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SPECIAL EDUCATION IN CONTEMPORARY SOCIETY

An Introduction to Exceptionality

edition 8

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2 POLICIES, PRACTICES, AND PROGRAMS

LEARNING OBJECTIVES

After reading Chapter 2, you should be able to:

2.1 **Identify** the court cases that led to the enactment of Public Law 94–142.

2.2 **Summarize** the key components of the Individuals with Disabilities Education Act (IDEA) from 1975 to 2004.

2.3 **Explain** the legislative intent of Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act.

2.4 **Compare** inter- and intraindividual differences.

2.5 **Identify** the steps in the referral process for the delivery of special education services.

2.6 **List** the key components of an individualized education program (IEP) and an individualized family service plan (IFSP).

2.7 **Define** *mainstreaming, least restrictive environment, regular education initiative,* and *full inclusion.*

Many of the policies, procedures, and practices that are common in special education today have resulted from the interaction of a variety of forces, situations, and events. One example is the role that litigation and legislation have played in the development of the field. Coupled with this activity was the gradual realization by professionals that many of our earlier educational customs and methods were ineffective in meeting the needs of individuals with disabilities and their families. Several currently accepted practices, such as nondiscriminatory assessment, placement in a least restrictive environment, and meaningful parent involvement, reflect this correction in thinking.

The purpose of this chapter is to review a variety of contributions that have helped to shape contemporary special education. Besides the impact of national legislation and the courts, we will examine the identification and assessment of individual differences, instructional programming, and models of service delivery.

LITIGATION AND LEGISLATION AFFECTING SPECIAL EDUCATION

Over the past several decades, the field of special education has been gradually transformed and restructured, largely as a result of judicial action and legislative enactments. These two forces have been powerful tools in securing many of the benefits and rights presently enjoyed by more than 7.7 million school-age and younger children with disabilities.

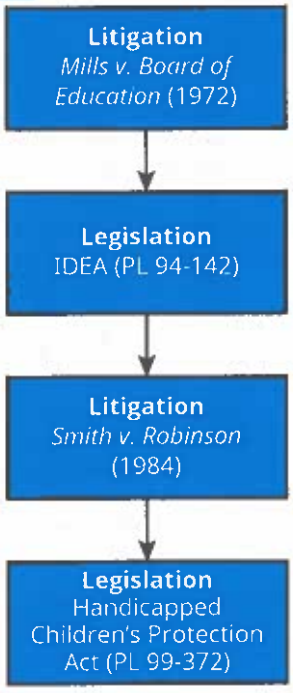
Securing the opportunity for an education has been a slowly evolving process for students with disabilities. What is today seen as a fundamental right for these children was, at one time, viewed strictly as a privilege. Excluding students with disabilities from attending school was a routine practice of local boards of education in the 1890s and early 1900s. In 1893, local school officials in Cambridge, Massachusetts, denied an education to one individual because this student was thought to be too "weak minded" to profit from instruction. In 1919, in Antigo, Wisconsin, a student of normal intelligence but with a type of paralysis attended school through the fifth grade but was subsequently suspended because "his physical appearance nauseated teachers and other students, his disability required an undue amount of his teacher's time, and he had a negative impact on the discipline and progress of the school" (Osborne, 1996, p. 4). In both instances, state supreme courts upheld the decisions of the school boards. Today, these actions would be seen as clear violations of the students' rights and a flagrant disregard for the equal protection clause of the Fourteenth Amendment to the U.S. Constitution. Still, almost four decades passed before students with disabilities had a legal means for acquiring educational rights.

In the 1954 landmark school desegregation case, *Brown v. Board of Education of Topeka, Kansas* (347 U.S. 483), the U.S. Supreme Court reasoned that it was unlawful to discriminate against a group of individuals for arbitrary reasons. The Court specifically ruled that separate schools for Black and white students were inherently unequal, contrary to the Fourteenth Amendment, and thus unconstitutional. Furthermore, education was characterized as a fundamental function of government that should be afforded to all citizens on an equal basis. Though primarily recognized as striking down racial segregation, the thinking articulated in *Brown* had major implications for children with disabilities. Much of contemporary litigation and legislation affecting special education is legally, as well as morally, grounded in the precedents established by *Brown*.

The movement to secure equal educational opportunity for children with disabilities was also aided by the U.S. civil rights movements of the 1960s. As Americans attempted to deal with issues of discrimination, inequality, and other social ills, advocates for individuals with disabilities also pushed for equal rights. Parental activism was ignited. Lawsuits were filed, and legislation was enacted primarily as a result of the untiring, vocal, collaborative efforts of parents and politically powerful advocacy groups. The success of these tactics was felt at the local, state, and eventually national level.

It is exceedingly difficult to say which came first, litigation or legislation. Both of these forces have played major roles in the development of state and federal policy concerning special education. They enjoy a unique and almost symbiotic relationship—one of mutual interdependence. Litigation frequently leads to legislation, which in turn spawns additional judicial action as the courts interpret and clarify the law, which often leads to further legislation (see Figure 2.1). Regardless of the progression, much of special education today has a legal foundation.

FIGURE 2.1 ■ An Example of the Interrelationship Between Litigation and Legislation



Source: Adapted from M. Yell, *The Law and Special Education*, 5th ed. (Pearson Education, 2019), p. 11.

Key Judicial Decisions

Since the 1960s and early 1970s, a plethora of state and federal court decisions have helped shape and define a wide range of issues affecting contemporary special education policies and procedures.

Although a thorough review of this litigation is beyond the scope of this chapter, Table 2.1 summarizes, in chronological order, some of the landmark cases affecting the field of special education. Several of the judicial remedies emanating from these lawsuits serve as cornerstones for both federal and state legislative enactments focusing on students with disabilities. Furthermore, many of today's accepted practices in special education, such as nondiscriminatory assessments and due process procedures, can trace their roots to various court decisions.

TABLE 2.1 ■ A Synopsis of Selected Court Cases Influencing Special Education Practice

Case	Year	Issue	Judicial Decision
Brown v. Board of Education of Topeka, Kansas	1954	Educational segregation	Segregation of students by race ruled unconstitutional; children deprived of equal educational opportunity. Ended "separate but equal" schools for white and Black students. Used as a precedent for arguing that children with disabilities cannot be excluded from a public education.
Diana v. State Board of Education	1970	Class placement	Linguistically different students must be tested in their primary language as well as English. Students cannot be placed in special education classes on the basis of IQ tests that are culturally biased. Verbal test items to be revised so as to reflect students' cultural heritage. Group-administered IQ tests cannot be used to place children in programs for individuals with intellectual disability.
Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania	1972	Right to education	State must guarantee a free public education to all children with intellectual disability ages 6–21 regardless of degree of impairment or associated disabilities. Students to be placed in the most integrated environment. Established the right of parents to participate in educational decisions affecting their children. State to engage in extensive efforts to locate and serve ("child-find") all students with intellectual disability. Preschool services to be provided to young person with intellectual disability if local school district serves preschoolers who do not have intellectual disability.
Mills v. Board of Education of the District of Columbia	1972	Right to education	Extended the Pennsylvania decision to include *all* children with disabilities. Established the constitutional right of children with exceptionalities to a public education, matched to their needs, including specialized instruction, regardless of their functional level. Presumed absence of fiscal resources is not a valid reason for failing to provide appropriate educational services to students with disabilities. Elaborate due process safeguards established to protect the rights of the child, including parental notification of pending initial evaluation, reassignment, or planned termination of special services.
Larry P. v. Riles	1972, 1979	Class placement	African American students could not be placed in classes for children with mild intellectual disability solely on the basis of intellectual assessments found to be culturally and racially biased. School officials directed to develop an assessment process that would not discriminate against minority children. Failure to comply with this order resulted in a 1979 ruling that completely prohibited the use of IQ tests for placing African American students in classes for children with mild intellectual disability. Ruling applies only to the state of California.
Lau v. Nichols	1974	Equal educational opportunity	A milestone case in the field of bilingual education. U.S. Supreme Court ruling noted that "there is not equality in treatment merely by providing students with the same facilities, textbooks, teachers, and curriculum; for students who do not understand English are effectively foreclosed from a meaningful education." Required schools to offer special language programs to English learners in order to confer equal educational opportunity.
Armstrong v. Kline	1979	Extended school year	State's refusal to pay for schooling in excess of 180 days for students with extensive support needs is a violation of their rights to an appropriate education. The court found that some children with disabilities will regress significantly during summer recess and have longer recoupment periods; thus, they are denied an appropriate education if not provided with a year-round education.

Case	Year	Issue	Judicial Decision
Tatro v. State of Texas	1980	Related services	U.S. Supreme Court held that catheterization qualified as a related service under PL 94-142. Catheterization was not considered an exempted medical procedure, as it could be performed by a health care aide or school nurse. Court further stipulated that only those services that allow a student to benefit from a special education qualify as related services.
Board of Education of the Hendrick Hudson Central School District v. Rowley	1982	Appropriate education	First U.S. Supreme Court interpretation of PL 94-142. Court addressed the issue of what constitutes an "appropriate" education for a student with a hearing impairment making satisfactory educational progress. Ruled that an appropriate education does not necessarily mean an education that will allow for the maximum possible achievement; rather, students must be given a reasonable opportunity to learn. Parents' request for a sign language interpreter, therefore, was denied. An appropriate education is not synonymous with an optimal educational experience.
Daniel R.R. v. State Board of Education	1989	Class placement	Fifth Circuit Court of Appeals held that a segregated class was an appropriate placement for a student with Down syndrome. Preference for integrated placement viewed as secondary to the need for an appropriate education. Established a two-prong test for determining compliance with the least restrictive environment mandate for students with extensive support needs. First, it must be determined if a student can make satisfactory progress and achieve educational benefit in the general education classroom through curriculum modification and the use of supplementary aids and services. Second, it must be determined whether the student has been integrated to the maximum extent appropriate. Successful compliance with both parts fulfills a school's obligation under federal law. Ruling affects least restrictive environment cases in Louisiana, Texas, and Mississippi but has become a benchmark decision for other jurisdictions as well.
Oberti v. Board of Education of the Borough of Clementon School District	1992	Least restrictive environment	Placement in a general education classroom with supplementary aids and services must be offered to a student with disabilities prior to considering more segregated placements. A student cannot be excluded from a general education classroom solely because curriculum, services, or other practices would require modification. Excluding a learner from the general education classroom necessitates justification and documentation. Clear judicial preference for educational integration established.
Agostini v. Felton	1997	Provision of services	U.S. Supreme Court reversed a longstanding ruling banning the delivery of publicly funded educational services to students enrolled in private schools. Interpreted to mean that special educators can now provide services to children in parochial schools.
Cedar Rapids Community School District v. Garret F.	1999	Related services	U.S. Supreme Court expanded and clarified the concept of related services. Affirmed that intensive and continuous school health care services necessary for a student to attend school, if not performed by a physician, qualify as related services.
Schaffer v. Weast	2005	Burden of proof	A U.S. Supreme Court ruling addressing the issue of whether the parent(s) or school district bears the burden of proof in a due process hearing. Determined whether the parent(s), acting on behalf of their child, must prove that their child's individualized education program (IEP) is inappropriate or whether the school district must prove that the IEP is appropriate. Court ruled that the burden of proof is placed upon the party seeking relief.
Arlington Central School District Board of Education v. Murphy	2006	Recovery of fees	U.S. Supreme Court addressed whether or not parents are able to recover the professional fees of an educational consultant (lay advocate) who provided services during legal proceedings. Court ruled that parents are not entitled to reimbursement for the cost of experts because only attorney's fees are addressed in IDEA.
Winkelman v. Parma City School District	2007	Parental rights	The Supreme Court, by unanimous vote, affirmed the rights of parents to represent their children in IDEA-related court cases. Seen as an expansion of parental involvement and the definition of a free appropriate public education. Interpreted to mean that IDEA conveys enforceable rights to parents as well as their children.

(Continued)

TABLE 2.1 ■ A Synopsis of Selected Court Cases Influencing Special Education Practice (*Continued*)

Case	Year	Issue	Judicial Decision
Forest Grove School District v. T.A.	2009	Tuition reimbursement	Parents sought tuition reimbursement from the school district after rem their child who had learning disabilities, attention-deficit/hyperactivity disorder, and depression. The child was never declared eligible for a spec education and never received services. Parents unilaterally enrolled the child in a private school. The Supreme Court found that IDEA authorizes reimbursement for private special education services when a public scho fails to provide a free appropriate education and the private school placer is appropriate, regardless of whether the student previously received spe education services from the public school.
Fry v. Napoleon Community Schools	2017	IDEA exhaustion doctrine	A suit filed on behalf of a young girl with a severe form of cerebral palsy who used a service animal. Because the school provided the student with a personal aide in accordance with her individualized education program, the school district refused to allow her the use of her service dog. The girl parents sought relief under the Americans with Disabilities Act Amendme (ADAA) and Section 504 of the Rehabilitation Act rather than the Individua with Disabilities Education Improvement Act (IDEA), which required the parents to exhaust all administrative remedies (e.g., due process hearing prior to suing under the ADAA and 504. As this was a disability discrimina issue and the adequacy of the student's educational services were not in question, the Supreme Court, in a unanimous decision, found that becaus parents were not seeking relief under the free appropriate public educatic clause of IDEA, the exhaustion requirement of IDEA was not applicable.
Perez v. Sturgis Public Schools	2023	Judicial remedies	A unanimous Supreme Court decision was rendered involving an adolesce who was deaf and sought relief, in the form of monetary damages for loss income and emotional distress, under the Americans with Disabilities Act (ADA) after successfully previously obtaining relief under the Individuals with Disabilities Education Improvement Act. In terms of the IDEA compla settlement, the school district agreed to pay for the student to attend the Michigan School for the Deaf in part due to providing the student with unqualified interpreters and misrepresenting his educational progress du his 12 years of school attendance. The high court ruled that the student's parents did not need to exhaust all of the administrative requirements required by IDEA prior to seeking relief under the ADA because (a) IDEA remedies do not restrict remedies sought under different federal laws anc IDEA does not provide for financial relief (compensation) for violations.

Source: R. Gargiulo and J. Kilgo, *An Introduction to Young Children with Delays and Disabilities*, 6th ed. (Sage, 2024).

Individuals with Disabilities Education Act: 1975–1997

Federal legislative intervention in the lives of people with disabilities is of relatively recent origin. B the late 1950s and early 1960s, little federal attention was paid to citizens with special needs. Whe islation was enacted, it primarily assisted specific groups of individuals, such as those who were de people with intellectual disability. The past 50 years or so, however, have witnessed a flurry of le tive activity that has aided the growth of special education and provided educational benefits and opportunities and rights to children and adults with disabilities.

Given the multitude of public laws[1] affecting special education, we will focus our attention on landmark legislation. Our initial review will examine PL 94–142, the Education for All Handica Children Act, or, as it came to be known, the Individuals with Disabilities Education Act (IDEA). change in legislative titles resulted from the enactment on October 30, 1990, of PL 101–476, w will be addressed later in this chapter.

Public Law 94–142

IDEA is viewed as a "Bill of Rights" for children with exceptionalities and their families; it is the mination of many years of dedicated effort by both parents and professionals. Like many other sp

educators, we consider this law one of the most important pieces, if not the most important piece, of federal legislation ever enacted on behalf of children with special needs. PL 94–142 may rightfully be thought of as the legislative heart of special education.

The purpose of this bill, which was signed into law by President Gerald Ford on November 29, 1975, is

> to assure that all handicapped children have available to them . . . a free appropriate public education which emphasizes special education and related services designed to meet their unique needs, to assure that the rights of handicapped children and their parents or guardians are protected, to assist States and localities to provide for the education of all handicapped children, and to assess and assure the effectiveness of efforts to educate handicapped children. (Section 601(c))

In pursuing these four purposes, this legislation incorporates six major components and guarantees that have forever changed the landscape of education across the United States. Despite legislative and court challenges over the past five decades, the following principles have endured to the present day:

- **A free appropriate public education (FAPE).** All children, regardless of the severity of their disability (a "zero-reject" philosophy), must be provided with an education appropriate to their unique needs at no cost to the parent(s)/guardian(s). Included in this principle is the concept of related services, which requires that children receive, for example, occupational therapy as well as other services as necessary in order to benefit from special education.
- **The least restrictive environment (LRE).** Children with disabilities are to be educated, to the maximum extent appropriate, with students without disabilities. Placements must be consistent with the student's educational needs.
- **An individualized education program (IEP).** This document, developed in conjunction with the parent(s)/guardian(s), is an individually tailored statement describing an educational plan for each learner with exceptionalities. The IEP, which will be fully discussed later in this chapter, is required to address (1) the present levels of academic achievement and functional performance (commonly referred to by school personnel as present levels of performance or PLOP), (2) annual goals and accompanying instructional objectives, (3) educational services to be provided, (4) the degree to which the student will be able to participate in general education programs, (5) plans for initiating services and length of service delivery, and (6) an annual evaluation procedure specifying objective criteria to determine if instructional objectives are being met. Many teachers and school administrators refer to this as progress monitoring.
- **Procedural due process.** The act affords parent(s)/guardian(s) several safeguards as it pertains to their child's education. Briefly, parent(s)/guardian(s) have the right to confidentiality of records, to examine all records, to obtain an independent evaluation, to receive written notification (in parents' native language) of proposed changes to their child's educational classification or placement, and to have an impartial hearing whenever disagreements arise regarding educational plans for their son/daughter. Furthermore, the student's parent(s)/guardian(s) have the right to representation by legal counsel.
- **Nondiscriminatory assessment.** Prior to placement, a child must be evaluated by a multidisciplinary team in all areas of suspected disability by tests that are not racially, culturally, or linguistically biased. Students are to receive several types of assessments, administered by trained personnel; a single evaluation procedure is not permitted for either planning or placement purposes.
- **Parental participation.** PL 94–142 mandates meaningful parent involvement. Sometimes referred to as the "Parents' Law," this legislation requires that parents participate fully in the decision-making process that affects their child's education.

Congress indicated its desire by September 1, 1980, to provide a free appropriate public education for all eligible children ages 3 through 21. The law, however, did not require services to be provided to preschool children with disabilities. Because many states were not providing preschool services to typical children, an education for young children with special needs, in most instances, was not mandated. Although this legislation failed to require an education for younger children, it clearly focused attention on the preschool population and recognized the value of early education.

People with and without disabilities protesting accessibility.

Erik McGregor/LightRocket via Getty Images

PL 94–142 did contain some benefits for children under school age. It offered small financial grants (Preschool Incentive Grants) to the individual states as an incentive to serve young children with disabilities. It also carried a mandate for schools to identify and evaluate children from birth through age 21 suspected of evidencing a disability. Finally, PL 94–142 moved from a census count to a child count of the actual number of individuals with disabilities being served. The intent was to encourage the states to locate and serve children with disabilities.

In the 1980s and 1990s, Congress reauthorized the Individuals with Disabilities Education Act. As a result of this legislative activity, services for individuals with disabilities have been expanded, student and parental rights clarified, and discipline procedures articulated along with several other key provisions. Table 2.2 presents a brief overview of some of these revisions to IDEA.

