weinfeld, 2008). For example, a gifted student with SLD related to reading may need disability services and accommodations related to reading comprehension and test anxiety (King, 2005). This student, who excels with verbal communication, may need gifted services or accommodations to promote her excellent verbal storytelling skills and creative problem-solving skills. If the teacher only focuses on the disability, the student's full potential for academic success may be ignored.

In addition, twice-exceptional students may require emotional or social support from teachers (Foley-Nicpon et al., 2012; King, 2005). For example, both gifted and twice-exceptional students may be bullied and need help dealing with this abuse (Peters & Bain, 2011). Also, many twice-exceptional children feel high expectations based on their giftedness, but they have difficulty meeting expectations because of their disability (Barber & Mueller, 2011). These high expectations may come from the students themselves or from adults or peers close to them.

7.4 What Are the Causes of Giftedness?

Like many disabilities, giftedness has no single cause. The main factors, though, are thought to be genetics and the environment (Simonton, 2005). Some people may claim that this is a debate between nature (i.e., genetics) and nurture (i.e., environment of student), but most in gifted education believe giftedness is a blend of the two (Winkler & Jolly, 2012).

A genetic influence can be seen in research showing that parents who exhibit exceptional abilities may have children who are also gifted, just as parents with disabilities may have children with disabilities (Simonton, 2005; Thompson &Oehlert, 2010). Students with gifted siblings are also more likely to be gifted themselves (Ronald, Spinath, &Plomin, 2002). In research related to the brain, researchers have discovered that gifted students demonstrate brain activation patterns different from those of students with below-average or average intelligence (Haier & Jung, 2008; Hoppe &Stojanovic, 2009; Prescott, Gavrilescu, Cunnington, O'Boyle, & Egan, 2010).

The possible influence of the environment can be seen in students who are exposed, especially at an early age, to opportunities that permit them to develop or enhance their gifts and talents (Seeley, 2004). Typically, students from lower-income families and schools or students with minority backgrounds may not have as many gift-enhancing opportunities (Gagné, 2011; Seeley, 2004), so these students may be at a disadvantage for being identified as gifted. School criteria and processes may also influence whether students are identified as gifted.

7.5 How Are Students Identified as Gifted and Talented?

No one process or assessment exists for identifying students as gifted and talented (Callahan, Tomlinson, Hunsaker, Bland, & Moon, 1995). Teacher perception plays a significant role in the recommendation of students for gifted evaluation. Interpretations of giftedness, however, vary by district and state. The identification problem is compounded by the fact that giftedness itself is manifested differently from individual to individual, and differently in the same individual at various ages. Regardless of the identification method, most researchers agree that early identification and early intervention are best for gifted students so students have many opportunities to enhance their gifts or talents (Wellisch& Brown, 2012).

Assessments

In the identification of giftedness, students need multiple opportunities to exhibit special gifts or talents through a range of instruments and performance tasks that align with the areas of giftedness being evaluated. For instance, a standardized assessment may be more appropriate to diagnose giftedness in mathematics than in art, where a portfolio of the student's work would give a more accurate assessment of exceptional ability.

Schools may use scores on intelligence tests or achievement tests to determine whether students are significantly above average, range in the top 1–5% percent, and/or meet their school's designated criteria for intellectual ability. An intelligence test (i.e., an IQ test) provides a score related to a student's potential in terms of intellectual capability; it emphasizes potential instead of showing how much a student knows. An achievement test, on the other hand, provides a score related to what a student knows. Achievement tests usually provide scores in the areas of reading, writing, and mathematics.

To most accurately identify special gifts and talents, a variety of assessments is recommended, including standardized intelligence and achievement tests, performance tasks, observation checklists, and portfolios (Callahan, 2011).

In a performance task, students complete an open-ended task that offers multiple solution possibilities. Student responses are scored via a rubric that helps determine where performance falls on a spectrum from novice to expert (VanTassel-Baska, Johnson, & Avery, 2002). On an observation checklist, teachers identify gifted characteristics that students typically display. Many times, a parent fills out an observation checklist (Figure 7.1) about behaviors exhibited in the student's home environment. A portfolio is a collection of student work that is collected to demonstrate a student's exceptional ability in one or more areas (e.g., art and music).

Figure 7.1: Observation Checklist

This teacher checklist from the State of Tennessee is filled out by a student's classroom teacher when the student is being screened for gifted identification. Information gathered from the checklists helps schools determine whether students are eligible for gifted programs. A checklist of 42 characters titled, TN Teacher Observation Checklist.

Source: Resource Packet: Assessment of Intellectual Disability and Functional Delay, p. 7, Tennessee Department of Education.

Table 7.1 shows a sampling of some commonly used assessments of achievement, performance, creativity, and problem-solving (Callahan et al., 1995):

Table 7.1: Sampling of Commonly Used Assessments

Assessment What it measures

California Achievement Test (CAT) Vocabulary, reading comprehension,

mathematics, science, social studies

Comprehensive Test of Basic Skills (CTBS) Reading, language, mathematics

Developing Cognitive Abilities Test (DCAT) Verbal ability, quantitative ability, spatial ability

Iowa Test of Basic Skills (ITBS) Vocabulary, listening comprehension, reading comprehension, mathematics, science, social studies

Peabody Picture Vocabulary Test (PPVT) Verbal ability

Scholastic Aptitude Test (SAT) Writing, reading, mathematics

Stanford Achievement Test Reading, spelling, mathematics, science, social studies

Torrance Tests of Creative Thinking (TTCT) Creativity with pictures and words

Wallach-Kogan Creativity Instrument Creativity

Watson-Glaser Critical Thinking Appraisal Critical thinking, decision making

Trained specialists (e.g., school psychologists, gifted teachers), administrators, and guidance counselors may administer assessments and interpret the scores, depending on school and district guidelines. If observations or portfolios will be used to determine giftedness, a team should be formed. Members of the team may include the student's general education teacher, a gifted teacher or program coordinator, a school psychologist or guidance counselor, and any other staff members with experience with gifted and talented students.

The student's family should be interviewed or involved in the decision-making process for eligibility for gifted programs. For students with gifts that might not be apparent in the general classroom, it is especially important that family members and other people close to the student help show school personnel all aspects of the student's exceptional abilities. For example, students with exceptional musical abilities may not be able to demonstrate their skill if the school does not have an active music program.

Limitations of Assessments

The cultural and linguistic bias in some standardized assessment instruments can influence students' performance scores. For example, some assessments require the student to read and respond to questions. If English is not the student's first language, the student may have difficulty with the reading. If the assessment were administered in the student's first language, the student's score might be a better indicator of performance. Additionally, some assessments ask questions related to activities that could be considered culturally biased because a student may be unfamiliar with the content—for example, Halloween trick-or-treating (if not celebrated), remodeling of a house (when living in an apartment high-rise in the city), playing racquetball (if it has never been played or seen). Teachers have no control over the bias of instruments, of course, but they can use instruments that demonstrate minimal bias as much as possible.

Two young boys measure the growth of a plant in their school classroom.

© JLP/Jose L. Pelaez/Corbis

Teachers may not realize students who are English Language Learners (ELL) are gifted if students do not demonstrate proficiency in English. Some researchers have suggested that assessments without a verbal component might be helpful in identifying gifted ELL students, but research in this area is still under investigation (Lohman, Korb, &Lakin, 2008).

Teachers may have difficulty spotting giftedness in students who are English Language Learners (Harris, Plucker, Rapp, & Martinez, 2009). First, because of difficulties with the English language, teachers may not readily identify students and refer them for a gifted evaluation (Harris et al., 2009). Also, because many students may be working on their English skills, students may not participate in activities (e.g., a problem-solving activity in science class) that would help get them noticed for demonstrating gifted characteristics (Harris, Rapp, Martinez, &Plucker, 2007).