TABLE 2.2 ■ Highlights of IDEA Reauthorizations: 1986–1997

Year	Public Law	Key Components
1986	PL 99-457	• Legislation viewed as a downward extension of PL 94–142 • Mandated services for preschoolers with disabilities, ages 3–5 • Permitted early intervention services for infants and toddlers, from birth through age 2, with developmental delays or disabilities • Individualized family service plan (IFSP) established for infants and toddlers • "Developmentally delayed" label created

Year	Public Law	Key Components
1990	PL 101-476	• Name of legislation changed to Individuals with Disabilities Education Act (IDEA) • Autism and traumatic brain injury identified as discrete disability categories • Rehabilitation counseling and social work considered related services • Established the requirement of an individualized transition plan (ITP) by age 16 • States' immunity from lawsuits for violating IDEA repealed
1997	PL 105-17	• Students with disabilities required to participate in state- and districtwide assessments • Transition planning commences at age 14 • Orientation and mobility included as a related service • Discretionary use of "developmentally delayed" label for students ages 3-9 • General educators required to participate on the individualized education program (IEP) team • Students with disabilities are to be involved in and have access to general education curriculum • Mediation offered as a means of resolving disputes • Benchmarks and measurable annual goals emphasized • Students who violate student code of conduct may be removed from their current educational placement only after a due process hearing • Assistive technology needs of each learner must be assessed • Students expelled or suspended from school are still entitled to receive services in accordance with their IEP • Greater variety of assessment tools and strategies are permissible for initial evaluations and reevaluations

Source: U.S. Department of Education.

Many young children with developmental delays or disabilities have benefited from early intervention.

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EDUCATIONAL REFORM: STANDARDS-BASED EDUCATION

In the 1990s, a growing movement toward greater educational accountability called for education reform or restructuring to improve academic performance. As a result of this trend, many states initiated challenging academic standards (i.e., what students should know or be learning) and more stringent graduation requirements for their students, while several professional organizations published

performance indicators in various content areas, such as mathematics, language arts, and science. Likewise, many state departments of education moved toward performance-based standards when establishing teacher licensure/certification requirements, thus linking student success with teacher qualifications. The overall focus of this movement, fueled by various political, social, and economic forces, was a concern over the learning outcomes of our students. It is equally concerned with establishing educational equity among all learners.

The National Governors Association and the Council of Chief State School Officers put forth the Common Core State Standards (CCSS) (Common Core State Standards Initiative, 2019). The CCSS redefined the general education curriculum while outlining a set of grade-level expectations that describe what students should know in mathematics and English language arts in order to succeed in college and later careers. Presently, 41 states and the District of Columbia have fully or partially adopted these standards (Common Core States, 2023). These standards apply to all students, including students receiving a special education.

FIRST PERSON: LISA

TEACHING IN THE AGE OF ACCOUNTABILITY

Having taught for almost 10 years, I can safely say there is a definite need for accountability in education, but teaching in the 21st century presents some unique challenges. Everyone is accountable to someone for something. Teachers, for example, are accountable for teaching curriculum in preparation for high-stakes assessments, delivering data-driven instruction, using research-based strategies, and meeting the demands and deadlines imposed by administrators, while also communicating with parents. Students, on the other hand, are accountable for passing the high-stakes assessments and responding to the data-based instruction and research-based instructional strategies, while making adequate progress at increasingly higher levels of performance. Each year, it almost seems as though we have to surpass what was accomplished the previous year. The accompanying paperwork to prove this accountability doesn't get any less cumbersome either.

All this accountability comes from increasing concerns about the quality of our education. Yet, even with all this accountability, we see many students transfer with gaps in learning from not having been taught to the same high expectations. There are disparities from school system to school system that make it difficult to reach these ever-increasing levels of accountability. This "achievement gap" affects what we have to work with, yet we are still accountable for getting these students to the academic level they need to be at. If there is one thing you can count on in teaching, it is that change is constant.

Teaching is a balancing act, and educators have to be sure that they do not get lost in the "accountability jungle" or forget that one of the reasons we teach is to help our students become discoverers of their own learning, not simply pass a high-stakes assessment. As educators, our accountability goal should be how well our students apply and generalize the knowledge and information that we share with them, not how well they can regurgitate facts in order to pass an isolated test that represents only a small sample of what they have learned.

The school days are getting longer, lunchtimes are shorter, and weekends are often spent in a quiet classroom in preparation for teaching in the coming week. It seems as though we are overly accountable to the point that we are losing valuable instructional time and focus. With all that said, accountability is important as long as we view it wisely.

General education teachers are required to prove that their students are being taught with research-based tools and that student performance is documented. No longer are student performance, methods of instruction, and teaching practices at the teacher's discretion. This new level of accountability for general education teachers requires them to rely more and more on the expertise of special education teachers not only for the students who have IEPs but also for all struggling learners. At the same time, special educators are held accountable for ensuring compliance with regulations, timelines, and mounting paperwork with increasingly larger caseloads. It is a constant battle to find the proper balance—the demands of paperwork, the needs of individual students, and communication with families and general education teachers are all under

the accountability microscope. This balance is more difficult to find with each new law, mandate, and policy. Although I feel it is a privilege to work as a teacher, and more particularly as a special education teacher, working as an inclusive teacher in the age of accountability becomes increasingly difficult each year.

—*Lisa Cranford*

Instructional Support Teacher

Rocky Ridge Elementary, Hoover, Alabama

No Child Left Behind Act of 2001

In 2001, Congress reauthorized the Elementary and Secondary Education Act, which became popularly known as No Child Left Behind (NCLB; PL 107–110). This legislation reflected President George W. Bush's commitment to educational reform and accountability. This law intended to reform education so all students, including those in special education, would demonstrate proficiency in mathematics, reading, and science. The law required annual testing of children in Grades 3 through 8, with students in Grades 10 through 12 assessed at least once. Schools were expected to show adequate yearly progress toward the goal of 100% proficiency by 2014. (A small percentage of students may be excused from participating in state- and districtwide achievement tests if their IEP provides for their exemption.)

Because NCLB was concerned with the achievement of *all* students, test scores were required to be disaggregated according to the student's disability, socioeconomic status, race, ethnicity, and English language ability. Schools that experienced difficulty attaining the goal of adequate yearly progress were to be provided with technical and financial assistance. If a school failed to demonstrate adequate yearly progress for 3 consecutive years, the local school district was required to offer supplemental instructional services, such as tutoring, after-school classes, and summer programs (Council for Exceptional Children, 2003). Parents of children in "failing" schools were to be given the opportunity to transfer their children to other schools, including private and parochial schools. Another important element of NCLB was that all elementary and secondary school teachers were expected to be "highly qualified" by the end of the 2005–2006 school year according to state criteria.

The enactment of NCLB ushered in an era of what was commonly referred to as "high-stakes testing" or "high-stakes assessment." Special educators saw greater emphasis on exposing students with disabilities to the general education curriculum as well as aligning IEP goals with the content standards of the general education curriculum (Council for Exceptional Children, 2003). Finally, special educators needed to be highly qualified, which included being highly qualified general education teachers. NCLB, however, wound up punishing struggling schools when improvements were not met as well as precipitating the greatest involvement in education by the federal government (Saultz et al., 2019).

Individuals with Disabilities Education Improvement Act of 2004

On November 19, 2004, Congress passed legislation reauthorizing the Individuals with Disabilities Education Act. The version of this law is called the Individuals with Disabilities Education Improvement Act of 2004, commonly referred to as IDEA 2004. President George W. Bush signed this bill (PL 108–446) into law on December 3, 2004. Note, IDEA has not been reauthorized since 2004, although revisions to the regulations have been made.

Some of the significant issues addressed in the most recent reauthorization of IDEA—IDEA 2004—are portrayed in Table 2.3.

TABLE 2.3 ■ A Snapshot of IDEA 2004 Highlights

- Modified criteria for identifying students with specific learning disabilities. Schools can now elect to use a process that determines whether the student responds to empirically validated, scientifically based interventions—called response to intervention (RTI)
- Eliminates use of short-term objectives in individualized education programs (IEPs) except for students evaluated via alternate assessments that are aligned with alternate achievement standards
- IEPs must include a statement of the student's present level of academic achievement and functional performance; annual goals must be written in measurable terms
- Relaxes requirements for participation in IEP meetings
- Multiyear IEPs are permissible
- IEPs to incorporate research-based interventions
- Transition planning to begin with first IEP in effect once student reaches age 16
- Students with disabilities may be removed to an interim alternative educational setting for up to 45 school days for offenses involving weapons, drugs, or inflicting serious bodily injury
- All students are required to participate in all state- and districtwide assessments with accommodations or alternate assessments as stipulated in their IEP
- Special educators must be "highly qualified" according to individual state standards
- Resolution session required prior to a due process hearing
- Statute of limitations imposed on parents for filing due process complaints
- Modifies provision of student's native language and preferred mode of communication

Source: U.S. Department of Education.

The Every Student Succeeds Act maintains a focus on accountability, high standards, and student achievement.

Tom Williams/CQ-Roll Call, Inc./Getty Images

Every Student Succeeds Act

NCLB, which was the reauthorization of the ESEA, was again reauthorized. On December 10, 2015, President Barack Obama signed the Every Student Succeeds Act (ESSA; PL 114–95) into law. This legislation was the seventh reauthorization of the historic Elementary and Secondary Education Act (PL 89–10) initially passed in 1965. The aim of the ESSA was to preserve the spirit and intent of No Child Left Behind while remediating some of the perceived flaws and deficiencies voiced by legislators, educators, policymakers, school administrators, and parents. These issues included too much focus on adequate yearly progress, punishing schools when improvements were not made; too much emphasis on testing in education; and too much involvement by the federal government in education (Saultz et al., 2019). Although this new legislation retained an emphasis on accountability, high standards, and student achievement, the mechanisms for accomplishing these aims changed. Some of the provisions of this act include the following:

- Requires the annual testing of students in third through eighth grades in math and reading and once in high school in addition to a science test across elementary, middle, and high school; however, the adequate yearly progress provision has been repealed and replaced by a statewide accountability system.
- Allows states to adopt the Common Core State Standards but does not require their adoption.
- Eliminates "highly qualified" teacher status.
- Maintains the requirement that achievement data be disaggregated according to the student's disability, socioeconomic status, race, ethnicity, and English language ability.
- Identifies low-performing schools as those whose assessment scores are in the bottom 5%, schools that have a high school graduation rate of less than 67%, or schools where subgroups of students consistently underperform. In these situations, state intervention is possible, although specific remedies are not defined.
- For individuals with disabilities, the legislation ensures access to the general education curriculum, accommodations on assessments, and the use of universal design for learning principles, in addition to evidence-based interventions in schools where subgroups consistently underperform (Council for Exceptional Children, 2019).

Charter Schools and Students With Disabilities

We need to briefly mention an educational phenomenon that is growing in popularity in some communities across the United States—charter schools. According to the National Center for Special Education in Charter Schools (2019), "The charter school concept emerged from a deep commitment to quality and equity; schools of choice operating autonomously from traditional districts would serve as incubators of innovation" (para. 1). These schools are one example of school choice initiatives. In the 2020–2021 school year, charter schools numbered over 7,800, serving nearly 3.7 million students across 45 states, Guam, and the District of Columbia, representing 7.5% of all public school students (Charter School Data Dashboard, 2023). Because charter schools are public schools, they are required to follow the mandates found in the IDEA legislation and Section 504 of the Rehabilitation Act of 1973, as well as the requirements of the Americans with Disabilities Act (see the following discussion on these laws). Despite their autonomy and the use, in some settings, of successful instructional models, charter schools have failed to benefit individuals with exceptional learning needs. Charter schools enroll fewer students with disabilities than typical public schools (Rhim, 2016), and it is believed by some that charter schools do not offer quality educational experiences to students with special needs or access to innovative educational experiences. The challenge confronting educators and other stakeholders is "to increase access and develop exemplary programs for students with disabilities" (National Center for Special Education in Charter Schools, 2019, para. 3). Hopefully, these efforts will be fruitful, and *all* students will benefit from creative thinking and powerful instructional programs.

CIVIL RIGHTS LEGISLATION

The pieces of legislation that we just examined are representative special education laws (the exception being PL 107–110). In this section, we will explore civil rights legislation that has impacted special education.

Section 504 of the Rehabilitation Act of 1973

PL 93–112, the Rehabilitation Act of 1973, however, is a *civil rights* law. Section 504 of this enactment was the first public law specifically aimed at protecting children and adults against discrimination due to a disability. It said that no individual can be excluded, solely because of their disability, from

participating in or benefiting from any program or activity receiving federal financial assistance, which includes schools (Council for Exceptional Children, 1997).

Unlike IDEA, this act employs a functional rather than categorical model for determining a disability. According to this law, individuals are eligible for services if they

1. have a physical or mental impairment that substantially limits one or more major life activities,
2. have a record of such an impairment, or
3. are regarded as having such an impairment by others.

"Major life activities" are broadly defined and include, for example, walking, seeing, hearing, working, and learning.

To fulfill the requirements of Section 504, schools must make "reasonable accommodations" for students with disabilities so that they can participate in educational programs provided to other students. Reasonable accommodations might include modifications of the general education program, the assignment of a paraprofessional, a behavior management plan, or the provision of special study areas (Smith & Patton, 2007). Students may also receive related services such as occupational or physical therapy even if they are not receiving a special education through IDEA.

Because the protections afforded by this law are so broad, an individual who is ineligible for a special education under IDEA may qualify for special assistance or accommodations under Section 504. Students with severe allergies, for example, are eligible for services via Section 504, although it is unlikely that they would be eligible to receive services under IDEA. All students who are eligible for a special education and related services under IDEA are also eligible for accommodations under Section 504; the converse, however, is *not* true.

As with IDEA, there is a mandate contained within Section 504 to educate students with special needs with their typical peers to the maximum extent possible. In addition, schools are required to develop an accommodation plan (commonly called a "504 plan") customized to meet the unique needs of the individual. This document should include a statement of the student's strengths and needs, a list of necessary accommodations, and the individual(s) responsible for ensuring implementation. The purpose of this plan is to enable the student to receive a free appropriate public education (Gargiulo & Metcalf, 2023).

Finally, unlike IDEA, which offers protections for students only between the ages of 3 and 21, Section 504 covers the individual's life span. See Table 2.4 for a comparison of some of the key provisions of IDEA and Section 504.

TABLE 2.4 ■ A Comparison of Key Features of IDEA and Section 504

Provision	IDEA	Section 504
Purpose	Provides a free appropriate public education to children and youth with specific disabilities.	Prohibits discrimination on the basis of a person's disability in all programs receiving federal funds.
Ages covered	Individuals 3–21 years old.	No age restriction.
Definition of disability	Twelve disabilities defined according to federal regulations plus state/local definition of *developmentally delayed.*	Broader interpretation of a disability than found in IDEA—a person with a physical or mental impairment that substantially limits a major life activity, who has a record of such impairment, or who is regarded as having such impairment.
Funding	States receive some federal dollars for excess cost of educating students with disabilities.	Because this is a civil rights law, no additional funding is provided.
Planning documents	Individualized education program (IEP).	Accommodation plan (commonly referred to as a "504 plan").

Provision	IDEA	Section 504
Assessment provisions	A comprehensive, nondiscriminatory eligibility evaluation in all areas of suspected disability conducted by a multidisciplinary team; reevaluations every 3 years unless waived.	Eligibility determination requires nondiscriminatory assessment procedures; requires reevaluation prior to a "significant change" in placement.
Due process	Extensive rights and protections afforded to student and parents.	Affords parents impartial hearing, right to inspect records, and representation by counsel. Additional protections at discretion of local school district.
Coordination	No provision.	School district required to identify a 504 coordinator.
Enforcement	U.S. Department of Education, Office of Special Education Programs.	Office for Civil Rights, U.S. Department of Education.

Public Law 101–336 (Americans with Disabilities Act)

Probably the most significant civil rights legislation affecting individuals with disabilities, the Americans with Disabilities Act (ADA), was signed into law on July 26, 1990, by President George H. W. Bush, who stated, "Today, America welcomes into the mainstream of life all people with disabilities. Let the shameful wall of exclusion finally come tumbling down." This far-reaching enactment, which parallels Section 504 of PL 93–112, forbids discrimination against person with disabilities in both the public and private sectors. Its purpose, according to Turnbull (1993), is to "provide clear, strong, consistent, and enforceable standards prohibiting discrimination against individuals with disabilities without respect for their age, nature or extent of disability" (p. 23).

The Americans with Disabilities Act requires that mass transit systems be accessible to citizens with disabilities.

Jeffrey Greenberg/Universal Images Group via Getty Images

The ADA goes far beyond traditional thinking of who is disabled and embraces, for instance, people with AIDS, individuals who have successfully completed a substance abuse program, and a person with cosmetic disfigurements. In fact, any person with an impairment that substantially limits a major life activity is covered by this legislation. It extends protections and guarantees of civil rights in such diverse arenas as private sector employment, transportation, telecommunications, public and privately owned accommodations, and the services of local and state government.

Examples of the impact of this landmark legislation include the following:

- Employers of 15 or more workers must make "reasonable accommodations" so that an otherwise qualified individual with a disability is not discriminated against. Accommodations might include a Braille computer keyboard for a worker who is visually impaired or wider doorways to allow easy access for an employee who uses a wheelchair. Furthermore, hiring, termination, and promotion practices may not discriminate against an applicant or employee who has a disability.
- Mass transit systems, such as buses, trains, and subways, must be accessible to citizens with disabilities.
- Hotels, fast-food restaurants, theaters, hospitals, early childhood centers, banks, dentists' offices, retail stores, and the like may not discriminate against individuals with disabilities. These facilities must be accessible, or alternative means for providing services must be available.
- Companies that provide telephone service must offer relay services to individuals with hearing or speech impairments.

This legislation means a more secure and equitable future for adolescents with disabilities as they prepare to leave high school and transition to the world of adulthood as independent citizens able to participate fully in all aspects of community life.

Public Law 110–325 (Americans with Disabilities Act Amendments of 2008)

On September 25, 2008, President George W. Bush signed into law the Americans with Disabilities Act Amendments. PL 110–325 became effective on January 1, 2009. Commonly called ADAA, this legislation revises the definition of a disability in favor of a broader interpretation, thereby extending protections to greater numbers of individuals. In fact, this law expressly overturned two Supreme Court decisions that had previously limited the meaning of the term *disability*. Additionally, ADAA expands the definition of "major life activities" by including two noninclusive lists, the first of which includes activities not expressly stipulated, such as reading, concentrating, and thinking. The second list includes major bodily functions—for example, functions of the immune system or neurological functioning (U.S. Equal Employment Opportunity Commission, n.d.). The act also states that the interpretation of "substantial limitation" must be made without regard to the ameliorative effects of mitigating measures like medication or medical equipment. (The only stated exception is eyeglasses or contact lenses.)

Changes incorporated in this legislation also apply to students eligible for protections under Section 504 of PL 93–112. According to Zirkel (2009), "The overall effect is obviously to expand the number and range of students eligible under Section 504" (p. 69). A student, however, cannot be "regarded as" having a disability if their disability is minor or transitory (a duration of 6 months or less). It is anticipated that the new ADAA eligibility standards will have a significant impact on special education. "IDEA eligibility teams will need to closely coordinate with Section 504 eligibility teams not only when determining that a student is ineligible for initial services under IDEA but also upon exiting the student from an IEP" (Zirkel, 2009, p. 71).