Unintended evaluation bias can also occur for populations living in low-income communities, rural communities, or attending low-performing schools (Howley, Rhodes, & Beall, 2009). These students may be considered for evaluation less frequently and may have fewer opportunities to develop and refine their talents than if they attended a more affluent school. Ethnic and racial minorities are disproportionately affected because these students tend live in low-income communities more often than non-minority students, which may be a reason that fewer minority students are identified as gifted (Callahan, 2011).

Evaluation bias can also occur for students who have been previously diagnosed with a disability and are twice exceptional. Teachers or evaluators may let the student's disability cloud their judgment about the student's potential for giftedness. Indeed, every student has a multitude of strengths and weaknesses, and all of them must be considered when making educational decisions.

Response to Intervention

RTI, as you learned in an earlier chapter, is a framework that schools use to provide tiers of services for the diagnosis or instruction of students with disabilities or giftedness. It is especially useful in identifying twice-exceptional students because RTI can assist teachers in determining how well students respond (or do not respond) in specific content areas (Crepeau-Hobson & Bianco, 2011; Hughes et al., 2009; Pereles, Omdal, & Baldwin, 2007). Using RTI alone, however, may not be the most viable approach for identifying twice-exceptional students because disability often masks giftedness (and vice versa), so a comprehensive evaluation might be better for identifying giftedness in twice-exceptional students.

When Are Students Identified?

Students may be referred for gifted and talented programs at any time. A parent or teacher may request a gifted screening. When students show exceptional ability in general intelligence, a specific subject (e.g., reading or mathematics), or a nonacademic area (e.g., art or music), the evaluation process can be initiated.

7.6 How Does Being Gifted and Talented Differ Across Grade Levels?

Gifted and talented students may receive services in several different ways. They may be "pulled out" of the general education classroom to receive instruction by a teacher qualified in gifted instruction. Middle and high school students may be placed in honors and advanced placement courses. Acceleration is common for gifted students, either across grade levels or within their grade level curriculum. Gifted students may be promoted to the next grade, or work through classroom content at a faster pace than their peers. (See the discussion of pullout programs and acceleration in Section 7.7.) Students who are gifted in nonacademic areas, such as arts or music, may enroll in magnet schools, if the local school district provides them.

Magnet schools are public institutions that organize instruction around a particular skill or interest (e.g., arts and theater, engineering, technology) or academic excellence (e.g., International Baccalaureate program). Courses and curricula at magnet schools include coverage of state standards as well as instruction specific to the magnet's area of specialty. Magnet schools often require students to apply, and the selection process can be competitive. Magnet schools are most prevalent at the secondary level, since they focus on developing skills to prepare students for careers in specific fields. However, some districts have magnet programs or schools at the elementary level, which prepare students to apply for magnet schools in middle and high school.

Early Childhood

A child showing early evidence of giftedness might reach developmental benchmarks (language, counting skills, classifying/organizing objects, etc.) significantly earlier than normal. However, since children develop at varying rates during their early years, it can be difficult to accurately diagnose giftedness at young ages.

There is debate on whether giftedness can or should be identified in early childhood, as well as whether recognizing giftedness before Kindergarten is necessary for students to realize their full potential (Callahan, 2011). Some talents may not be evident until children enter elementary school, and students may not demonstrate giftedness at an early age. Additionally, putting too much pressure on developing a gift or talent at very early ages can be detrimental to young children's development. However, once a young child demonstrates a particular gift or talent, adults can encourage development in a supportive manner. Special education services are typically not available for young gifted students, but early education teachers and parents can provide opportunities to develop gifts and talents.

Early childhood teachers can provide activities that are enjoyable and engaging for young children. If a child shows talent in art or science, creative activities, such as art projects and experiments, can encourage this interest. Additionally, providing praise and practice for students who show academic excellence in areas of early literacy and mathematics can be beneficial. In any case, early identification of exceptional talent can help parents and pre-school teachers encourage ability and facilitate access to opportunities.

Elementary School

Once in elementary school, gifted students are more likely to be diagnosed. Schools provide services for elementary students with giftedness in several ways. Often the responsibility falls on the general education teacher, who may accommodate gifted students by differentiating instructional activities, grouping students by ability, or allowing acceleration within the curriculum (all of which will be described in detail in "How Do I Teach Students with Giftedness?"). Teachers must be careful that their instructional decisions and student groupings are not rigid and that they allow all children opportunities to move forward.

Gifted services that are offered outside the general education classroom are typically led by a gifted education teacher and may or may not be grade- or subject-specific. Schools may offer special classes for the whole day for students who are gifted in all academic subjects. More often, though, students are pulled out for content-specific enrichment in addition to their general classroom instruction. Academic enrichment typically takes the form of projects and activities that encourage higher-order thinking about the classroom content (e.g., project-based learning in which students recreate westward expansion). Arts or music enrichment may include additional instruction and practice on different types of art genres.

Secondary School

Once students who are gifted move on to middle school, they are more likely to be placed in honors and high school level classes. Gifted high school students are commonly placed in honors, Advanced Placement (AP), and/or International Baccalaureate (IB) classes. Honors classes typically incorporate more rigorous assignments than the general class curriculum. AP classes offer students the opportunity to earn college credit by passing an intensive exam at the end of the course. Students must apply to the IB program, which is highly competitive and rigorous. IB students are also prepared to take AP exams at the end of each year to earn college credit while still in high school. Gifted high school students also may elect or be selected to attend magnet schools to develop their talents in specific areas, such as creative arts or engineering.

Ensuring that students who are gifted find the appropriate level of challenge and rigor is especially important in middle and secondary school. Increased peer pressure to fit in socially, coupled with high academic expectations, can influence students' desire to achieve. Depending on a student's interests and social group, achievement in school may not be widely accepted. Additionally, gifted students often face high expectations from parents and teachers because of their recognized talent. Encouraging student motivations and interests can help keep them focused on realizing their full potential. Summer and afterschool programs can encourage talent and skill, while also providing students with opportunities to build a social network with peers who share their interests. Ensuring students see the connections between their gift or talent and future career opportunities is also important to keep students motivated.

Transition

Gifted students' transition to post-secondary outcomes and opportunities is different from those of students with disabilities. Since giftedness is not an exceptionality classification under IDEA, teachers and parents may elect whether to create a transition plan for students. Students who are twice exceptional will likely have a transition plan that incorporates goals for both giftedness and disability. Please refer to the Chapter 3 section on transition for more information on transition plans for students with disabilities.

Gifted students may or may not be interested in pursing their gift or talent as a career. Students who are motivated to do so can benefit from summer or afterschool programs that develop particular skills and interests. These programs can enable students to make contacts in their field of interest that lead to future opportunities. Acceleration (and its potential pitfalls) is also something to consider for a gifted student's transition from high school. Students who have accelerated through school may be able to take college coursework at a much earlier age than class peers, but social and psychological support may be helpful or even necessary for gifted students to adjust (Cross, 2011). Mentoring, goal setting, and career planning can also be beneficial for gifted and talented students in post-secondary environments.

7.7 How Do I Teach Students With Giftedness?

Teachers can choose from among teaching strategies used for all students to improve the instruction and outcomes for gifted students, and no one teaching model or strategy is considered best. These students should receive instruction that enhances their individual abilities (Tomlinson, 2005). A team of school staff (e.g., general education teachers, gifted teachers or specialists, school psychologists) should consider student strengths and weaknesses and develop an individualized program for each gifted student.

Some schools put together a Gifted Individualized Education Program (GIEP) that functions similar to an IEP for students with disabilities. Please note that a GIEP has no connection with IDEA 2004 or special education funding. However, a GIEP helps the school staff (and the student's family) understand what specialized programs or accommodations are available to provide enriched experiences for a gifted student. For example, a student's GIEP may highlight how a student's academic program will be accelerated (i.e., covering more academic material in a shorter amount of time) or gifted programs in which the student may participate.

General classroom teachers can enhance the education of gifted students by employing various strategies related to accelerating or enriching the learning of gifted students. Often, gifted students can be grouped together for such instructional purposes. Two common approaches to providing gifted students learning opportunities within the general classroom include differentiation and Universal Design for Learning (UDL).