IDENTIFICATION AND ASSESSMENT OF INDIVIDUAL DIFFERENCES

One of the distinguishing characteristics of our field is the individuality and uniqueness of the students we serve. There is considerable wisdom in the maxim, "No two children are alike." Experienced educators will quickly tell you that even though students may share a common disability label, such as *learning disabled* or *visually impaired*, that is where the similarity ends. These students are likely to be as different as day and night. Of course, the individuality of our students, both typical and atypical, has the potential for creating significant instructional and/or management concerns for the classroom teacher. Recall from Chapter 1 the types of students enrolled in Mr. Thompson's fifth-grade classroom. Today's schools are serving an increasingly diverse student population. At the same time, there is greater cooperation and more shared responsibility between general and special educators as they collectively plan appropriate educational experiences for all learners.

When teachers talk about the individuality of their students, they often refer to **interindividual differences**. These differences are what distinguish each student from their classmates. Interindividual differences are differences *between* students. Examples might include distinctions based on height, reading ability, athletic prowess, or intellectual competency. Some interindividual differences are more obvious and of greater educational significance than others.

Interindividual differences are frequently the reason for entry into special education programs. One child might be significantly above (or below) average in intellectual ability; another might exhibit a significant degree of hearing loss. Categorization and placement decision-making by school personnel revolve around interindividual differences. Stated another way, school authorities identify, label, and subsequently place a student in an instructional program on the basis of the student's interindividual differences.

However, not all students in a given program are alike. Children also exhibit **intraindividual differences**—a unique pattern of strengths and needs. Intraindividual differences are differences

within the child. Instead of looking at how students compare with their peers, teachers focus on the individual's abilities and limitations. We should point out that this is a characteristic of all students, not just those enrolled in special education programs. For example, Victoria, who is the best artist in her eighth-grade class, is equally well known for her inability to sing. One of her classmates, Melinda, has a learning disability. Her reading ability is almost 3 years below grade level, yet she consistently earns very high grades in math.

Intraindividual differences are obviously of importance to teachers. A student's IEP reflects this concern. Assessment data, derived from a variety of sources, typically profile a student's strengths and needs. This information is then used in crafting a customized instructional plan tailored to meet the unique needs of the learner.

REFERRAL AND ASSESSMENT FOR SPECIAL EDUCATION

"Evaluation [assessment] is the gateway to special education but referral charts the course to the evaluation process" (Turnbull et al., 2006, p. 232). Litigation, IDEA requirements, and today's best practices serve as our road map as we travel along the evaluation pathway to providing appropriate educational experiences for students with disabilities. This journey from referral to assessment to the development of an IEP and eventual placement in the most appropriate environment is a comprehensive process incorporating many different phases. Figure 2.2 illustrates this process. In the following sections, we examine several of the key elements involved in developing individualized program plans.

Prereferral

Although evaluation may be the gateway to special education, a great deal of activity occurs prior to a student's ever taking the first test. Careful scrutiny of our model reveals an intervention strategy known as **prereferral intervention**, which occurs prior to initiating a referral for possible special education services. The purpose of this strategy is to reduce unwarranted referrals while providing individualized assistance to the student without the benefit of a special education. Although not mandated by IDEA, prereferral interventions have become increasingly common over the past two decades. In fact, IDEA 2004 permits the use of federal dollars to support these activities. Many states either require or recommend the use of this tactic with individuals suspected of having a disability.

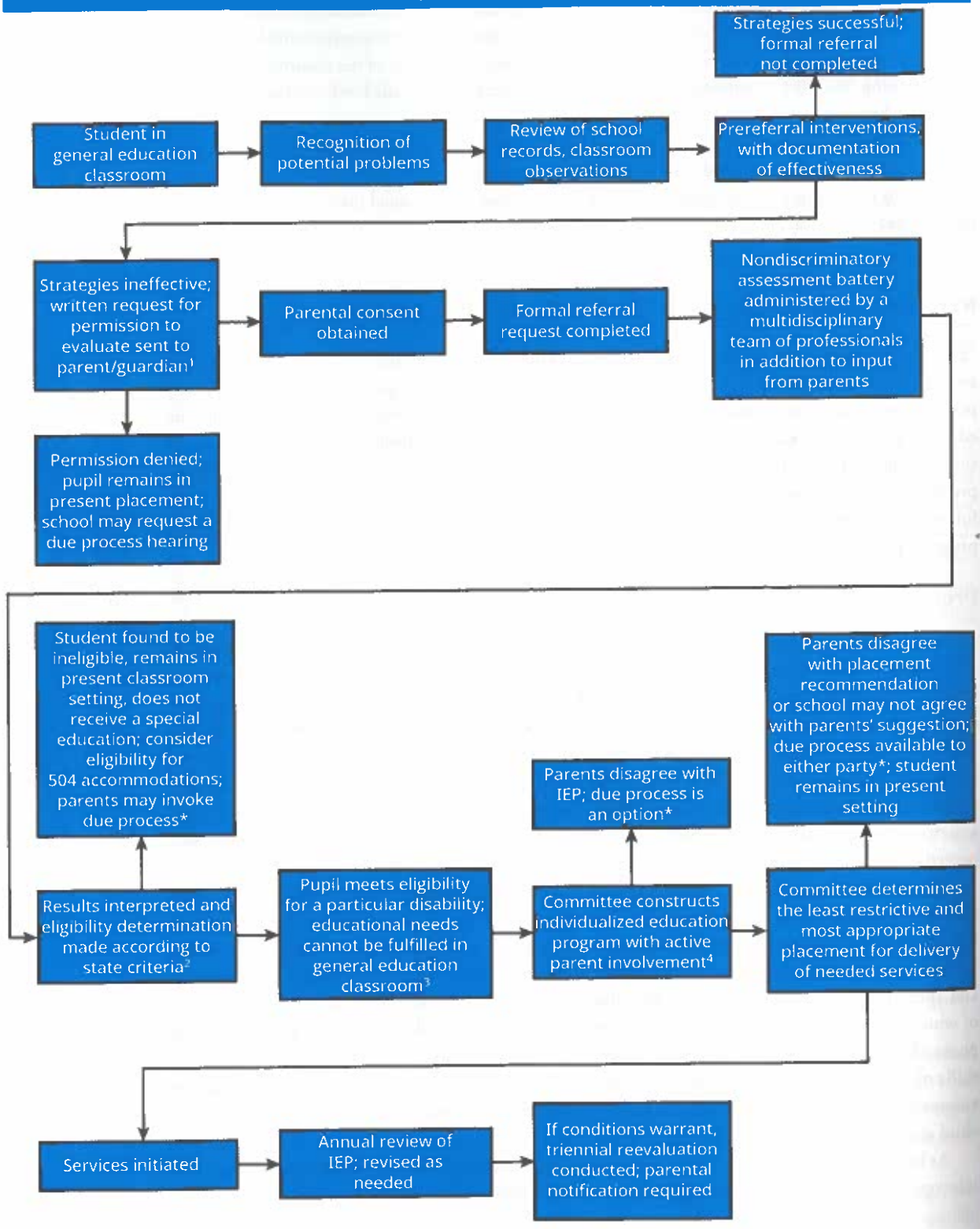
Prereferral interventions are preemptive by design. They call for collaboration between general educators and other professionals for the express purpose of developing creative, alternative instructional and/or management strategies designed to accommodate the particular needs of the learner. This process results in shared responsibility and joint decision-making among general and special educators, related service providers, administrators, and other school personnel, all of whom possess specific expertise; the student's parents typically do not participate in this early phase. The child's success or failure in school no longer depends exclusively on the pedagogical skills of the general educator; rather, it is now the responsibility of the school-based intervention assistance team (also commonly known as a teacher-assistance team, instructional support team, or child study team).

As beneficial as this strategy often is, it is not always successful. Detailed documentation of these intervention efforts provides a strong justification for the initiation of a formal referral.

Referral

A **referral** is the first step in a long journey toward receiving a special education. As we have just seen, a referral may start as a result of unsuccessful prereferral interventions, or it may be the outcome of **child-find** efforts (IDEA-mandated screening and identification of individuals suspected of needing special education).

FIGURE 2.2 ■ A Procedural Decision-Making Model for the Delivery of Special Education Services



1. IDEA does not mandate parental consent for referral but does require consent for evaluation.
2. Eligibility determination must occur within 60 days of referral.
3. If parents refuse consent for a special education, the school district is not responsible for providing a free appropriate public education.
4. The IEP must be developed within 30 days of eligibility determination.

* Mandatory resolution session required prior to a due process hearing.

Simply stated, a referral is a written request to evaluate a student to determine whether the child has a disability. Typically, a referral begins with a general educator; it may also be initiated by a school administrator, a related services provider, a concerned parent, or another individual. Referrals typically arise from a concern about the child's academic achievement and/or social/behavioral problems. In some instances, a referral may be initiated because of a student's cultural or linguistic background; it may even be the result of problems caused by inappropriate teacher expectations or poor instructional strategies. Thus, the reasons for the referral may not always lie within the student. This is one reason why prereferral intervention strategies are so important. Not all referrals for special education services result in placement; many children are found to be ineligible for a variety of reasons.

Referral forms vary in their format. Generally, in addition to student demographic information, a referral must contain detailed reasons as to why the request is being made. Teachers must clearly describe the student's academic and/or social performance. Documentation typically accompanies the referral and may include test scores, checklists, behavioral observation data, and actual samples of the student's work. Teachers need to paint as complete a picture as possible of their concern(s), as well as their efforts to rectify the situation.

In most schools, the information that has been gathered is then reviewed by a committee, often known as the child study committee, the special services team, or another such name. The composition of this group of professionals varies but typically includes an administrator, a school psychologist, and experienced teachers. Other personnel may also be involved, depending on the nature of the referral. It is the job of this committee to review the available information and decide whether further assessment is warranted. If the team decides to proceed, a written request for permission to evaluate is sent to the child's parent(s). School authorities *must* obtain permission from the parent/guardian before proceeding with a formal evaluation. Interestingly, IDEA does not require parental consent for referrals. We believe, however, that it is wise to notify parents that a referral is being initiated, explain the reasons for the referral, and solicit their input and cooperation in the referral process.

Assessments can be conducted at a young age and must be individualized and comprehensive.

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Assessment

The first step in determining whether a student has a disability and is in need of a special education is securing the consent of the child's parent(s)/guardian(s) for the evaluation. As noted previously, this step is mandated by IDEA as part of the procedural safeguards protecting the legal rights of parent(s)/guardian(s). Under the provisions of IDEA, school officials must notify the student's parent(s)/guardian(s), in their native language, of the school's intent to evaluate (or refusal to evaluate) the student and the rationale for this decision; they must explain the assessment process and alternatives available to the parent(s)/guardian(s), such as the right to an independent evaluation of their son or daughter. Many schools automatically send parent(s)/guardian(s) a statement of their legal rights when initial permission to evaluate is sought.

Assessment, according to Gargiulo and Metcalf (2023), is a generic term that refers to the process of gathering information about a student's strengths and needs. Educational assessment can rightly be thought of as an information-gathering and decision-making process.

One of the goals of the assessment process is to obtain a complete profile of the student's abilities and their needs. By law (IDEA), this requires the use of a multidisciplinary team of professionals, of which one member must be a teacher. In practice, some school districts are fulfilling this mission by establishing inter- and transdisciplinary assessment teams. Regardless of the model adopted by the school district, the team is responsible for developing an individualized and comprehensive assessment

package that evaluates broad developmental domains (cognitive, academic achievement) as well as the specific areas of concern noted on the referral, such as social/emotional problems or suspected visual impairments.

Successful accomplishment of this task dictates the use of both formal and informal assessment tools. Once again, IDEA is very clear about this issue: No one procedure may be used as the sole basis of evaluation; a multitude of tests is required. IDEA regulations further require that the evaluations be presented in the student's native language or, when necessary, via other modes of communication such as sign language or Braille for students with a sensory impairment. Additionally, the selection and administration of the assessment battery must accurately reflect the child's aptitude and achievement and not penalize the student because of their impairment in sensory, manual, or speaking skills. The accompanying Insights feature describes some accommodations that may be needed for accurate assessment.

School psychologists, educational diagnosticians, and other professionals responsible for evaluating the student have a wide variety of assessment instruments at their disposal. Evaluators attempt to gauge both inter- and intraindividual differences by using both norm- and criterion-referenced assessments. Simply stated, *norm-referenced assessments* are standardized tests and are linked to interindividual differences. Norm-referenced tests compare a student's performance with that of a representative sample of children, providing the evaluator with an indication of the student's performance relative to other individuals of similar chronological age. Data are typically presented in terms of percentile ranks, stanines, or grade-equivalent scores. Data gleaned from norm-referenced tests provide limited instructional information. In contrast, *criterion-referenced assessments* are associated with intraindividual differences and can provide data that are useful for instructional planning. In this type of assessment procedure, a student's performance on a task is compared to a particular level of mastery. The criterion level is typically established by the classroom teacher. Criterion-referenced assessments are especially helpful, according to Gargiulo and Metcalf (2023), in pinpointing the specific skills that the student has mastered as well as determining what skills necessitate additional instruction. Teachers are concerned with the individual's pattern of strengths and needs rather than how the student compares with their classmates.

As mentioned earlier, evaluators must put together a complete educational portrait of the student's abilities. This frequently requires multiple sources of information, which typically include standardized tests, work samples, and observational data, among other forms of input. Table 2.5 summarizes some of the types of assessments increasingly being used by evaluation specialists to complement data derived from norm-referenced tests.

TABLE 2.5 ■ Emerging Sources of Assessment Information

Source	Description
Naturalistic observation	Documentation of qualitative as well as quantitative aspects of a young person's behavior in the natural environment. Information may be recorded formally (rating scales, observational recording systems) or informally (anecdotal records, audio recordings). Data can be used to support or refute information gathered from other sources.
Interviews	Information obtained from significant individuals in a student's life—parents, teachers, older siblings, or the student themselves. Interviews are a planned and purposeful activity whose purpose is to gain insight or perspective on specific areas of interest, such as the child's background or possible reasons for behavioral problems. Format may be formal (interviewer follows a predetermined set of questions) or informal (interview proceeds according to the individual's responses). Data may be gathered orally or in writing.
Work samples	Evidence of a student's actual classroom performance, typically focused on particular skill development. Sometimes referred to as a permanent product. Spelling tests, arithmetic fact sheets, and handwriting samples are examples of this information source. Work samples are especially useful when planning instructional intervention and modification. Requires the teacher to think diagnostically and look, for example, at error patterns or clarity of directions.
Portfolios	A type of authentic assessment, portfolios are an outgrowth of the familiar work folder concept. They include a wide range of examples of a student's emerging abilities and accomplishments over time. Qualitative and quantitative indicators of performance might include writing samples, audio/video recordings, worksheets, drawings, photographs, or other forms of evidence. Useful for student self-assessment.

Instructional Programming and Appropriate Placement

When properly conducted, educational assessments lead to the development of meaningful IEPs and IFSPs. Measurable annual goals (and short-term objectives/benchmarks for students evaluated via alternate assessments) are crafted based on data gleaned from these evaluations. But first, the multidisciplinary team must determine whether the student is eligible to receive special education services according to specific state criteria. Eligibility standards differ from state to state, but most are framed around IDEA criteria.

INSIGHTS

ASSESSMENT ACCOMMODATIONS

In order to accurately portray a student's abilities and needs, assessment accommodations are sometimes necessary. Accommodations are changes in how students access and demonstrate learning without changing the standards they are working toward. Accommodations must be individualized; not all students require them, nor do students with the same disability require the same type of accommodations. The need for accommodations may change over time for an individual student; some individuals may require fewer accommodations in one situation, while in other situations, additional support is required. Listed as follows are examples of accommodations that individualized education program teams may find beneficial.

Presentation accommodations let students access assignments, tests, and activities in ways other than reading standard print. Students with print disabilities (inability to visually decode standard print because of a physical, sensory, or cognitive disability) may require a combination of these accommodations:

- Visual: large print, magnification devices, sign language, visual activity schedule
- Tactile: Braille, Nemeth code, tactile graphics
- Auditory: human reader, tablets, audio amplification devices, e-text, or audiobooks
- Visual and auditory: screen reader, video recording, descriptive video, talking materials

Response accommodations allow students to complete assignments, tests, and activities in different ways or solve or organize problems using an assistive device or organizer. Response accommodations include the following:

- Different ways to complete assignments, tests, and activities: expressing responses to a scribe through speech, sign language, or an assistive communication device; typing on or using speech to text on a computer or tablet; Braille; writing in a test booklet instead of on an answer sheet
- Materials or devices to solve or organize responses: calculators, spelling and grammar apps or tools embedded within computers or tablets, visual or graphic organizers

Timing and scheduling accommodations give students the time and breaks they need to complete assignments, tests, and activities and may change the time of day, day of the week, or number of days over which an activity takes place. These include

- Extended time
- Multiple or frequent breaks
- Changing the testing schedule or order of subtests
- Dividing long-term assignments

Setting accommodations change the location in which a student receives instruction or the conditions of the setting. Students may be allowed to sit in a different location than the majority of students to

- Reduce distractions
- Receive accommodations
- Increase physical access
- Use special equipment

Source: Adapted from IRIS Center Module on Accommodations (2024). Retrieved from https://iris.peabody.vanderbilt.edu/module/acc/#content

If team members, working in concert with the child's parent(s), determine that the student fails to qualify for a special education, we suggest developing intervention strategies and recommendations for accommodations to address the referral concerns. We believe this is necessary because the student will remain in their present placement—the general education classroom. Additionally, the team may wish to consider the student for a 504 accommodation plan if the student is eligible for such services. Parent(s)/guardian(s) must be sent written notification summarizing the evaluation and stating why their son or daughter is ineligible to receive a special education. If, however, it is determined that the student is eligible for a special education, the multidisciplinary team is then confronted with two monumental tasks: constructing the IEP/IFSP and determining the most appropriate placement for the student.

DESIGNING INDIVIDUALIZED INSTRUCTIONAL PROGRAMS

According to IDEA, each student identified by a multidisciplinary child study team as having a disability and in need of special education must have an individualized program of specially designed instruction that addresses the unique needs of the child and, in the case of infants and toddlers, the needs of the family as well. IEPs and IFSPs are guides to the design and delivery of customized services and instruction. They also serve as vehicles for collaboration and cooperation between parents and professionals as they jointly devise appropriate educational experiences.

Individualized Education Program

An individualized education program is part of an overall strategy designed to deliver services appropriate to the individual needs of students ages 3 and older. By the time we reach the IEP stage, the appropriate permissions have been gathered, assessments have been conducted, and a disability determination has been made. We are now at the point where the IEP is to be developed, followed by placement in the most appropriate and least restrictive setting. Bateman and Linden (2012) made a very important point about *when* the IEP is to be developed. They believed that IEPs are often written at the wrong time. Legally, the IEP is to be developed within 30 days following the evaluation and determination of the child's disability but *before* a placement recommendation is formulated. Placement in the least restrictive and most normalized setting is based on a completed IEP, not the other way around. An IEP should not be limited by placement options or the availability of services. We believe it is best to see the IEP as a management tool or planning vehicle that ensures that children with disabilities receive an individualized education appropriate to their unique needs. It also guides the integration of the general and special education curriculum (Diliberto & Brewer, 2012). This focus is in concert with both the intent and the spirit of IDEA.

IEPs are written by a team. At a minimum, participation must include a parent/guardian; the child's teachers, including a general education teacher and a special educator; a representative from the school district; and an individual able to interpret the instructional implications of the evaluation. When appropriate, the student, as well as other professionals who possess pertinent information or whose expertise is desired, may participate at the discretion of the parent or school. Parents have a legal right to participate meaningfully in this planning and decision-making process; they serve as the child's advocate. Although IDEA mandates a collaborative role for parents, it does not stipulate the degree or extent of their participation.

IEPs will vary in their format and degree of specificity. Government regulations do not specify the level of detail considered appropriate or stipulate how the IEP is to be constructed—only that it be a written document. What is specified are the components (see the Insights feature).

As stated previously, an IEP is, in essence, a management tool that stipulates *who* will be involved in providing a special education, *what* services will be offered, *where* they will be delivered, and for *how long*. In addition, an IEP gauges *how successfully* goals have been met. Although the IEP does contain a measure of accountability, it is not a legally binding contract; schools are not liable if goals are not achieved. Schools are liable, however, if they do not provide the services stipulated in the IEP. IEPs are to be reviewed annually, although parents may request an earlier review. A complete reevaluation of the

student's eligibility for special education must occur every 3 years. PL 108–446 waives this requirement, however, if both the parents and school officials agree that such a review is not necessary.

IEPs are not meant to be so detailed or complete that they serve as the entire instructional agenda, nor are they intended to dictate what the individual is taught. They do have to be individualized, however, and address the unique learning and/or behavioral requirements of the student. It is for this reason that we find fault with the growing reliance on computer-generated goals and objectives. Commonplace today is the use of IEP software programs, which assist educators in constructing, editing, and managing IEPs. This includes dropdown menu options for accommodations, among other elements.

INSIGHTS

ELEMENTS OF A MEANINGFUL INDIVIDUALIZED EDUCATION PROGRAM

Current Performance. A statement of the student's present levels of educational and functional performance, including how the student's disability affects their involvement and progress in the general education curriculum or, for preschoolers, how the disability affects participation in age-appropriate activities.

Goals. A statement of measurable annual goals (both functional and academic) that address the student's involvement and progress in the general education curriculum as well as the student's other education needs; short-term objectives or benchmarks are required for students who take alternate assessments aligned to alternate achievement standards.

Special Education and Related Services. A statement of special education, related services, and supplementary aids and services (based on peer-reviewed research) to be provided, including program modifications or supports necessary for the student to advance toward attainment of annual goals; to be involved and progress in the general education curriculum, extracurricular activities, and nonacademic activities; and to be educated and participate in activities with other children both with and without disabilities.

Participation With Typical Students. An explanation of the extent, if any, to which the student will *not* participate in the general education classroom.

Participation in State- and Districtwide Assessments. A statement of any individual modifications needed for the student to participate in a state- or districtwide assessment; if a student will not participate, a statement of why the assessment is inappropriate and how the student will be assessed.

Dates and Places. Projected date for initiation of services; expected location, duration, and frequency of such services.

Transition Services. Beginning at age 16, a statement of needed transition services identifying measurable postschool goals (training, education, employment, and, if appropriate, independent living skills), including a statement of interagency linkages and/or responsibilities.

Measuring Progress. A statement of how progress toward annual goals will be measured and how a student's parents (or guardians) will be regularly informed of such progress.

Age of Majority. Information provided at least 1 year before reaching the age of majority regarding transfer of rights to the student upon reaching the age of majority.

One of the challenges confronting the IEP team is ensuring that students have access to the general education curriculum as stipulated in both the 1997 and 2004 reauthorizations of IDEA. But what is the general education curriculum? In most instances, it is the curriculum that typical learners are exposed to, which is often established by individual state boards of education. The IEP must address how the student's disability affects their involvement in and ability to progress in the general education curriculum. The underlying assumption seems to be that even if a child is receiving a special education, they should engage

Parents play a crucial role in developing their child's individualized education program.

iStockPhoto/SDI Productions

in the general education curriculum. Documentation is required if the team believes that this curriculum is inappropriate for a particular student.

IDEA 2004 requires the IEP team to develop measurable annual goals while also emphasizing exposure to the general education curriculum. Goal statements are purposely broad. Their intent is to provide long-range direction to a student's educational program, not to define exact instructional tasks. Based on the student's current level of performance, goals are "written to reflect what a student needs in order to become involved in and to make progress in the general education curriculum" (Yell, 2019, p. 235). They represent reasonable projections or estimates of what the student should be able to accomplish within the academic year. They also answer the question, "What should the student be doing?" Annual goals can reflect academic functioning, social behavior, adaptive behavior, or life skills. Regardless of their emphasis, goal statements should be positive, student oriented, and relevant (Polloway et al., 2018).

Measurable annual goals should include the following five components:

- The student (the who)
- Will do what (the behavior)
- To what level or degree (the criterion)
- Under what conditions (the conditions)
- In what length of time (the time frame)

Quality IEPs largely depend on having well-written and appropriate goals (and objectives) that address the unique needs of the individual. IEPs are the primary means of ensuring that a specially designed educational program is provided. The accompanying Strategies for Effective Teaching and Learning feature provides a sample agenda for an IEP team meeting.

STRATEGIES FOR EFFECTIVE TEACHING AND LEARNING

SUGGESTED INDIVIDUALIZED EDUCATION PROGRAM MEETING AGENDA

- Welcome and introduction of participants and their respective roles
- Statement of purpose
- Review of previous year's IEP (except for initial placement) and accomplishments
- Discussion of student's present level of performance and progress:
  - Assessment information
  - Strengths and emerging areas
- Consideration of specific needs:
  - Instructional modifications and accommodations
  - Participation in state- and districtwide assessments
  - Related services
  - Assistive technology needs
  - Transition goals
  - Behavior intervention plan

  - Language needs for a student with limited English proficiency
  - Braille instruction for a student who is visually impaired
- Development of annual goals (and benchmarks if appropriate)
- Recommendations and justification for placement in a least restrictive environment
- Closing comments, securing of signatures
- Copies of IEP to all team members

Individualized Family Service Plan

The individualized family service plan is the driving force behind the delivery of early intervention services to infants and toddlers who are at risk or have a disability. The IFSP was originally conceived to focus on children younger than age 3, but recent changes in thinking now allow this document to be used with preschoolers who require a special education. This change was initiated by the federal government in an effort to minimize the differences between early intervention and preschool special education services; the government is now encouraging states to establish "seamless systems" designed to serve a young person from birth through age 5. As a result of this policy decision, states now have the authority to use IFSPs for preschoolers with special needs until the children enter kindergarten (Lipkin & Schertz, 2008).

Like an IEP, an IFSP is developed by a team consisting of professionals and the child's parents as key members. In addition, parents may invite other family members to participate, as well as an advocate. Typically, the service coordinator who has been working with the family, the professionals involved in the assessment of the student, and the service providers constitute the remainder of the group charged with the responsibility of writing the IFSP. The elements required for an IFSP, as stipulated in PL 108–446, are summarized in Table 2.6.

TABLE 2.6 ■ Comparable Components of an IEP and IFSP

Individualized Education Program	Individualized Family Service Plan
A statement of the child's present levels of academic achievement and functional performance, including involvement and progress in the general education curriculum	A statement of the infant or toddler's present levels of physical, cognitive, communication, social/emotional, and adaptive development
No comparable feature	A statement of the family's resources, priorities, and concerns
A statement of measurable annual goals, including benchmarks or short-term instructional objectives for children who take alternate assessments aligned to alternate achievement standards	A statement of measurable results or outcomes expected to be achieved for the infant or toddler and the family
A statement indicating progress toward annual goals and a mechanism for regularly informing parents/guardians of such progress	Criteria, procedures, and timelines used to determine the degree to which progress toward achieving the outcomes or results is being made
A statement of specific special education and related services and supplementary aids and services, based on peer-reviewed research, to be provided and any program modifications	A statement of specific early intervention services, based on peer-reviewed research, necessary to meet the unique needs of the infant or toddler and the family
An explanation of the extent to which the child will not participate in general education programs	A statement of the natural environments in which early intervention services will appropriately be provided, or justification, if not provided
Modifications needed to participate in state- or districtwide assessments	No comparable feature
The projected date for initiation of services and the anticipated duration, frequency, and location of services	The projected date for initiation of services and the anticipated duration of services
No comparable feature	The name of the service coordinator
At age 16, a statement of transition services needed, including courses of study in addition to measurable postsecondary goals	The steps to be taken to support the child's transition to other services at age 3

Source: Adapted from Individuals with Disabilities Education Improvement Act of 2004, Title 20 U.S. Code [U.S.C.] 1400 *et seq*, Part B Section 614 [d] [1] [A], and Part C Section 636 [d].

The IFSP was intentionally designed to preserve the family's role as primary caregiver. Well-constructed IFSPs, which are reviewed every 6 months, fully support the family members and encourage their active and meaningful involvement. This thinking is in keeping with an empowerment model (Turnbull et al., 2015) that views families as capable (with occasional assistance) of helping themselves. It allows parents to retain their decision-making role, establish goals, and assess their own needs. It is also in keeping with our support of an ecological perspective (Gargiulo & Kilgo, 2024), which argues that one cannot look at a child without considering the various systems and spheres of influence that provide support—in this instance, the infant or toddler's family and community.

Information obtained from the assessment of the family and data about the infant or toddler's developmental status are used to generate outcome statements or goals for the child and their family. Practitioners are increasingly emphasizing real-life or authentic goals for children with special needs (Johnson et al., 2015). These goals, which are based on the priorities and concerns of the family, are reflected in the IFSP's required outcome statements. Interventionists no longer teach skills in isolation; rather, goals are developed that are relevant to the daily activities of the young person and their families. These statements need to be practical and functional, reflecting real-life situations occurring in the natural environment.

SERVICE DELIVERY OPTIONS: WHERE A SPECIAL EDUCATION IS PROVIDED

Now that the IEP/IFSP team has decided *what* will be taught, it must decide *where* special education services will be provided. The issue of appropriate placement of children with disabilities has generated considerable controversy and debate. In fact, it has been a point of contention among special educators for almost 40 years. IDEA mandates that services be provided to students in the least restrictive setting—or, as Henry and Flynt (1990) called it, the most productive environment. The question confronting the team is, "What is the most appropriate placement for achieving the goals (outcomes) of the IEP (IFSP)?" The chosen setting must allow the student to reach their IEP (or IFSP) goals and work toward their potential.

It is at this point in our decision-making model that school authorities, in collaboration with the child's parent(s)/guardian(s), attempt to reach agreement about where the student will be served. The principle guiding this decision is known as the **least restrictive environment (LRE)**. This is a relative concept; it must be determined individually for each student. We interpret this principle to mean that students with disabilities should be educated in a setting that most closely approximates the general education classroom *and* still meets the unique needs of the individual. As we will see shortly, for a growing number of students, this setting is the general education classroom. The concept of LRE calls for maximum opportunity for meaningful involvement and participation with classmates who are not disabled. One of its inherent difficulties is the required balancing of maximum integration with the delivery of an appropriate education.

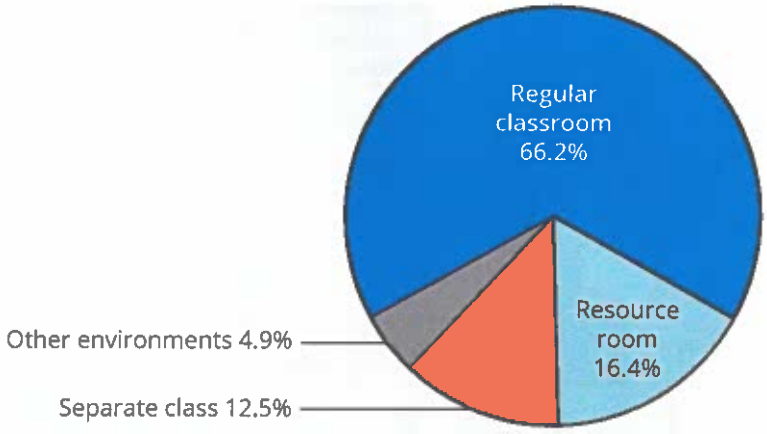
Educational Placements

The federal government annually monitors the different settings in which students with disabilities receive a special education. Figure 2.3 illustrates the percentage of students in the various educational environments recognized by the U.S. Department of Education. Table 2.7 describes six typical school settings serving individuals with special needs. We will report placement information in future chapters according to these environments.

A Cascade of Service Delivery Options

As we have just seen, the federal government recognizes that no one educational setting is appropriate for meeting the needs of all children with disabilities. Effective delivery of a special education requires an array or continuum of placement possibilities customized to the individual requirements of each

FIGURE 2.3 ■ Percentage of School-Age Children With Disabilities Served in Various Educational Settings



Source: U.S. Department of Education. (2023). *Forty-fourth annual report to Congress on the implementation of the Individuals with Disabilities Education Act, 2022.* U.S. Government Printing Office. p. 55.

Notes: Data are for students ages 5 to 21 enrolled in special education during the 2020–2021 school year. Other environments include separate schools, residential facilities, homebound/hospital environments, correctional facilities, and parentally placed in private schools. Information based on data from 48 states, Puerto Rico, the District of Columbia, Bureau of Indian Education schools, and outlying areas in addition to three freely associated states. Data for Louisiana and Iowa not included.

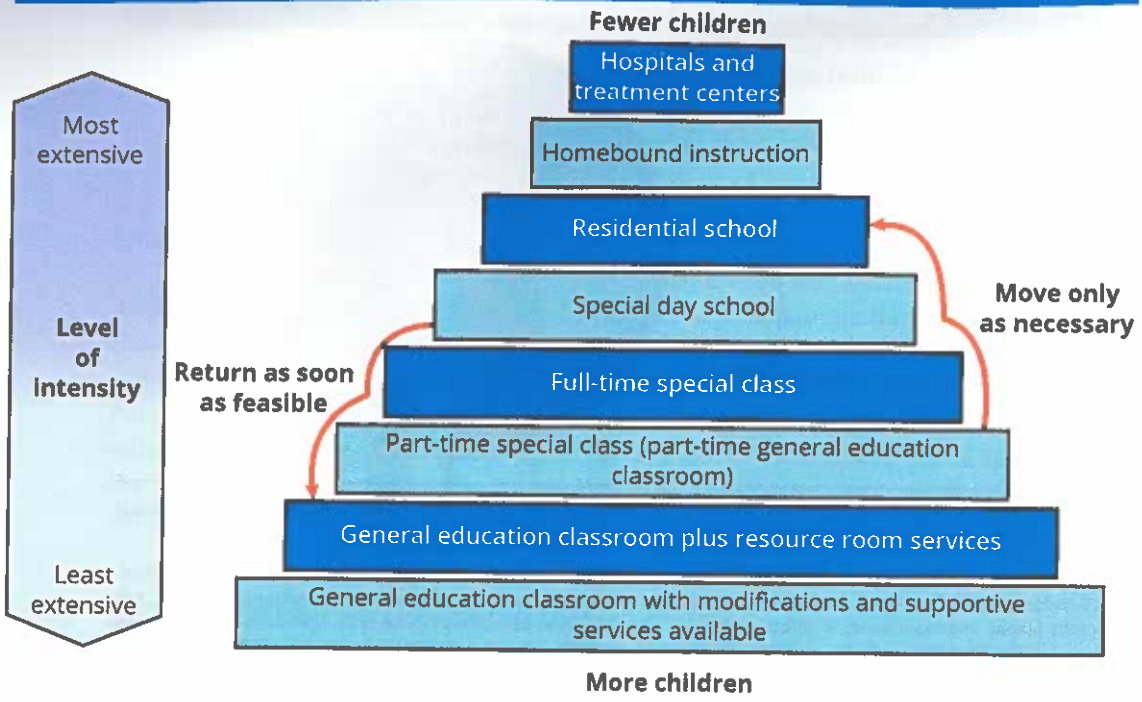
TABLE 2.7 ■ Definitions of Typical Educational Settings Serving School-Age Students With Disabilities

Setting	Definition
Regular classroom	Students who spend at least 80% of the school day in a regular or general education classroom.
Resource room	Students who receive special education and related services in the regular classroom between 40% and 79% of the school day. Students are "pulled out" of the regular classroom and receive specialized instruction or services in a separate classroom for limited periods of time. Services may be individualized or offered in small groups.
Separate class	Students who receive special education and related services in the regular classroom for less than 40% of the school day. Commonly known as a self-contained classroom wherein students, usually those with more extensive support needs, receive full-time instruction or, in a modified version, participate in nonacademic aspects of school activities. Classroom is located in typical school building.
Separate school	Students who receive special education and related services in a public or private separate day school for students with disabilities, at public expense, for more than 50% of the school day.
Residential facility	Students who receive a special education in a public or private residential facility, at public expense, 24 hours a day.
Homebound/hospital	Students placed in and receiving a special education in a hospital or homebound program.

Source: Adapted from U.S. Department of Education. (2000). *Twenty-second annual report to Congress on the implementation of the Individuals with Disabilities Education Act* (U.S. Government Printing Office). pp. II–14.

student. The concept of a continuum of educational services has been part of the fabric of American special education for almost five decades. Reynolds originally described the concept of a range of placement options in 1962. His thinking was later elaborated on and expanded by Deno (1970), who constructed a model offering a "cascade" or continuum of settings. A traditional view of service delivery options is portrayed in Figure 2.4.

FIGURE 2.4 ■ A Traditional View of Service Delivery Options



Source: Adapted from S. Graves, R. Gargiulo, and L. Studer, *Young Children: An Introduction to Early Childhood Education* (West, 1996), p. 398.

In this model, the general education classroom is viewed as the most normalized or typical setting; consequently, the greatest number of students are served in this environment. This placement would be considered the least restrictive option. Deviation from the general education classroom should occur only when it is educationally necessary for the student to receive an appropriate education. Each higher level depicted in Figure 2.4 represents a progressively more restrictive setting. Movement up the hierarchy generally leads to the delivery of more intensive services to children with more extensive support needs, who are fewer in number. However, intensive supports are now being provided in general education classrooms with increasing frequency. Environments at the upper levels are considered the most restrictive and least normalized, yet, as we will see shortly, they may be the most appropriate placement for a particular individual.

As originally conceived, the natural flow of this cascade of service delivery options would be in a downward movement from more restrictive settings to those viewed as least restrictive, such as the general education classroom with or without support services. Contemporary thinking, however, suggests that students begin in the general education classroom and ascend the model, reaching a level that meets their unique needs. A key feature of this model, too often overlooked, is that a particular placement is only temporary; flexibility or freedom of movement is what makes this model work. The settings must be envisioned as fluid rather than rigid. As the needs of the student change, so should the environment; this is why there is an array of service delivery possibilities. In our opinion, there is no one best educational placement for each and every student with disabilities. As individuals debate service delivery, one element that makes it more challenging is the inconsistent use of terminology. As frequently happens in arguments, people are often saying the same thing but using different words.

A Contemporary Challenge

At the present time, the field of special education is confronting the challenge of calls for greater inclusion of individuals with disabilities into all aspects of society, especially educational programs.

Federal law stipulates that, to the maximum extent appropriate, students with disabilities are to be educated with their typical classmates.

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Mainstreaming

The first potentially confusing term is mainstreaming, which first appeared on the educational scene more than 50 years ago. It evolved from an argument put forth by Dunn (1968), who, in a classic essay, questioned the pedagogical wisdom of serving children with mild intellectual disability in self-contained classrooms, which was then common practice. Other professionals soon joined with Dunn in his call for a more integrated service delivery model, resulting in the beginning of a movement away from isolated special classes as the placement of choice.