Student Grouping Strategies

Schools may group any students for social, political, or instructional reasons (Kettler, 2012). Social grouping includes keeping siblings with the same classroom teacher or distributing males and females across classrooms. Political grouping deals with fairness. For example, a school may feel it fair to distribute gifted students among classroom teachers instead of placing all the gifted students with one teacher. Instructional grouping allows teachers to tailor instruction for a group or classroom of students. Often, the way students are distributed into classrooms (i.e., grouped) is determined at the school or district level.

Regardless of the grouping strategy (i.e., social, political, instructional), students may receive gifted services in a variety of ways:

Self-contained classrooms or programs. In a self-contained classroom, all students have similar needs (e.g., they are all gifted). A teacher who is familiar with specializing instruction for gifted students provides accelerated and differentiated instruction for the classroom. Elementary schools that group students by ability create self-contained classrooms within each grade level. In secondary schools, self-contained classrooms are created when students are placed into tracks by ability. For example, an Advanced Placement (AP) or honors class might be considered a self-contained gifted placement. (These classes, however, might include students who are bright or hard-working but who do not qualify as gifted. Often, these students also benefit from the accelerated curriculum of the self-contained classroom.)

Pull-out programs. Pull-out programs group similar students together and provide them with instruction outside the general classroom (McAllister &Plourde, 2008). In many school districts, the gifted program may take place one afternoon each week. At that time, all gifted students are pulled from their general classroom to participate in gifted programs for the time period. Pull-out programs allow gifted students to explore topics in more depth than in the general classroom, or allow them to participate in problem-solving activities, such as Odyssey of the Mind.

Cluster groups. In a cluster group, several gifted students are placed together within a general classroom. This strategy works well for both elementary and secondary students because schools do not always have the resources for self-contained classrooms or pull-out programs. Typically, students are in groups of four to eight students (Pierce et al., 2011). The clustering enables the classroom teacher to tailor the content, products, and learning environment to meet the needs of the gifted students while the rest of the classroom participates in the general curriculum.

Traditional Teaching Strategies

Quite a few traditional teaching strategies can be employed to improve the educational programs of gifted students in any grouping situation (Brulles&Winebrenner, 2011). These methods include acceleration, compacting, enrichment, and independent studies.

As with all effective instruction, proper teacher training is vital (Brulles, Saunders, & Cohn, 2010). Teachers cannot implement strategies or programs without an in-depth knowledge of how to apply them with gifted students. Teachers also need to gather observational and academic data to understand whether gifted students are benefitting from the evidence-based strategies that teachers are using (Eyre, 2007). If students are not demonstrating appropriate performance gains, then teachers need to re-evaluate their instructional strategies and try another strategy.

Acceleration

Acceleration is a process in which students work through materials at a quicker pace or earlier than other students. For example, a student may learn about cell mitosis in one week instead of three. Acceleration may also mean that a student skips a grade in school. Some high school students accelerate their instruction by taking college courses while still in high school.

Acceleration has been shown to be a viable strategy for providing a challenging curriculum to gifted students and for setting gifted students up for later success in life (Gross, 2006; Vialle, Ashton, & Carlton, 2001). To effectively implement an accelerated program, however, teachers need to work with students to prepare them academically and emotionally. Many gifted students experience a drop in self-esteem once they start an accelerated program because the work is challenging and not as easy as they are used to. With proper support, however, students will learn to succeed in their accelerated curriculum (Chapman, 2009).

Whether acceleration that involves skipping grades in school is the best choice for gifted students is controversial. Some experts express concern about the emotional and social needs of the students, while others have demonstrated that gifted students who skipped grades or entered college early seem to be happy and content with their acceleration (Boazman&Sayler, 2011; Steenbergen-Hu & Moon, 2011).