We define **mainstreaming**—or, in contemporary language, integration—as the social and instructional integration of students with disabilities into educational programs whose primary purpose is to serve typically developing individuals. It represents a common interpretation of the principle of educating children with disabilities in the least restrictive environment. Interestingly, the term *mainstreaming* itself never appears in any piece of federal legislation.

Integration involves providing the student with an appropriate education based on their unique needs. It is our opinion that policymakers never envisioned that mainstreaming would be interpreted to mean that *all* children with special needs must be placed in integrated placements; to do so would mean abandoning the idea of determining the most appropriate placement for a particular child. IDEA clearly stipulates that, to the maximum extent appropriate, children with disabilities are to be educated with their typical peers. We interpret this provision to mean that, for some individuals, an integrated setting, even with supplementary aids and services, might be an inappropriate placement in light of the child's unique characteristics. A least restrictive environment does not automatically mean 100% placement in general education settings. As educators, we need to make the distinction between appropriateness and restrictiveness. We recognize, as do many other special educators, that maximum integration with typically developing children is highly desirable and should be one of our major goals. The question is when, where, with whom, and to what extent individuals with disabilities are to be included.

Least Restrictive Environment

Least restrictive environment (LRE) is a legal term often interpreted to say individuals with disabilities are to be educated in environments as close as possible to the general education classroom setting. An LRE is not a place but a concept. Determination of the LRE is made individually for each child. An appropriate placement for one student could quite easily be inappropriate for another. The LRE is based on the student's educational needs, not on their disability.

Inherent within the mandate of providing a special education and/or related services within the LRE is the notion of a continuum of service delivery possibilities. Figure 2.5 reflects varying degrees of restrictiveness, or amount of available contact with typical learners. Being only with children with disabilities is considered restrictive; placement with peers without disabilities is viewed as least restrictive. As we ascend the continuum, the environments provide fewer and fewer opportunities for interaction with typically developing age-mates—hence the perception of greater restrictiveness. Despite a strong preference for association with students who are typical, this desire must be balanced by the requirement of providing an education appropriate to the unique needs of the individual. Consequently, an integrative environment may not always be the most appropriate placement option. Each situation must be individually assessed and decided on a case-by-case basis. The educational setting must meet the needs of the learner. The philosophy of the LRE guides rather than prescribes decision-making (Meyen, 1995).

FIGURE 2.5 ■ Balance Between LRE and an Appropriate Education

Regular Education Initiative

The third concept that requires our attention is the **regular education initiative (REI)**. REI is an important link in the evolution of the full inclusion movement. The term was introduced in 1986 by former assistant secretary of education (Office of Special Education and Rehabilitative Services) Madeleine Will, who questioned the legitimacy of special education as a separate system of education and called for a restructuring of the relationship between general (regular) and special education. She endorsed the idea of shared responsibility—a partnership between general and special education resulting in a coordinated delivery system (Will, 1986b). Will recommended general educators assume greater responsibility for students with disabilities. She envisioned a meaningful partnership whereby general and special educators would "cooperatively assess the educational needs of students with learning problems and cooperatively develop effective educational strategies for meeting those needs" (Will, 1986a, p. 415). Will (1986b) also believed educators must "visualize a system that will bring the program to the child rather than one that brings the child to the program" (p. 21). Few professionals would dispute that the delivery of special education services would be significantly enhanced if there were greater coordination, cooperation, and collaboration between general and special educators.

Full Inclusion

We see the movement toward full inclusion as an extension of REI and earlier thinking about where children with disabilities should be educated. We offer the following succinct interpretation: **Full inclusion** is a belief that *all* children with disabilities should be taught exclusively (with appropriate

supports) in general education classrooms at neighborhood schools—that is, in the same school and age-/grade-appropriate classrooms they would attend if they were not disabled. Successful implementation will require new thinking about curriculum design along with increased collaboration between general and special educators (Noonan & McCormick, 2014). Recall that Will (1986b) originally proposed this type of partnership in her regular education initiative. Fox and Ysseldyke (1997) considered full inclusion as a further attempt at operationalizing the concept of LRE. Figure 2.6 illustrates the evolution of this thought process.

FIGURE 2.6 ■ The Evolution of Placement Options for Children With Disabilities

Source: From R. Gargiulo and J. Kilgo, *An Introduction to Young Children With Special Needs*, 3rd ed. (Wadsworth/Cengage Learning, 2011), p. 144.

Although the trend in judicial interpretations is toward inclusionary placement (Yell, 2019), the LRE mandate does *not* require that all students be educated in general education classrooms or in their neighborhood schools. The framers of IDEA never pictured, according to Kauffman (1995), that the general education classroom located in the neighborhood school would be the least restrictive setting for all students. In fact, policymakers believed that a cascade of placement options would be required in order to provide an appropriate education for students with disabilities.

Advocates of full inclusion (Downing, 2008; Kennedy & Horn, 2004; Peterson & Hittie, 2010) argue that the present pullout system of serving students with special needs is ineffective. They contend that "the diagnostic and instructional models, practices, and tools associated with the EHA [PL 94–142] and mainstreaming are fundamentally flawed, particularly for students considered to have mild to moderate disabilities" (Skrtic, 1995, p. 625). Children are labeled and stigmatized, their programming is frequently fragmented, and general educators often assume little or no ownership for students in special education (a "your" kids versus "my" kids attitude). Placement in a general education classroom, with a working partnership between special education teachers and general educators, would result in a better education for all students, not just those with special needs, and would occur within the context of the least restrictive environment.

When correctly instituted, full inclusion is characterized by its virtual invisibility. Students with disabilities are not segregated but dispersed into classrooms they would normally attend if they were not disabled. They are seen as full-fledged members of, not merely visitors to, the general education classroom. Special educators provide an array of services and supports in the general education classroom alongside their general education colleagues, often using strategies such as cooperative teaching in an effort to meet the needs of the students. Table 2.8 summarizes the key components of most models of full inclusion.

Full inclusion results in students with disabilities being seen as full-fledged members of the general education classroom.

Jose Luis Pelaez Inc/DigitalVision/Getty Images

TABLE 2.8 ■ Representative Components of Full Inclusion Models

Component	Description
"Home school" attendance	Defined as the local school the child would attend if they did not have a disability.
Natural proportion at the school site	The percentage of children with special needs enrolled in a particular school is in proportion to the percentage of students with exceptionalities in the entire school district; in general education classes, this would mean approximately two to three students with disabilities.
Zero rejection	All students are accepted at the local school, including those with severe impairments; students are not screened out or grouped separately because of their disability.
Age-/grade-appropriate placement	A full inclusion model calls for serving children with special needs in general education classrooms according to their chronological age rather than basing services on the child's academic ability or mental age.

CHAPTER IN REVIEW

Litigation and Legislation Affecting Special Education (Learning Objective 2.1)

- National and state laws, along with their subsequent interpretation by the courts, have certainly helped shape and define contemporary special education policy and procedures.

Educational Reform: Standards-Based Education (Learning Objective 2.2)

- The No Child Left Behind Act is an example of federal legislation that focuses on educational accountability. All students, including those with a disability, are expected to demonstrate proficiency in key academic subjects.
- The reauthorization of the Individuals with Disabilities Education Act in 2004 (PL 108–446) aligns this legislation with some of the provisions of the No Child Left Behind Act. In addition, substantial changes occurred in the following areas of the law: the IEP process, the identification of an individual for a possible learning disability, teacher qualifications, student discipline, due process procedures, the evaluation of students, and participation of individuals with disabilities in state- and districtwide assessments.

Civil Rights Legislation (Learning Objective 2.3)

- Section 504 of PL 93–112 is the first federal law specifically aimed at protecting children and adults against discrimination due to a disability.
- The Americans with Disabilities Act (PL 101–336), which parallels Section 504 of PL 93–112, forbids discrimination against individuals with disabilities in both the public and private sectors of society.

Identification and Assessment of Individual Differences (Learning Objective 2.4)

- Interindividual differences are those characteristics that distinguish each student from their classmates. Interindividual differences might include distinctions based on height, intelligence, or gross motor skills.
- Intraindividual differences are differences within a particular student—that child's unique profile of strengths and needs.

Referral and Assessment for Special Education (Learning Objectives 2.5)

- When properly conducted, educational assessments lead to the development of meaningful individualized education programs (IEPs) and individualized family service plans (IFSPs).
- Multidisciplinary teams use norm- and criterion-referenced tests to determine if a student is eligible to receive a special education and/or related services.

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3 CULTURAL AND LINGUISTIC DIVERSITY AND EXCEPTIONALITY

LEARNING OBJECTIVES

After reading Chapter 3, you should be able to:

- 3.1 **Explain** how cultural and linguistic diversity is affecting U.S. classrooms.
- 3.2 **Identify** six instructional options for teaching students who are bilingual.
- 3.3 **Summarize** the issues associated with the disproportionate representation of culturally and linguistically diverse learners in special education.
- 3.4 **Describe** the challenges confronting educators when assessing students from culturally and linguistically diverse groups.
- 3.5 **Discuss** instructional strategies for students with exceptionalities who are culturally and linguistically diverse.

The United States is an enormously diverse and pluralistic society—an amalgamation of different races, languages, folkways, religious beliefs, traditions, values, and even foods and music. As a nation, we greatly benefit from this cultural richness; it is a defining characteristic of the United States and one of its great strengths. Perhaps nowhere else is this diversity more noticeable than in our schools.

Although in many instances, we value and celebrate this diversity, all too often, cultural differences result in prejudice and stereotypes as well as outright discrimination and unequal opportunities. Unfortunately, this statement is a valid characterization of some U.S. schools. In some of our public schools, children from minority groups are too often seen as less than capable and/or difficult to teach. This situation is unacceptable and inexcusable. As educators working in increasingly culturally diverse environments, we need to model respect for and sensitivity to the cultural and linguistic characteristics represented by our students and their families.

The goal of this chapter is to examine the link between cultural and linguistic diversity and exceptionality. We will explore the historical patterns of American reaction to and acceptance of people from other lands. We will discuss issues of multicultural and bilingual education and consider the multitude of challenges confronting teachers who work with students with special needs from culturally and linguistically diverse backgrounds (see the Insights feature).

CULTURAL DIVERSITY: THE CHANGING FACE OF A NATION

The United States is made up of people from many different lands; in fact, only about 2% of Americans are native (U.S. Department of Health and Human Services, 2023). A vast number of Americans are descended from the millions of immigrants who entered the United States through Ellis Island, located in lower New York Harbor, in the latter part of the 19th century and the early decades of the 20th century. Immigration to the United States has continued since then, but the countries of origin have shifted from Europe to Latin America and Asia. In 2021, approximately 45.3 million immigrants lived in the United States, accounting for about 13.6% of the total U.S. population (Ward & Batalova, 2023).

What are the implications of the following estimates and projections for our schools and classroom practices?

- By the year 2027, students of color are projected to make up 55% of elementary and secondary school enrollment in the United States (Gollnick & Chinn, 2021).
- By the year 2060, the U.S. population is projected to be approximately 44% Anglo, 28% Latino, 13% Black, 9% Asian, and 1% American Indian or Alaska Native, with about 5% of citizens identifying themselves as belonging to two or more groups (U.S. Census Bureau, 2014).

- Approximately one in five children (21%), or almost 11.7 million individuals ages 5 to 17, speak a language other than English at home (Kids Count Data Center, 2021).
- In recent years, children of color have made up the majority of students in several states (for example, California, Texas, and Mississippi) and many urban areas, including Detroit, Los Angeles, Atlanta, Miami, Baltimore, New York, Chicago, Birmingham, and Houston (Gollnick & Chinn, 2021; Lustig & Koester, 2018).
- Despite the increasing cultural and linguistic diversity within our schools, the overwhelming majority of educators (over 79%) are white while three out of four teachers are female (National Center for Education Statistics, 2022b).
- Children from minority groups are often disproportionately represented in special education programs (Gollnick & Chinn, 2021; U.S. Department of Education, 2022).

The reasons for these changing demographics are many and varied. They include shifting immigration patterns and varying birth rates among women of various ethnic groups as well as other factors. It is abundantly clear that the ethnic makeup of the United States is changing. It is equally obvious that this diversity will be reflected in our schools. The challenge confronting educators and other professionals is how best to meet the needs of this changing and expanding population of learners.

The diversity of our teaching workforce has failed to keep pace with the growing number of students from culturally and linguistically diverse backgrounds.

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Diversity in the Teaching Profession

As the number of students from culturally and linguistically diverse backgrounds continues to grow, the diversity of our teaching workforce has failed to keep pace with this expansion (Ford, 2012; Gollnick & Chinn, 2021; Schaeffer, 2021). Approximately 79% of public school teachers are white, 6.7% are African American, slightly more than 9% are Hispanic, and only about 2% are Asian (National Center for Education Statistics, 2020b). Overall, this condition is not expected to improve; in fact, it is projected that the teaching profession will become increasingly homogeneous in the coming years (National Education Association, 2019).

Schools in the United States typically reflect white, middle-class values, a situation that holds little meaning for vast numbers of children from low-income and/or from ethnically or culturally diverse backgrounds. This is referred to as cultural mismatch (La Salle et al., 2020; Nguyen & Nguyen, 2020). One example for children involves raising hands and using inside voices in a school building, which may be incongruent with what is acceptable in one's home environment or how one gets an adult's attention outside of school.

Teachers from minority groups play a critical role in the education of all children, especially for students from minority populations. In addition to serving as role models, these professionals are likely to incorporate cultural materials that make learning more relevant for all students. Researchers also suggest students from minority groups are more likely to trust and respect educators with whom they share a significant characteristic such as race (Chen, 2022).

From Assimilation to Intersectionality

In the early decades of the 20th century, one aim of schools was to assimilate children of immigrants into American culture as quickly as possible. There was a widely held belief that public education could

unite the population and instill the ideals of American society in diverse groups of people. The goal of this assimilation or homogenizing process was to "Americanize" vast numbers of new citizens. They were expected to abandon their native languages, cultural heritage, beliefs, and practices. In their place would emerge a common American culture—*E pluribus unum* ("Out of many, one")—with an allegiance to the "American way of doing things." Metaphorically speaking, the United States was seen as a huge **melting pot**—a cauldron into which diverse people were dumped to melt away their differences, thus creating a citizenry who were very much alike (Tiedt & Tiedt, 2010).

For a variety of political and social reasons, Americans in the 1960s slowly began to question the wisdom of a melting pot theory as the country struggled with issues of civil rights and equal opportunity. Schools were no longer seen as the primary vehicle for homogenizing new citizens; instead, a student's ethnic heritage was to be valued and prized. Interest in cultural pluralism and multicultural education was ignited. As a result, a new set of metaphors evolved to counter the philosophy of America as a melting pot. The United States is now likened to a patchwork quilt or a floral bouquet.

The notion of the United States as a melting pot society has gradually given way to **cultural pluralism** wherein cultural and ethnic differences are appreciated and respected. Cultural pluralism does *not* require cultural groups to relinquish or abandon their cultural heritage. Schools now value the richness that diversity brings to the classroom; diversity is seen as a strength rather than a weakness.

Today, we focus on intersectionality, which recognizes that individuals, including students with disabilities, are not singular individuals. Students with disabilities are multidimensional (Wildman et al., 2024). As such, a child with a disability may also be Black or Latinx as well as nonbinary, gay, and/or low income. Intersectionality refers to these multiple identities and how these identities shape power or privilege they may have within society (Barad, 2007). Intersectionality also suggests that some intersections of identities are historically or currently marginalized and may experience unique oppression (Crenshaw, 1991).

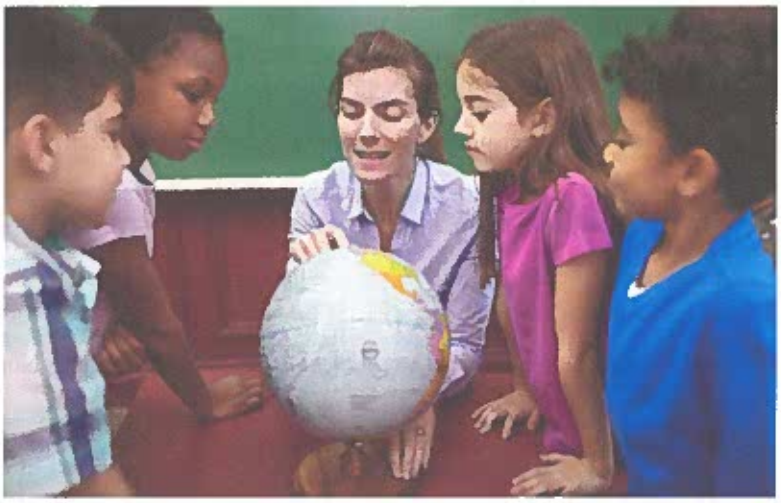
Terminology of Cultural Differences

Educators and other professionals in the field of education are confronted with a barrage of labels and terms used to describe the education of children from different cultural backgrounds. Sometimes this terminology contributes to inaccurate generalizations, stereotyping, and incorrect assumptions about certain individuals or groups of people. In some instances, it is even difficult to know how to correctly describe the young children themselves. Do we, for example, refer to some children as Black or African American? Is it more appropriate to identify a student as Hispanic or Latinx, and how about students from Asian cultures? As you can see, the topic of cultural and linguistic diversity can easily become a source of confusion and controversy. Perhaps it is best to begin our discussion of key terminology by arriving at an understanding of what we mean by culture.

Culture

We define **culture** as the attitudes, values, belief systems, norms, and traditions shared by a particular group of people that collectively form their heritage. A culture is transmitted in various ways from one generation to another. It is typically reflected in language, religion, dress, diet, social customs, and other aspects of a particular lifestyle (Gargiulo & Kilgo, 2024). Siccone (1995) points out that culture also includes the way particular groups of people interpret the world; it provides individuals with a frame of reference or perspective for attaching meaning to specific events or situations, such as the value and purpose of education or the birth of a child with a disability.

Gargiulo and Kilgo (2024) caution educators to guard against generalizing and stereotyping when working with students from various cultural groups. Even within specific groups, each person is unique, even though all members of the group may share distinctively similar group characteristics. Two students from the same racial group will most likely perform quite differently in the classroom regardless of their shared cultural heritage.



Because of the increasing diversity of our society, the United States is now often likened to a floral bouquet or a patchwork quilt.

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Multiculturalism

We live in a multicultural society, yet **multiculturalism** is frequently a confusing and poorly understood concept. In its most basic interpretation, multiculturalism refers to more than one culture. It acknowledges basic commonalities among groups of people while appreciating their differences. Implicit within the concept of multiculturalism is the belief that an individual can function within more than one culture. Multiculturalism also provides us with a foundation for understanding multicultural education.

Multicultural Education

Multicultural education is an ambiguous and somewhat controversial concept. Sleeter and Grant (2009) characterize multicultural education as an umbrella concept involving issues of race, language, social class, and culture, as well as disability and gender. Banks (2020) and Gollnick and Chinn (2021) portray multicultural education as an educational strategy wherein the cultural background of each student is valued, viewed positively, and used to develop effective instruction.

Bilingual Education

Bilingual education is an educational strategy whereby students whose first language is not English are instructed primarily through their native language while developing their competency and proficiency in English. Students receive both instruction in their native instruction as well as instruction to improve their English proficiency (Piñón et al., 2022).

Describing Diversity

U.S. society is an amalgamation of many different cultures. The U.S. government, however, officially recognizes only a handful of distinct racial groups. The federal government uses this classification scheme when reporting, for example, Head Start enrollment, poverty figures, high school graduation rates, and other such statistics. Citizens of the United States are typically categorized as follows:

- *American Indian or Alaska Native.* A person having origins in any of the original peoples of North and South America and who maintains cultural identification through tribal affiliation or community recognition.

- *Asian.* A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
- *Black or African American.* A person having origins in any of the Black racial groups of Africa.
- *Hispanic or Latinx.* A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race.
- *Native Hawaiian or Other Pacific Islander.* A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- *White.* A person having descended from any of the original peoples of Europe, North Africa, or the Middle East (National Center for Education Statistics, 2020b).

We should point out that the preceding descriptions are arbitrary and represent umbrella terms. This terminology camouflages immense cultural and racial variability while obscuring the richness of individual cultures. Regardless of how specific groups of people are described, the diversity and variation within each group are tremendous. Various cultural groups are anything but homogeneous; differences are likely to be found in language, ethnicity, social class, home country, and a host of other dimensions (Lustig & Koester, 2018). It is important for teachers to acknowledge and respect this heterogeneity. They must also guard against perpetuating ethnic and racial stereotypes. Educators should use qualifiers such as *some, many,* or *most* when discussing various cultural groups. This insensitivity to individuality can easily result in students' receiving an erroneous, oversimplified, and possibly stereotypical impression of a particular racial group (Ryan, 1993).

Teachers must also guard against assuming that the behaviors, beliefs, and actions of their particular cultural group are the correct or only way of doing something. Such assumptions reflect **ethnocentrism**—viewing one's own cultural group characteristics as superior or correct and the ways of other groups as inferior or peculiar.

MULTICULTURAL EDUCATION, BILINGUAL EDUCATION, AND STUDENT DIVERSITY

It is axiomatic that all students are different and not all people learn in the same way; this is especially true for students who are culturally and linguistically diverse. It would be foolish for teachers to expect children (or adults, for that matter) to leave their values, traditions, beliefs, and even language at the schoolhouse door. Effective teachers are sensitive to the cultural heritage of each learner and attempt to provide educational experiences that are culturally relevant and culturally appropriate.

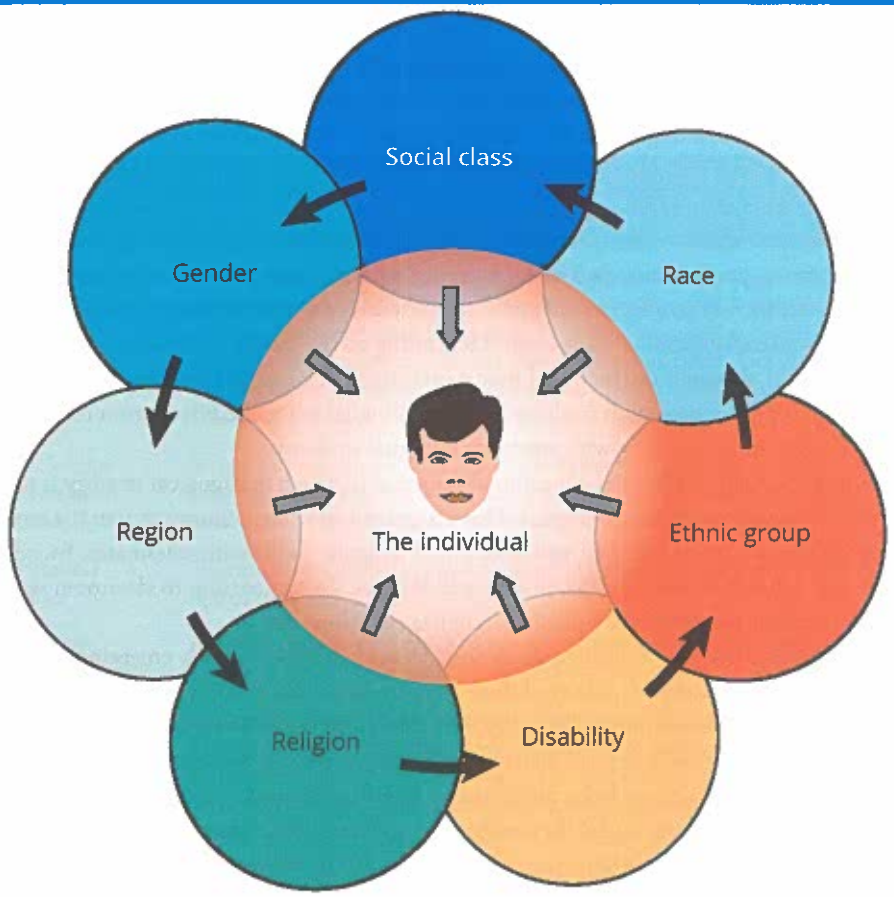
Multicultural Education: Concepts and Characteristics

Embedded within the concept of multicultural education is a belief that all students, regardless of their race, ethnicity, culture, and other characteristics, such as social class or disability, should experience equal educational opportunities. It is important for all teachers to remember that multicultural education is an orientation or a perspective and not a specific pedagogical technique or a subject to be taught.

To examine the multicultural nature of society, we must distinguish between macroculture and microculture. At the heart of this society is a core national culture, identified as the **macroculture**, which represents a shared culture. Traits such as individualism, independence, competitiveness, and ambition are characteristic of the American macroculture (Gollnick & Chinn, 2021), along with values such as equality and fair play. Within this larger culture are several distinct subcultures, or **microcultures**, which, while sharing attributes of the macroculture, maintain their own distinct values, norms, and behaviors. The United States is composed of many different microcultures, as

illustrated in Figure 3.1. According to Banks (2020), the various microcultures to which a person belongs are interrelated and interact with one another to collectively influence the individual's behavior. Membership in a particular group does not define a person's behavior, but it does make certain types of behavior more likely.

FIGURE 3.1 ■ Influence of Microcultures on an Individual's Behavior



Source: Adapted from J. Banks & C. Banks (Eds.), *Multicultural Education Issues and Perspectives*, 10th ed. (Wiley, 2020), p. 11.

Differences between the various microcultures and the macroculture are frequently a source of conflict and misunderstanding. A major goal of multicultural education, therefore, is for students to acquire the knowledge, attitudes, and skills needed to function effectively in each cultural setting (Banks, 2020). Banks argues that students in contemporary society should be able to function in their own as well as other microcultures, the macroculture, and the global community.

Bilingual Education: Concepts and Characteristics

As noted previously, multicultural education and bilingual education are not the same thing. Multicultural education can exist independently of bilingual education, but bilingual education cannot exist without multicultural education because it emphasizes the student's culture as well as language. As previously noted, estimates suggest that there are slightly less than 12 million school-age children whose primary language at home is not English (Kids Count Data Center, 2019). Yet, controversy and debate continue over how best to meet the needs of these students. In many school districts, bilingual education provides one possible answer. However, 32 states have enacted legislation or passed constitutional amendments establishing English as the "official" language of their

state (U.S. English, 2023), and 5 states actually prohibit bilingual education in their schools (New America, 2024).

Students whose first language is not English represent a very heterogeneous group of individuals. Their competency in their primary language, as well as in English, may vary greatly. According to contemporary professional practice, these students are often identified as emergent bilingual students. Historically, these students were referred to as English language learners (ELLs) or **English learners (ELs)**. Consequently, these students are often unable to profit fully from instruction provided in English.

Although one of the principal goals of bilingual education is to provide increased educational opportunities for students whose native language is not English, the original aim of bilingual education was not to advocate bilingualism but rather to promote the acquisition of English language skills. Bilingual education was thought to be the quickest way for a non-English-speaking person to become literate in English (Janzen, 1994).

The research evidence on the effectiveness of bilingual education generally suggests bilingual education is the most appropriate approach for working with students who are emergent bilingual students. Of course, the key to effective bilingual education is to match the instructional strategy to the specific needs and background of the student. Depending on the child's proficiency in their native language and English, different instructional models are used. The Insights feature summarizes some of the approaches typically used with students who are bilingual while the First Person feature describes one teacher's experiences working with emergent bilingual students.

Experts in the field of bilingual education disagree as to which pedagogical strategy is most effective for teaching students who are bilingual. There is general agreement, however, that the more opportunities individuals have to use their newly acquired language skills with classmates, friends, family members, and others, the more proficient they will become. In comparison to classroom settings, the natural environment seems to better facilitate language development.

Educators must consider carefully when they transition students with emerging proficiency in English to all-English classrooms. Many of these students' academic failures appear to be due to transitioning too quickly. Conversational fluency typically develops in children who are emergent bilingual students after approximately 2 years of instruction. Teachers, therefore, assume that students are ready to move on because they appear to be proficient in English. However, according to investigators the deeper and more complex language skills needed for academic success require an additional 5 to 7 years of instruction (Hoover et al., 2008; Martirosyan et al., 2015). Movement to a monolingual English class setting should occur only if the teacher is certain that the student possesses the requisite language skills to compete in an academic environment.

Bilingual Special Education: Concepts and Characteristics

Students who are culturally and linguistically diverse *and* have a disability present challenges for educators. How do we meet the needs of this growing population of students? What is the most normalized environment for students experiencing "double jeopardy"—that is, linguistic differences and disability? Which area should teachers primarily focus on—the problems posed by the disability or the lack of proficiency in English? These questions have no easy answers. One frequently mentioned solution is to place these students in classrooms with a special educator who is bilingual. In the majority of instances, however, this is not a feasible solution because of a severe shortage of qualified personnel (Council for Exceptional Children, 2011). What these students truly need is an instructional model known as **bilingual special education**. The main goal of these efforts is to assist students in reaching their maximum potential. The student's primary language and culture are the vehicles for accomplishing this task.

One of the critical issues confronting professionals is how to merge two different programs, bilingual education and special education, into one cogent paradigm. The integration of these two programs requires a focus not only on the acquisition of English language proficiency but also on the construction of individualized educational interventions. The goal is the development of both

academic and English language skills, which often requires a team approach. Meaningful instruction for students who are culturally and linguistically diverse and disabled entails a coordinated effort involving general educators, special education teachers, and bilingual educators (Gollnick & Chinn, 2021).

INSIGHTS

INSTRUCTIONAL OPTIONS FOR EMERGENT BILINGUAL STUDENTS

TABLE 3.1 ■ Instructional Options for Emergent Bilingual Students

Approach	Strategies
1. Transitional programs	Students are instructed in academic content areas via their native language only until they are sufficiently competent in English, then transition to all-English classes. The primary goal of this program is to move students as quickly as possible to English-only classes. Many students exit after 2 to 3 years of instruction. Most common instructional model; bilingual education legislation favors this approach.
2. Maintenance (developmental) programs	Strong native language emphasis. Students maintain proficiency in first language while receiving instruction in English. A long-term approach with less emphasis on leaving program. Solid academic foundation is stressed.
3. Enrichment programs	Typically used with monolingual children, who are introduced to a new language and culture.
4. Immersion programs	English language is the exclusive medium of instruction; first language and culture are not incorporated. A "sink-or-swim" philosophy.
5. English as a second language (ESL) programs	Not a true form of bilingual education. Children typically receive instruction in English outside the regular classroom. Goal is to quickly develop English proficiency in bilingual students. Exclusive emphasis on English for teaching and learning; native language not used in instruction. An assimilationist model with multiple variations.
6. Sheltered English	Students receive instruction in academic subjects exclusively in English; no effort is made to maintain or develop proficiency in first language. English instruction is continually monitored and modified to ensure students' comprehension. Simultaneous exposure to English language and subject content matter. Students who are culturally and linguistically diverse and disabled present unique challenges for teachers.

Attempts at providing a special education to students who are emergent bilingual students have frequently encountered a number of problems, including challenges obtaining an accurate diagnosis coupled with assessment difficulties, which often lead to an inappropriate placement. These issues are intricately interrelated and complementary and must be considered within a broader context. Most educators recognize that disability and cultural and linguistic differences are related phenomena that play a significant role in a student's learning and development. Cultural and linguistic characteristics frequently coexist and interact with disability-related factors. Consider if you will Ramón, a 9-year-old boy identified as having an intellectual disability and limited English language skills. Ramón's parents are migrant workers. His family of six has an income below the federal poverty line. Ramón's special education program must address the interaction of these confounding variables. Winzer and Mazurek (1998) caution teachers to remember that students who are emergent bilingual students do not give up their right to bilingual education when found to be eligible for special education services.

FIRST PERSON: JENNY

TEACHING EMERGENT BILINGUAL STUDENTS

I began my teaching career as a French and English teacher in a large school system in an urban high school. The majority of the student population was African American. In my first year of teaching, I had a couple of students in my French class from Vietnam who were emergent bilingual students. Perhaps because I was a language teacher, I was very interested in learning what instructional techniques I could use to help them. At that time, the school only offered an immersion program. I was very frustrated by this policy and wished that I spoke Vietnamese so that I could better support my students. After 3 years, I moved and began teaching in a middle-class suburban high school in a small school district. This high school has increased in its cultural and economic diversity during my 20 years of teaching there.

In my first years there, I sought opportunities to work with the few emergent bilingual students who were in the school. Initially, the emergent bilingual students included a variety of European, Asian, and African students who were the children of professionals, such as researchers and college professors. I developed the first English as a second language (ESL) program classes at the school, using my knowledge as a language teacher. I provided support to students with their assignments in content classes and collaborated with their teachers regarding accommodations and assessments. After a couple of years, our ESL program began assessing the English proficiency of the students and creating instructional plans. I think that being both an ESL teacher and a general education teacher helped me to collaborate with other general education teachers—we spoke the same language, and I had to do what I suggested my colleagues do.

Gradually, our high school emergent bilingual student population increased and changed. Currently, the majority of our students are Hispanic, and most of their parents are employed in the service industry. I went back to school and completed a master's degree in special education and certification as an ESL teacher. As a result of my training and the changes in our emergent bilingual student population, I coauthored curriculum for sheltered English courses to supplement our ESL classes. I also began to co-teach in some content-area classes. I still have the occasional opportunity to teach an English class, where I hone my skills at accommodation and have to practice what I ask other teachers to do. In addition, because of my degree in special education, I am a more effective advocate for the appropriate assessment of emergent bilingual students who might be eligible for special education services.

One of the biggest challenges my students face is acquiring English proficiency while meeting requirements for graduation—both earning credits and passing graduation exams. As older learners, my students have less time to acquire English proficiency and greater course requirements to master. Other challenges may include differences in learning styles and educational expectations. In addition, teachers of emergent bilingual students may have confusion about or resistance to differentiating instruction for emergent bilingual students. Most teachers never expected to also have to teach their students to speak English. They may also have strong feelings about teaching students who might be undocumented immigrants.

Addressing the challenges emergent bilingual students and their teachers face can be demanding, yet being an ESL teacher is a highly rewarding job. I get to work with students and their families over a period of several years and to learn from them about their cultures. I observe them sharing their culture with other students and becoming successful in academic and extracurricular activities.

—Jenny Harvey

ESL Teacher

Homewood High School, Homewood, Alabama

PL 108–446, the reauthorization of IDEA in 2004, directly speaks to the issue of appropriate programming for these children. Students *cannot* be considered eligible for special education services under this law if their educational difficulties are primarily the result of limited proficiency in English or poor instruction.

DISPROPORTIONATE REPRESENTATION OF MINORITY STUDENTS IN SPECIAL EDUCATION PROGRAMS

The disproportionate presence of students from minority groups in special education programs has been a pressing and volatile concern of educators for several decades (Anastasiou et al., 2017; Ford, 2012; Zhang et al., 2014). The fact that greater numbers of children from minority groups are placed in special education programs than would be anticipated based on their proportion of the general school population is commonly referred to as **overrepresentation**. At the same time, there is a longstanding pattern of **underrepresentation** (fewer students in a particular category than one might expect based on their numbers in the school population) of Blacks, American Indian/Alaska Natives, and Hispanics/Latinos in programs for children and youth who are gifted and talented (Clark, 2013; Gollnick & Chinn, 2021; Grissom & Redding, 2016; Peters et al., 2019). Historically speaking, Asian children are typically underrepresented in special education classes but tend to be overrepresented in classes for students who are gifted and talented (Ford, 2012; U.S. Commission on Civil Rights, 2009; U.S. Department of Education, 2009).

The fact that a disproportionate number of students from minority groups are enrolled in special education classrooms is a stinging indictment of the efficacy of the professional practices of special educators and a challenge to the concept of honoring diversity—presumably the cornerstone of our field (Meyer et al., 2016). At the heart of the discussion about disproportionate representation is the issue of inappropriate placement in special education programs. The primary concern is with false positives—when students from a cultural or linguistic minority are identified as disabled when, in fact, they are *not* disabled and are therefore inappropriately placed in a class for students with disabilities. To ignore the gifts and talents of children from diverse backgrounds is equally damaging and denies them the opportunity to reach their full potential (Artiles & Zamora-Durán, 1997). The outcomes are often serious and enduring (Morgan, Farkas, Cook, et al., 2017; Morgan, Farkas, Hilemeier, et al., 2017; Morgan et al., 2018; U.S. Department of Education, 1997).

Bicard and Heward (2016) wisely note that

> the fact that culturally [and linguistically] diverse students are identified as disabilities is not in itself a problem. . . . Disproportionate representation is problematic, however, if students have been wrongly placed in special education, are segregated and stigmatized, or are denied access to needed special education because their disabilities are overlooked as a result of their membership in a racial or ethnic minority group. (p. 230)

It should be noted that the problem of overrepresentation does not occur across all categories of disabilities. The disproportionate presence of students from minority groups primarily occurs in those disability categories in which professional judgment and opinion play a role in the decision-making process, such as mild intellectual disability or behavior disorders. Overrepresentation is generally not an issue in disability areas that have a clear biological basis. For instance, sensory or motor impairments do not yield dramatically different proportions than one would anticipate on the basis of the ethnic composition of the general school population (Anastasiou et al., 2017; Artiles et al., 2010; Harry, 2014; Harry & Klinger, 2014; Skiba et al., 2008).

Students who are culturally and linguistically diverse and disabled present significant challenges for educators.

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The U.S. Department of Education looks at risk ratios when examining the issue of overrepresentation in different disability categories. A risk ratio compares the proportion of a specific racial group served under IDEA to the proportion served among other racial groups combined. The question they seek to answer is, are children from a particular racial group more likely to receive special education services than individuals from other racial/ethnic groups? When examining patterns across all 13 IDEA disability categories, the department found that American Indian or Alaska Native students, Black or African American students, Hispanic/Latino individuals, and children identified as Native Hawaiian or Other Pacific Islanders were more likely to receive a special education than either Asian or white students (U.S. Department of Education, 2022). When looking at specific disabilities, American Indian or Alaska Native young children were almost more than four times as likely as Asian or white students to be identified as developmentally delayed. Similarly, African American children were more than twice as likely as Asian or white students to be identified as intellectually disabled. Native Hawaiian or Other Pacific Islanders were at elevated risk compared to Asian or white students for receiving services across all disability categories. Asian students were found to be disproportionally represented in two disability categories, autism and hearing impairment, while their white counterparts were more likely than students in other racial/ethnic groups to receive a special education due to deaf-blindness, multiple disabilities, other health impairment, and traumatic brain injury.

The entire issue of representational discrepancies is subject to debate and controversy. Morgan, Farkas, Cook, et al. (2017) argued that Black children were not overrepresented in special education as a result of their race or ethnicity. In fact, Morgan, Farkas, Hillemeier, et al. (2017) argued children of color were underidentified for special education. Other scholars have argued against the findings of Morgan and colleagues, asserting the longstanding belief of the overrepresentation of children of color in special education (e.g., Collins et al., 2016; Connor et al., 2019; Skiba et al., 2016).