Compacting

To use the strategy of compacting, the teacher assesses (either formally or informally) what a student already knows about a topic and then allows the student to skip known material and move to learning new material (Sutton, 2001; Winebrenner, 2003). Compacting can be used at the elementary and secondary levels (Lewis, Cruzeiro, & Hall, 2007). For example, if a middle school teacher is planning a two-week unit on the core of the Earth, the teacher could administer a pre-test. If a student already knows most, if not all, of the material, the teacher could compact the unknown material into two or three days and then move on to another science unit with this student. Without compacting, many gifted students are bored because they are reviewing material they already have learned.

Enrichment

To provide enrichment, teachers provide extension activities for gifted students. Typically, enrichment activities go into more depth than typical classroom activities (Miller & Gentry, 2010). An effective enrichment activity gives students a choice about what or how they will learn and then provides challenging activities or assignments accordingly (Pereira, Peters, & Gentry, 2010). Enrichment might involve assigning alternative readings that cover a specific topic in greater depth (Halls, 2011). For example, in a classroom unit on Egypt, the student may read books about writing in hieroglyphics and the process of mummifying bodies. In mathematics, students might be presented with open-ended problems that require a variety of upper-level mathematics skills to solve (McAllister &Plourde, 2008). In a history class, student learning might be enriched by research into local history and participation in hands-on activities as well as field trips (Morris, 2005). Students can conduct interviews with people who have lived in the community for years and then write and act in a play about the history of the community.

Enrichment can occur during the school day in a general classroom or a gifted program. It can also occur in Saturday programs or summer programs for gifted students (Pereira, et al., 2010). Some gifted programs are connected with local colleges and universities, rather than a school district; other gifted programs may be connected with private organizations (e.g., an engineering lab, a medical school, or a creative writing center). Typically, these organizations reach out to local schools to help with recruitment of gifted students.

Independent Studies

Students engaged in independent studies investigate a topic in depth with monitoring and guidance from a teacher or mentor. Mentors are often community members (e.g., architects, musicians, journalists) who work in the student's area of interest. Independent studies work well when students decide (or have a choice) about what they would like to learn and investigate (Delisle, 2012; Powers, 2008). Students can also be provided with open-ended tasks that allow them to decide which approach to use to solve a problem (Gadanidis, Hughes, & Cordy, 2011). For example, a student may decide to investigate the effect of recycling on their community. This task does not have a "yes" or "no" answer, and the student makes choices about how to do the research and measure the effect of recycling. Students should also be presented with authentic reading experiences to pursue their independent learning (Moore, 2005). A student can read books, magazines, plays, newspaper articles, or diaries to learn about a topic.

Technology

Technology can be used to provide instruction to gifted students (Thomson, 2010), especially in schools with limited resources, a small number of gifted students, or a rural location without access to gifted services and programs. At internet portals, students can work with other gifted students in other locations to solve problem-based scenarios (Eckstein, 2009). Online learning portals can connect students with appropriate mentors to engage in meaningful learning opportunities. Of course, teachers need to ensure that the technology sources are appropriate (i.e., age-appropriate, content-appropriate, and with credible information) for their students to use (Johnson, 2008).

Differentiated Instruction

Differentiation of instruction is probably the most mentioned approach for teaching reading and mathematics, as well as content-area subjects, such as science and history, to gifted students (Chval& Davis, 2008; Park & Oliver, 2009). In differentiation, the content (i.e., what the student learns), process (i.e., how the student learns), and product (i.e., how the student shows what she has learned) are differentiated by student (Tomlinson, 1999). Differentiation works well for gifted students because the curriculum is adapted based on the student's readiness, interest, and learning profile. For twice-exceptional students, differentiation can be used for both remediation and extension or advancement (Manning, Stanford, & Reeves, 2010; Rock, Gregg, Ellis, & Gable, 2008).

Differentiation is not a specific program, but an approach to designing instruction for students. The proper differentiation of instruction for students requires quite a bit of training and preparation on the part of teachers (Dee, 2011). Teachers determine their students' interests and abilities (Manning et al., 2010). They then individualize the content, process, and product for students based on each student's readiness, interest, and learning profile (Tomlinson, 1999).

Differentiating the Content, Process, and Product

Teachers can differentiate the content, the process, and the product. Content refers to the material covered during instruction. Process refers to how students will access and interact with material. Product refers to the ways that students demonstrate their knowledge or understanding of the material.