These precautionary observations notwithstanding, the misclassification and/or inappropriate placement of students from minority groups in special education programs frequently leads to stigmatization and lower expectations. This is especially true when a student is removed from the general education setting and consequently denied access to the general education curriculum, which often results in limited postsecondary educational and employment opportunities.

Factors Contributing to Over- and Underrepresentation

A myriad of explanations have been put forth to explain the problem of over- and underrepresentation of culturally diverse students in some categories of special education. No one explanation fully accounts for this situation; the various reasons are complex and frequently intertwined. Scholars (Artiles et al., 2010; Harry, 2014; Harry & Klinger, 2014; Waitoller et al., 2010; Zhang et al., 2014) often see this problem as deeply rooted in the commingling of socioeconomic, sociocultural, and sociopolitical forces.

The overrepresentation of children of color is perhaps best understood as a relationship between family socioeconomic status and disability rather than between disability and minority group status per se (Falusi et al., 2019). Individuals from minority groups typically populate urban centers and tend to be low income. Poverty and ethnicity are inextricably interwoven variables in American society (Artiles et al., 2010; Morgan et al., 2018). Report after report and survey after survey routinely indicate an overrepresentation of minority groups living in poverty. According to the Children's Defense Fund (2021), almost 27% of Black children, over 20% of American Indian/Alaska Native children, and approximately 21% of Hispanic young children are considered low income.

Poverty often means limited access to health care (especially prenatal care), poor nutrition, and adverse living conditions. All of these variables increase the probability of a child being at risk for learning and developmental difficulties. Cultural and language differences only exacerbate students' vulnerability, increasing the likelihood of low educational achievement and their need for special education services (Gargiulo & Kilgo, 2024).

KEY FACTS ABOUT CHILDREN IN THE UNITED STATES

- Nearly one in seven children in the United States (14%) lives in poverty.
- Of all U.S. children, over 23% (17 million) receive food stamps.
- Over two thirds of children who are poor (70%) live in a household with a family member who works.
- A total of 4.4 million children under age 19 were uninsured in 2018.
- Seventy-nine percent of low-income fourth graders in public schools read below grade level, and almost three of four (74%) achieve below grade level in math.
- Almost 9% of children in the United States (651,000) are victims of abuse or neglect.

Source: Children's Defense Fund. *The State of America's Children 2021.* www.childrensdefense.org/

The evidence strongly suggests that socioeconomic status rather than ethnicity is one of the primary reasons that students from racially and ethnically diverse populations encounter persistent academic problems in public schools (Morgan et al., 2018). Poverty, however, is not the only culprit contributing to the disproportionate representation of minorities in some special education programs. Faulty identification procedures, ineffective prereferral strategies, test bias, and inappropriate assessment techniques may also account for some of the overrepresentation. The lack of standardized tests appropriate for use with students who have limited English language skills is another contributing factor (Coutinho & Oswald, 2000; Salvia et al., 2017; Voltz, 1998). As Ford (2012), along with Winzer and Mazurek (1998), points out, although biased and discriminatory assessment instruments do play a role, these factors alone are insufficient to account for the misplacement and disproportionate representation of students from minority groups in special education classes. Other relevant variables include teacher bias, different behavioral and academic performance standards for students from minority populations, and incongruity or discrepancy between the child's home culture and school expectations. For example, behaviors considered adaptive in a student's home, such as nonassertiveness and cooperation, may conflict with expectations in the classroom, where independence and competition are valued.

The reasons for the underrepresentation of certain groups in programs for the gifted and talented are as varied as the explanations for overrepresentation in other programs. Benner (1998) suggests that relevant factors include the politics of race and social class, attitudinal bias, and pressure from peers not to excel academically. Ford (1998, 2012) cites problems related to screening and identification, low teacher expectations and negative perceptions of minority students, and a lack of teacher training in the area of gifted education.

Consequences of Disproportionate Representation

The over- and underenrollment of racial and ethnic minorities in some special education programs often leads to unequal educational opportunities. In many instances, removal from the general education classroom and assignment to a special education classroom results in an inferior and ineffective educational experience for these children (Harry & Klinger, 2007; Jasper & Bouck, 2013). The educational experiences of racially, ethnically, and culturally diverse students often put them at risk for underachievement and dropping out of school. In comparison to their white peers, students from some ethnically and racially diverse backgrounds drop out of school at a higher rate. In the 2021 school year, the dropout rate for Hispanic youth was 8.2% in comparison to 4.4% for white students, yet only about 4% (3.9%) of African American students leave school prior to completing their education (National Center for Education Statistics, 2022a). Adolescents who do not graduate are more likely to be unemployed and constitute a disproportionate percentage of the incarcerated population (Amos, 2008; Hanson & Stipek, 2014; Jasper & Bouck, 2013).

The disproportionately high representation of racial and ethnic minorities as well as culturally and linguistically diverse students in some special education classrooms is a problem that has plagued educators for more than 50 years. Unfortunately, the debate over disproportionate representation,

inappropriate placement, and misclassification of minority students is far from being resolved. However, advocates, policymakers, researchers, educators, and parents have moved beyond the mere condemnation of this longstanding and complex problem to seek solutions. Yet solutions to the issue of greater educational opportunity and quality of education remain elusive. A multifaceted, broad-based strategy is necessary. Attention needs to be focused on the identification and referral process, assessment bias, instructional factors, and teacher attitudes, as well as environmental factors impinging on the student and the interrelationships among these variables.

ISSUES IN ASSESSING STUDENTS FROM CULTURALLY AND LINGUISTICALLY DIVERSE GROUPS

As the number of students from culturally and linguistically diverse backgrounds continues to grow, teachers can expect to encounter an especially challenging and difficult task—accurately assessing children from diverse cultures for disabilities. The appropriate assessment of all students has been a longstanding concern for all students, but it is an especially critical issue for young people from minority populations. Assessment is the primary vehicle through which access to services is determined and progress is evaluated, using a variety of formal and informal means. We consider assessment to be a dynamic, multifaceted, multipurpose decision-making process whose primary goal is to evaluate the academic and behavioral progress of a student. Table 3.2 identifies some of the outcomes of this process for children from diverse cultural backgrounds.

TABLE 3.2 ■ Assessment Outcomes for Culturally and Linguistically Diverse Students

- An accurate appraisal of a child's level and mode of functioning within the context of the child's cultural experiences
- A focus on a child's strengths and abilities as a basis for the development of new skills
- Identification of a child's specific educational needs, including both first- and second-language acquisition
- Literacy and basic-level skills evaluation, especially for students who lack educational experiences
- Identification of emotional difficulties
- Generation of data that may be used for placement decisions and the formulation of an individualized education program, if necessary

Source: M. Winzer and K. Mazurek, *Special Education in Multicultural Contexts* (Prentice Hall, 1998). pp. 177–178.

The absence of best practice guidelines for evaluating language minority and culturally diverse students results in a complicated and confusing assignment for teachers and other service providers. Concerns focus mainly on the use of standardized testing with this population, especially standardized tests of intelligence. Recall from Chapter 2 that the *Larry P.* and *Diana* lawsuits centered on claims that IQ tests were inherently unfair to students from minority groups and thus resulted in the misidentification and inaccurate labeling of these students, resulting in an inappropriate education.

Standardized testing has frequently been criticized for its failure to consider the cultural and experiential backgrounds of culturally and linguistically diverse students.

Assessment Challenges

There are several roadblocks to the goal of achieving meaningful and valid assessments of students who are culturally and linguistically diverse. Many standardized tests are simply not available in

languages other than English or in appropriate dialects. Coupled with this problem is the issue of bias in the assessment process. All tests are biased to some degree; it is an unavoidable artifact of psychometric evaluation. A disregard for the life experiences of these students results in an unfair evaluation and a depressed portrayal of their abilities. Remember, not all children approach a testing situation with homogeneous backgrounds or a reservoir of similar life experiences. "A student who has no experience with an item presented on a test or has experienced it differently is apt to answer the question incorrectly" (Council for Exceptional Children, 1997, p. 9). For instance, a 10-year-old from Hawaii, a state where there are no snakes, may have difficulty answering a question about rattlesnakes, whereas a child from New Mexico is very likely to be familiar with these creatures. Likewise, an adolescent from rural Alabama who is asked about ice fishing is much less likely to answer the question correctly than his cousin from northern Wisconsin. Gollnick and Chinn (2017) believe that the use of standardized tests with children from minority groups measures only their degree of cultural assimilation, not their intelligence.

Because of bias, test scores may be suspect and may not reflect an accurate appraisal of a child's disability.

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Some of these unwanted influences are of greater concern than others. Miller and colleagues (2013) note that bias may involve extrinsic variables, such as the child's response style or the value attached to competitive behavior in the student's culture. Intrinsic bias factors are difficulties with the instruments themselves, such as culturally bound test items (recall our rattlesnake example) or normative sampling issues. Bias can also come from several other sources, such as issues of test validity and reliability when tests are translated; a lack of test-taking skills such as performing under time constraints, motivation, and appropriate response selection strategies; and other issues in addition to the obvious concern of linguistic bias when the student's primary language is not English.

Assessment Safeguards

Professionals are fully aware of the importance of obtaining an accurate profile of an individual's strengths and needs. To accomplish this goal and to minimize the potential for abuses in the assessment process, PL 94–142—the Education for All Handicapped Children Act—and its subsequent amendments (i.e., IDEA) contain several procedural safeguards. Realizing that nonbiased evaluations are crucial to special education, the framers of IDEA mandated **nondiscriminatory testing**. School districts are required to adopt

> procedures to assure that testing and evaluation materials and procedures utilized for the evaluation and placement of children with disabilities will be selected and administered so as not to be racially or culturally discriminatory. Such materials or procedures shall be provided and administered in the child's native language or mode of communication, unless it is clearly not feasible to do so, and no single procedure shall be the sole criterion for determining an appropriate educational program for a child. (20 U.S.C. § 1412 [5] [C])

In addition, students are to be assessed by trained personnel who are part of a multidisciplinary team that is responsible for the evaluation. Written communications with the student's parents are to be provided in the parents' native language.

Assessment Innovations

Concern about the problems with the assessment process has resulted in efforts at minimizing test bias. Although a completely nonbiased or culture-fair assessment is unlikely, initial attempts at

A meaningful education program must incorporate the individual's language and culture.

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reducing bias focused on the instruments themselves. Many tests were revised in an effort to reduce the number of culturally specific test items (content bias) and the reliance on culturally specific language. Tests were also renormed, or restandardized, to reflect the growing diversity of American schoolchildren. Even the testing environment and the race of the examiner and their interactions with the student have come under scrutiny.

One example of this effort is the second edition, normative update of the Kaufman Assessment Battery for Children (KABC-II NU) designed by Kaufman and Kaufman (2018). The KABC-II NU is used to assess children between 3 and 18 years of age. This instrument was normed on groups of white, Hispanic, African American, Native American, and Asian American children in addition to a population of individuals with disabilities. The KABC-II NU minimizes a student's verbal skills and abilities, thus enhancing its usefulness with children with limited proficiency in English. A Spanish version is also available.

Contemporary Assessment Strategies

Many school districts are searching for better ways of assessing the growing population of students who are culturally and linguistically diverse. One particularly promising practice is the movement toward more authentic, performance-based assessment strategies such as **portfolio assessment** (Friend & Bursuck, 2019). This innovation could possibly help in resolving the problem of the over- and underrepresentation of language and ethnic minorities in some special education programs.

Portfolio assessment is uniquely intriguing because it emphasizes the instructional environment and focuses on student performance and the outcomes of learning (McLoughlin et al., 2018). Unlike infrequent or onetime standardized testing, performance-based assessment relies on the student's learning experiences and evaluates meaningful, real-world tasks using multiple performance indicators such as writing samples, speeches, artwork, videotapes, and work samples gathered over time and collected in a portfolio. Portfolio assessments are relevant and culturally responsive assessments (Gargiulo & Metcalf, 2023).

Portfolio assessment, of course, is not the complete solution to eliminating bias in the assessment of culturally and linguistically diverse children. Several questions and concerns about this performance-based measure remain unanswered. Does portfolio assessment result in a fairer and more accurate portrayal of students from minority groups? Do portfolio data generate decisions about these students that differ from those formulated around the results of traditional testing? What is the basis for our standards or benchmarks? Do teachers use individual standards, or are comparisons based on districtwide, statewide, or even national performance indicators? The answers to these and other questions await further research evidence.

We believe that portfolio assessment should be an integral component of the assessment process. It represents an exciting alternative to assessing learning and the funds of student knowledge.

Assessment Recommendations

Completely fair and nonbiased assessments may not be possible, but professionals can at least minimize those variables that may influence performance outcomes. The recommendations in the accompanying Strategies for Effective Teaching and Learning feature represent attempts at achieving authentic data and ensuring fairer, more accurate appraisals of culturally and linguistically diverse students and those with emerging English language skills.

STRATEGIES FOR EFFECTIVE TEACHING AND LEARNING

RECOMMENDATIONS FOR ASSESSING CULTURALLY AND LINGUISTICALLY DIVERSE STUDENTS

- Assessment of an individual's language competency in both English and their native language should be completed before administering other tests.
- To be eligible for a special education, a student must exhibit a disability when evaluated in their native language.
- Schools should incorporate ecological assessments that include not only multiple evaluation tools familiar to the examiner but also information gathered from the student's teachers, the student's parents, and the student.
- Evaluators should use evaluation techniques that are as unbiased as possible. For example, a bilingual professional, not an interpreter, should administer the test.
- If a bilingual professional is unavailable, an interpreter may be used if they are first trained in assessment principles and terminology.
- Parents and other stakeholders should be involved when developing alternate assessments.

EDUCATIONAL PROGRAMMING FOR STUDENTS WITH EXCEPTIONALITIES WHO ARE CULTURALLY AND LINGUISTICALLY DIVERSE

Providing specific instructional strategies and tactics for students with disabilities who are culturally and linguistically diverse (and even students who are nondisabled) is a challenging task. We can, however, offer some general suggestions for enhancing instructional effectiveness. Our instructional practices must be culturally affirming, sensitive, and responsive. The student's cultural background should be seen as an instructional resource (Ford, 2012; Garcia & Ortiz, 2006; Shealey & Callins, 2007). A meaningful educational program must incorporate the individual's language and culture. The degree to which this integration occurs is a valid gauge of academic success.

A student's life experiences can be the building blocks or foundation for developing a curriculum that is authentic and culturally relevant. Meaningful IEPs for students with disabilities who also exhibit cultural and/or linguistic diversity should reflect goals and instructional strategies that are appropriate to the student's disability while also reflecting their language status.

Attainment of IEP goals depends, in part, on establishing a supportive learning environment. One way of enhancing the context in which teaching and learning occur is through the careful selection and evaluation of instructional materials. Materials that reflect the sociocultural, linguistic, and experiential backgrounds of the students increase the likelihood that children will respond to them in a positive manner (Gollnick & Chinn, 2021). Instructional success with children from diverse populations depends largely on the teacher's ability to construct meaningful pedagogical bridges that cross over different cultural systems (Garcia & Ortiz, 2006; Meyer et al., 2016). The accompanying Strategies for Effective Teaching and Learning feature presents several guidelines that educators should consider when evaluating materials for their classroom.

STRATEGIES FOR EFFECTIVE TEACHING AND LEARNING

GUIDELINES FOR SELECTING AND EVALUATING INSTRUCTIONAL MATERIALS

- Are the perspectives and contributions of people from diverse cultural and linguistic groups, as well as people with disabilities—included in the curriculum?

- Are there activities in the curriculum that will assist students in analyzing the various forms of the mass media for ethnocentrism, sexism, "handicapism," and stereotyping?
- Are people of diverse cultural/racial/gender groups with varying abilities shown in both active and passive roles?
- Are people of diverse cultural/racial/gender groups with disabilities shown in positions of power (i.e., the materials do not rely on the mainstream culture's character to achieve goals)?
- Do the materials identify strengths possessed by underachieving populations? Do they diminish the attention given to deficits, to reinforce positive behaviors that are desired and valued?
- Are members of diverse racial/cultural/gender groups with disabilities shown engaged in a broad range of social and professional activities?
- Are members of a particular culture or group depicted as having a range of physical features (for example, hair color, hair texture, variations in facial characteristics and body build)?
- Do the materials represent historical events from the perspectives of the various groups involved or solely from the male, middle-class, and/or Western European perspective?
- Are the materials free of ethnocentric or sexist language patterns that may make implications about persons or groups based solely on their culture, race, gender, or disability?
- Will students from different ethnic and cultural backgrounds find the materials personally meaningful to their life experiences?
- Are a wide variety of culturally different examples, situations, scenarios, and anecdotes used throughout the curriculum design to illustrate major intellectual concepts and principles?
- Are culturally diverse content, examples, and experiences comparable in kind, significance, magnitude, and function to those selected from mainstream culture?

Source: S. Garcia and D. Malkin, "Toward Defining Programs and Services for Culturally and Linguistically Diverse Learners in Special Education," *Teaching Exceptional Children, 26*(1), 1993, p. 55. Reprinted with permission.

CHAPTER IN REVIEW

Cultural Diversity: The Changing Face of a Nation (Learning Objective 3.1)

- Although the population of culturally and linguistically diverse students continues to grow, the diversity of the teaching workforce has not kept pace. About 80% of U.S. teachers are white, and it is projected that the teaching profession will become increasingly homogeneous over the next few years.
- The task of assimilating or "Americanizing" the children of immigrants was metaphorically described as a melting pot, whereby the various languages, beliefs, and customs of immigrants were melted away and replaced with a common American culture.
- In the latter part of the 20th century, interest in cultural pluralism and multicultural education was sparked. U.S. society is now characterized metaphorically as a floral bouquet or patchwork quilt; cultural and ethnic differences are valued and respected.

Multicultural Education, Bilingual Education, and Student Diversity (Learning Objectives 3.2)

- Multicultural education addresses issues of race, language, social class, and culture as well as disability and gender.
- Bilingual education is an educational strategy whereby students whose first language is not English are instructed primarily through their native language while developing competency and proficiency in English.
- *Emergent bilingual students* is a term used to describe individuals with reduced proficiency in reading, writing, or speaking English.
- Bilingual special education services embrace the use of the student's primary language and culture, coupled with an individually tailored program of special instruction.

Disproportionate Representation of Minority Students in Special Education Programs (Learning Objective 3.3)

- Historically, greater numbers of children from minority groups have been placed in special education classrooms than would be anticipated based on their proportion of the school population. This situation is commonly referred to as overrepresentation. Underrepresentation in certain programs, or fewer students than one would anticipate based on their numbers in the school population, is also a problem.
- The overrepresentation of children of color is perhaps best understood as a relationship between socioeconomic status and disability rather than between minority group membership and disability.
- Test bias and teacher expectations and bias may also account for this phenomenon.

Issues in Assessing Students From Culturally and Linguistically Diverse Groups (Learning Objective 3.4)

- Some of the barriers to achieving meaningful and valid assessments of students from culturally and linguistically diverse backgrounds are the lack of appropriate measurement tools and bias in the assessment process.
- Federal law requires that professionals use nondiscriminatory testing practices when evaluating students for possible special education placement.
- Another attempt at meaningful assessment of students from culturally and linguistically diverse backgrounds is a movement toward authentic, performance-based assessment techniques, such as portfolio assessment.