To differentiate by content, teachers can adapt current instructional materials or change the ways that students interact and work with those materials (Tomlinson, 2001). Some ways to differentiate by content include teaching concepts (rather than procedures), compacting, developing learning contracts, conducting mini-lessons, and using a variety of materials and resources.

Learning contracts are an agreement between the teacher and student about what and how the student will learn. The student is held accountable for ensuring that he or she is making adequate progress toward meeting goals. Mini-lessons, which work well in general classrooms, involve teaching students in small groups, in which teachers can extend or remediate work.

To differentiate by process, teachers develop meaningful ways for students to learn the materials. Strategies that help differentiate by process include having students in interest groups, providing students with different types of graphic organizers, providing complex and varied instruction, allowing students to work independently, and accessing the multiple strengths of students.

Differentiating by product entails creating assignments or outcomes that truly show what a student has learned. These products should be interactive and engaging; traditional end-of-chapter tests often are not effective products. See Table 7.2 for some examples.

Table 7.2: Differentiation by Products

|  |  |  |
| --- | --- | --- |
| **Sample products** | | |
| Design a game | Make a documentary | Conduct an interview |
| Conduct an experiment | Write a biography | Circulate a petition |
| Write letters to an editor | Design a costume | Write a song |
| Present a news report | Create a recipe | Write a new law |
| Write a musical | Design political cartoons | Conduct a training session |
| Be a mentor | Write a book | Plan a journey |
| Write a poem | Lead a symposium | Present a radio program |
| Put on a puppet show | Design a web page | Develop an exhibit |

Differentiation by Readiness, Interest, and Learning Profile

Teachers determine a student's readiness, interest, and learning profile and use this information to differentiate by content, process, and product. Readiness refers to how well a student understands underlying or prerequisite material before the teacher begins presenting new material. Once a teacher has assessed what students already know (determined their readiness), he or she should provide learning opportunities that push students to learn new material or that which is an extension of previously learned material.

To formulate an approach to differentiating instruction, Tomlinson (2001) encourages teachers to think about the following:

Should representations be more concrete (i.e., hands-on, easy-to-understand) or abstract (i.e., less easy to picture)?

Should resources and materials be simple or more complex?

Should problems have a single approach or many approaches?

Should transfer to novel problems be a small leap or giant leap?

Should solutions and approaches be more or less structured?

Should students have less or greater independence?

Should the pace of learning be slow or quick?

In addition to readiness, teachers need to gauge their students' interest, or engagement, in learning. Teachers need to understand the interests of their students, play into them, and help students develop new ones (Tomlinson, 2001). For example, a student who loves dinosaurs might be encouraged to learn about other prehistoric animals and plants. Table 7.3 lists ways teachers can differentiate based on a student's interests.

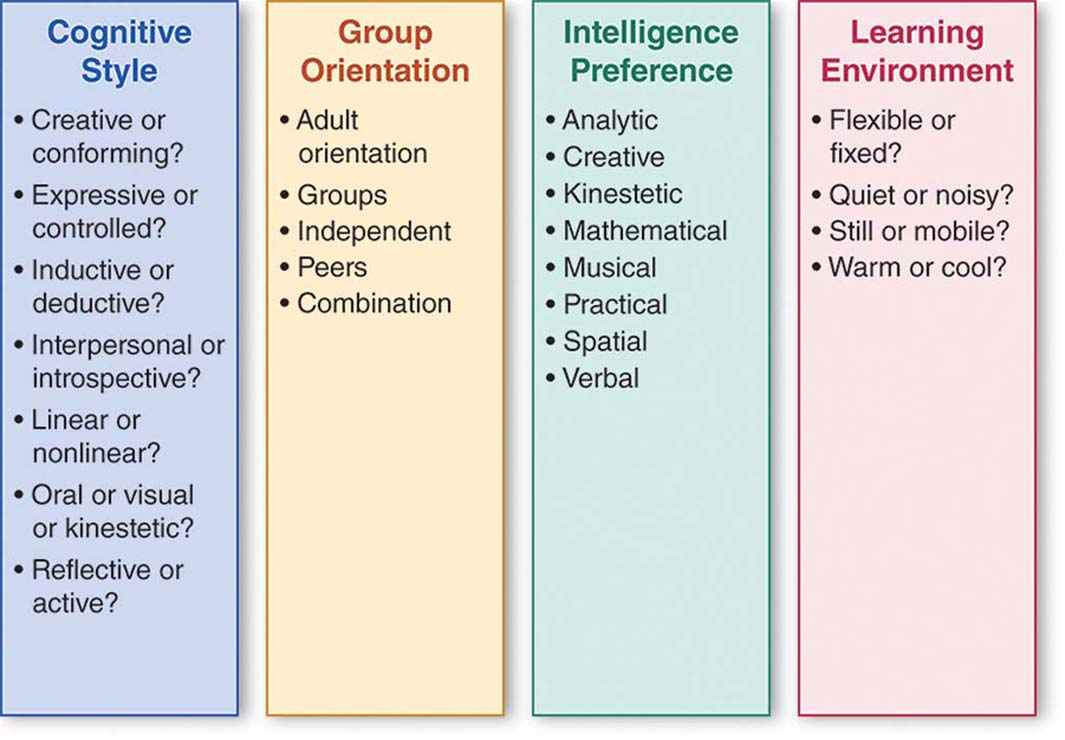
Table 7.3: Differentiation by Interest

|  |  |
| --- | --- |
| **Strategy** | **Description** |
| Design-a-day | Students choose a topic to work on. Students set goals about their learning,  work towards their goals, and assess how well they met their goals. |
| Group investigation | A group of students work together to investigate a topic of the group's choice.Collaboration is key. |
| I-search | Students work independently to answer their own questions. |
| Jigsaw | A group of students all learn about different parts of a similar topic and thenshare their ideas. |
| Literature circles | Students read up on topics of interest and share their readings with otherclassmates who read the  same or similar material. |
| Negotiated criteria | A teacher gives the students an outcome (e.g., develop a movie), and thestudents use their   personal interests to help with the outcome. |
| Orbitals | Students create their own questions and find ways to answer their questions.Students then share   their information with peers. |

Another way teachers can differentiate learning is according to a student's learning profile, which describes how an individual student learns (Tomlinson, 2001). The student's learning profile is how, where, and with whom the student learns best. There are many aspects that can go into preferences based on learning style (Figure 7.2).

Figure 7.2: Differentiation by Learning Profile

All students learn in different ways. What ways do you like to learn?



Teachers who consider all the strengths of a student who is gifted, then, can differentiate instruction for that student. Differentiation does take a lot of planning and teacher education, but it can be a good approach for students who require individualized instruction either because of giftedness, a disability, or both.

Universal Design for Learning

Universal Design for Learning (UDL), discussed in Chapter 2, is also useful to gifted students. The principles of UDL encourage teachers to present content in different ways, allow students to present what they have learned in different ways, and engage in the content in different ways, which is fairly similar to differentiation. UDL and differentiation do share many of the same ideas. UDL, however, was developed with special education students in mind (whereas differentiation was a general education initiative), and UDL emphasizes the use of technology more than differentiation. Of course, gifted students can clearly benefit from instruction in which the content and interaction with the content are individualized to fit their needs.

Motivating Gifted Students

Many gifted students do well in school and need little motivation to keep up their enthusiasm for learning. Some gifted students, however, may underachieve rather than excel in school. This underachievement is often attributable to boredom, lack of challenge, or social pressure to perform at or below average. It also may be a reaction to family members' extremely high expectations (Callahan, 2011). These factors can compound over time and lead to an increased risk of dropping out of school.

Minimizing this risk and helping underachievers can be difficult for general educators who are faced with the need to simultaneously challenge and support students who are below, on, and above grade level. Teachers must find a balance between engaging disinterested gifted students and fostering habits and mindsets to help students participate even when they find the material boring.

References

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