Educational Programming for Students With Exceptionalities Who Are Culturally and Linguistically Diverse (Learning Objective 3.5)

- The child's cultural and linguistic heritage must be reflected in their individualized education program (IEP) if instructional strategies are to be effective. The instructional materials should also mirror the sociocultural, linguistic, and experiential backgrounds of the students.

STUDY QUESTIONS

1. What do the terms *culture* and *cultural diversity* mean to you?
2. At one time, the United States was described as a melting pot. Why? Metaphorically speaking, American society is now characterized as a floral bouquet or patchwork quilt. What factors contributed to this change in thinking?
3. Define the following terms: *cultural pluralism, multicultural education,* and *bilingual education.*
4. Why is bilingual education a controversial topic?
5. Compare and contrast the various instructional models used with students who are bilingual.
6. Explain why students from minority groups experience disproportionate representation in some special education programs.
7. What are the consequences of disproportionate representation?
8. Why is the assessment of culturally and linguistically diverse students perceived to be problematic? How might these difficulties be corrected?
9. Define *portfolio assessment.* Identify the advantages of this strategy for evaluating the performance of children who are culturally and linguistically diverse.

KEY TERMS

melting pot
cultural pluralism
culture
multiculturalism
multicultural education
bilingual education
English learners (ELs)
ethnocentrism
macroculture
microcultures
bilingual special education
overrepresentation
underrepresentation
nondiscriminatory testing
portfolio assessment

LEARNING ACTIVITIES

1. Talk to a school psychologist, an educational diagnostician, or another assessment specialist about strategies and procedures used when evaluating students from a culturally or linguistically diverse background. What types of modifications, if any, do they use? Do they have any concerns about the validity of the assessment process? What is their opinion about alternate assessments, such as portfolios?
2. Visit several different schools in your area. Interview administrators or teachers about services available for students from culturally and linguistically diverse groups. Is there a problem of over- and underrepresentation in special education classes? What types of modifications are available to meet the needs of these students? How are parents and other family members involved in the school? Is multicultural education reflected in the school environment?
3. Attend various functions sponsored by ethnic groups in your community. Activities may include musical programs, art exhibitions, festivals, religious celebrations, school functions, and other ceremonies. How did you feel about participating in these activities? What did you learn as a result of your involvement? Were your personal viewpoints and stereotypes challenged as a result of this experience?

REFLECTING ON STANDARDS

The following exercises are designed to help you learn to apply the Council for Exceptional Children (CEC) standards to your teaching practice. Each of the reflection exercises that follow correlates with knowledge or a skill within the CEC standards. For the full text of each of the related CEC standards, please refer to the standards integration grid located in Appendix B.

Focus on Learner Development and Individual Learning Differences (CEC Initial Preparation Standard 1.1)

Reflect on your own culture and how you interact with people of other cultures. In what ways would you share your cultural background with your students? What strategies would you use to help your students appreciate their own cultural background and value the cultural diversity of others?

Focus on Professional Learning and Ethical Practice (CEC Initial Preparation Standard 6.3)

Reflect on what personal cultural biases you have. How might these biases affect your teaching? If possible, find an assessment to help you understand what hidden cultural biases you might have. Talk to colleagues, family, and friends to try to understand what biases you have that might hinder your teaching.

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4 PARENTS, FAMILIES, AND EXCEPTIONALITY

How grandparents respond to a grandchild with a disability can be an additional stressor for the child's parents or a source of strength and support. Grandparents, in the words of Gearheart et al. (1993), can be "the glue that holds the family constellation together" (p. 493). They are capable of greatly contributing to the overall functioning and well-being of the family. Their contributions can range from serving as alternative caregivers, to providing sources of community support, to assisting in the daily chores of shopping or running errands, but perhaps the greatest area of assistance is providing emotional support (Miller et al., 2012; Seligman & Darling, 2009).

As we have just seen, a person with a disability affects their family in many ways—some positive and others negative. It is refreshing, however, to see researchers and other professionals acknowledging the positive effects that a child with a disability has on family life. No longer is a disability exclusively thought to be a burden for the family. "There has been a growing recognition," Glidden and Floyd (1997) write, "of the rewards and benefits involved in rearing children with disabilities" (p. 250). It is primarily a matter of perspective.

WORKING WITH FAMILIES WHO ARE CULTURALLY AND LINGUISTICALLY DIVERSE

As we discovered in Chapter 3, teachers are working with a growing population of culturally and linguistically diverse students, of whom a disproportionate number are enrolled in special education programs. Effective teachers are sensitive to the needs of these children as well as the needs of their parents and extended family members. If the cultural and linguistic heritage of the parents is not respected, then the development of optimal relationships will likely be undermined (Gargiulo & Kilgo, 2024).

Cultural Sensitivity

Many of the strategies and programs, however, that are designed to solicit parental involvement have been devised primarily to serve middle- and upper-income English-speaking families from the macroculture (Meyer et al., 2020; Mueller, 2017). Thus, families from culturally and linguistically diverse backgrounds may be unable to fully take advantage of strategies designed to support home–school partnerships and enhance their role in the special education process.

Some of the roadblocks or obstacles that may impede the full and meaningful involvement of caregivers from outside the mainstream American culture include the parents' limited English proficiency, their previous negative experiences with schools, unfamiliarity with their rights and responsibilities, deference to teachers and other professionals as the decision-makers ("teacher knows best"), and, in some instances, lack of trust in the educational system (Chang et al., 2022; Ferguson et al., 2014; Lo, 2012; Meyer et al., 2020; Rossetti et al., 2017). Establishing meaningful collaborative relationships with families from culturally and linguistically diverse backgrounds also requires that professionals respect the family's interpretation of the disability and its origin; the family's child-rearing beliefs, medical practices, and traditions; the family's structure and decision-making style; and the family's religious views and preferred manner of communication (Gargiulo & Kilgo, 2024).

Teachers must exhibit cultural sensitivity when working with families whose cultural or linguistic heritage is different from theirs.

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The best intentions of teachers can easily be misinterpreted if they do not consider the family's value system and cultural traditions. For example, a Latinx American family may be uncomfortable with and reluctant to agree to a recommendation that they consider placement in a group home for their adolescent daughter with an intellectual

SUGGESTIONS FOR FACILITATING FAMILY AND PROFESSIONAL PARTNERSHIPS

What ingredients are needed to establish a meaningful and effective alliance between professionals and families with children who are disabled? The answer to this question has commanded a great deal of attention. We believe that awareness of and sensitivity to the needs of the family are essential prerequisites for establishing cooperative relationships. These relationships must be built around trust, mutual understanding, and respect. Perl (1995) suggests that interactions between parents and professionals be facilitated when professionals are able to establish an atmosphere of genuine caring. The traits of honesty, empathy, and genuineness are also crucial to working effectively with families. Additionally, professionals must engage in **active listening**, which requires that service providers listen to parents and other significant persons and caregivers with understanding. Those who seek to establish meaningful partnerships with families must focus on the feelings and attitudes that accompany the words. They must be constantly aware of both verbal and nonverbal messages and their emotional significance. Listening demands the use of both the head and the heart.

As schools and other agencies continue to reach out to families and seek to build partnerships, it seems appropriate that the concept of *parent* involvement be broadened in favor of the term *family* involvement. In contemporary American life, many primary caregivers are adults other than the child's biological parents; grandparents, older siblings, foster parents, and extended family members often fill this vital role. The involvement of families can have a beneficial effect on many different dimensions of school life:

- Student achievement
- The student's educational aspirations
- The length of time individuals stay in school
- Teachers' perceived efficacy of their teaching abilities
- Teachers' perceptions of caregiver effectiveness
- Caregivers' ratings of schools (Matuszny et al., 2007)

Professionals can facilitate meaningful partnerships with families by their actions and attitudes. Carefully consider the following statements. Do you think that caregivers would appreciate hearing these remarks from a professional?

- It's not your fault. You are not powerful enough to have caused the kinds of problems your child has.
- What do you need for yourself?
- I think your son could be a success story for our agency.
- I value your input.
- Under the circumstances, you are doing the best you can do. Frankly, I don't know what I would do or how I would be able to carry on.
- If you were a perfect parent, your son would still be in this condition.
- I agree with you.
- Your child has made progress, and I know he can do more, so we will continue to work with him.
- Why are you taking all of the blame? It takes two to make or break a relationship.

- I don't know. I can't tell you what's wrong with your child or what caused the problem.
- Your child knows right from wrong. She knows most of society's values, and that's because you taught them to her.
- There is a lot of love in your family.
- You know, it's okay to take care of yourself too.
- I don't know. I have to give that serious thought.
- I believe in your instincts. You're the expert on your child.
- You're being too hard on yourself.
- Our agency will take your case.
- Thanks so much for your participation in the group [parent support group]. Your intelligence and your calm reasonableness are important influences in the group. (*Family Support Bulletin*, 1991, p. 20)

We also believe that effective alliances with caregivers of children with special needs require that service providers attend to the following suggestions developed by Gargiulo and Graves (1991):

1. *Explain terminology.* Many parents [caregivers] have no previous experience with exceptionality. This may be their first exposure to a disability label. The parents' [caregivers'] conceptualization of cerebral palsy or intellectual disability is most likely very different from that of the professional.
2. *Acknowledge feelings.* Parents [caregivers] will frequently exhibit negative feelings when confronted with the news that their child is disabled. Professionals need to send a message that it is okay to have these feelings. They need to be acknowledged and then understood.
3. *Use a two-step process when initially informing parents [caregivers] that their child requires special educational services.* After sharing diagnostic information, it is strongly suggested that professionals allow parents [caregivers] time to comprehend and absorb what they have been told. The parents' [caregivers'] affective concerns must be dealt with before proceeding with matters such as intervention recommendations, treatment regimens and strategies, or duration of services. These issues should be addressed in a follow-up interview as the parents' [caregivers'] emotional state permits.
4. *Keep parents [caregivers] informed.* Use a variety of two-way communication techniques. Be as positive as possible when discussing a child's performance. Demonstrate respect, concern, and a sincere desire to cooperate.
5. *Be accountable.* If you agree to assume certain responsibilities or gather information for the parents [caregivers], be certain to follow through. Accountability demonstrates to the parents [caregivers] that they can depend on you. Trust, consistency, and dependability significantly increase the chances for an effective relationship. (p. 178)

Remember, being a parent of a child with a disability is not a role that most parents choose for themselves. Yet it is within professionals' power to help make this a beneficial experience while promoting the development and effective functioning of the entire family unit.

Special attention is sometimes required when working with parents of students from culturally and linguistically diverse backgrounds. Like many other parents, these families are often an untapped resource for educators. As we have seen, effective involvement of these families in the educational lives of their children requires that teachers be sensitive to the cultural norms, values, and beliefs held by the family.

CHAPTER IN REVIEW

Parent–Professional Relationships: Changing Roles (Learning Objective 4.1)

- Three distinct periods characterize the history of parent–professional relationships: (1) antagonistic and adversarial relationships, (2) working partnerships, and (3) parent empowerment and family-centered relationships.
- The passage of IDEA changed the status of parents from passive recipients of services to active participants and allies with professionals.
- The focal point of professionals' attention is now the child's family rather than just the parents. The family is seen as the primary decision-maker.

A Family Systems Approach (Learning Objective 4.2)

- A family systems model considers the family to be an interactive and interdependent unit; whatever affects one family member has repercussions for the other members of the unit.
- The Turnbull family systems model contains four interrelated components: family characteristics, family interactions, family functions, and family life cycle.

Stages of Parental Reaction to Disability (Learning Objective 4.3)

- A stage theory model for explaining parental reactions to the diagnosis of a disability is constructed around the premise that parents experience a grief cycle similar to the stages of reaction to the death of a loved one.

Disability and the Family (Learning Objective 4.4)

- The entire family constellation is affected by the presence of a child with a disability. The various subsystems and individual family members are uniquely impacted. No two families are likely to deal with an exceptionality in quite the same way.

Working With Families Who Are Culturally and Linguistically Diverse (Learning Objective 4.5)

- If the values, traditions, and beliefs of caregivers from culturally and linguistically diverse backgrounds are not addressed, then the development of optimal relationships will very likely be hindered.
- Teachers must exhibit culturally sensitive behavior when working with families whose backgrounds differ from their own.

Suggestions for Facilitating Family and Professional Partnerships (Learning Objective 4.6)

- In order to establish meaningful and effective alliances with families with children who are disabled, it is recommended that professionals create partnerships built around the principles of honesty, trust, and respect.
- Service providers must be genuine and exhibit a caring attitude, using active listening when communicating with family members and other significant adults.

STUDY QUESTIONS

1. How has the relationship between parents and professionals changed over the years? What circumstances have aided this process?
2. What was the purpose of the eugenics movement, and how did it affect relationships between professionals and parents?
3. Why do professionals currently believe that efforts should be directed toward working with families of children with special needs instead of just parents?

4. Define the term collaboration as it pertains to professionals and parents.
5. What is the rationale behind a family systems model?
6. Identify the four key components of the Turnbull family systems framework. Explain the characteristics of each of these elements.
7. How does the concept of cohesion differ from adaptability in the Turnbull model?
8. What are the stages of emotional response that many parents go through when informed that their child has a disability? Give examples of the types of behavior typically exhibited at each stage.
9. What cautions does Gargiulo stress when applying a stage theory model to parents of children with disabilities?
10. In what ways might a child with a disability affect their family?
11. What does the research literature suggest about the impact of childhood disability on marital relationships, mothers, fathers, siblings, and grandparents of children with special needs?
12. Name five emotional responses typically exhibited by siblings of children with disabilities.
13. Why is it important for professionals to be aware of and sensitive to cultural and linguistic differences when working with families of children with disabilities?
14. Describe what you believe to be key personal characteristics of professionals who work with families of individuals with disabilities.

KEY TERMS

eugenics movement
family systems model
family characteristics
family interactions
cohesion
adaptability
family functions
family life cycle
stage theory
respite care
cultural sensitivity
active listening

LEARNING ACTIVITIES

1. Talk to family members of a person with a disability. Learn how the family adapted to the person's exceptionality and how the family as a whole and individual members were or still are affected by the disability. Be certain to ask sensitive questions and ensure confidentiality.
2. Attend a support group meeting for family members of a person with a disability. What kinds of information were presented, and how was it delivered? In your opinion, did those in attendance benefit from the experience?
3. Develop a list of resources and supports in your community aimed at assisting individuals with disabilities and their families. Share your list with your classmates. Examples of resources and supports might include recreational opportunities, religious programs, support groups, respite care, local chapters of national parent/advocacy groups, and health care professionals who work with people with disabilities.
4. Discuss with two general educators and two special education teachers the strategies and techniques they use to establish parent–professional partnerships. What activities seem to be most effective for ensuring meaningful participation? How do these professionals ensure the involvement of parents from culturally and linguistically diverse backgrounds?

5. Volunteer to work for an organization that provides respite care for families of children with disabilities. Keep a journal about your experiences.
6. Interview parents or other family members from diverse cultural backgrounds to learn about their perspectives on disabilities and the educational system, as well as any culturally specific behaviors and values such as child-rearing practices and communication styles.

REFLECTING ON STANDARDS

The following exercises are designed to help you learn to apply the Council for Exceptional Children (CEC) standards to your teaching practice. Each of the reflection exercises that follow correlates with knowledge or a skill within the CEC standards. For the full text of each of the related CEC standards, please refer to the standards integration grid located in Appendix B.

Focus on Learner Development and Individual Learning Differences (CEC Initial Preparation Standard 1.1)

Reflect on a time when you negatively stereotyped someone because of their culture, language, religion, gender, disability, socioeconomic status, or social orientation. How might stereotyping a student or their family negatively affect your teaching? What strategies might you want to put in place in your classroom to avoid stereotyping?

Focus on Collaboration (CEC Initial Preparation Standard 7.3)

Reflect on the various ways your family was involved in your education. What are the advantages of fostering meaningful partnerships with your students' families? How will you want to involve families in your classroom?

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5 ASSISTIVE TECHNOLOGY

LEARNING OBJECTIVES

After reading Chapter 5, you should be able to:

- **5.1** **Contrast** educational technology, assistive technology, and computer-assisted instruction.
- **5.2** **Summarize** the legal and legislative aspects of assistive technology.
- **5.3** **Describe** assistive technology decision-making frameworks.
- **5.4** **Explain** the different levels of assistive technology devices and purposes of assistive technology devices.
- **5.5** **List** the types of tools and devices used to support learners in different subject areas.
- **5.6** **Identify** issues facing teachers and students with disabilities involving assistive technology.

For several decades, technology has been a consistent part of the lives of *all* students inside and outside of school. The Pew Research Center data suggest that 60% of children ages 0 to 11 use smartphones, 44% use a desktop or laptop, 67% use a tablet computer, and 44% use a game device. While generally, parents with older children (9- to 11-year-olds) were more likely to report use, 49% of parents with children ages 0 to 2 and 62% of parents with 3- to 4-year-olds reported smartphone use (Auxier et al., 2020). Further, 17% of parents with children 11 or younger reported their child has their own smartphone (Auxier et al., 2020). Use of these technologies climbs steeply for teenagers. Ninety-five percent of teenagers (aged 13–17) report accessing a smartphone, 90% a laptop or desktop, and 80% a gaming console (Vogels et al., 2022). Access to a smartphone is higher for those ages 15 to 17 (98% vs. 91% for 13–14 years old) but consistent across gender. Further, 97% of teens in the United States report accessing the Internet daily, with 46% indicating almost constant use (Vogels et al., 2022).

TECHNOLOGY IN EDUCATION

Educational technology is the practice of facilitating learning and improving performance by creating, using, and managing technological processes and resources (Mishra et al., 2009). In other words, educational technologies are tools that address educational problems (Newby et al., 2000). While some narrowly define educational technology as computers and computer-based applications, many define it in a broader sense and suggest educational technology has existed since the era of chalk and slate (Blackhurst, 2005a; Mishra & Koehler, 2009). Regardless of the concept of educational technology, one thing is consistent—the claim that use of a particular *technology* in education will revolutionize teaching and learning. Such claims were made for the talking picture (Devereux, 1933; Mishra et al., 2009), the blackboard (Lewis, 1988), and cell phones (Kolb, 2008; Mishra et al., 2009), just to name a few.

Teachers often take a technology not specifically designed for educational purposes and use it to fit their needs in the classroom (Kereluik et al., 2011; Mishra & Koehler, 2007). Repurposing can involve such common technologies as digital cameras and software (for example, Photoshop) for taking pictures of objects and then manipulating the images to demonstrate mathematical concepts such as transformations (Terry et al., 2013), as well as social media like Facebook (Kereluik et al., 2010).

Educational technology may encompass productivity technology, information technology, instructional technology, and assistive technology (Blackhurst, 2005a, 2005b). Tools that help educators and students create products efficiently and effectively are considered productivity

technologies. Information technologies involve tools that provide resources and access to information. Instructional technology involves hardware and software designed to support effective instruction to increase student learning. Finally, assistive technologies are tools and devices that support students with disabilities to access materials, increase independence, and experience an improved quality of life (Blackhurst, 2005b). School technology consists of educational technologies, such as tools for assessment, computers and mobile devices and their apps, and learning management systems (Bacak et al., 2023). Here educational technologies can include hardware, such as computers, Chromebooks, iPads, and SMARTboards, as well as software, such as Schoologym Google Classroom, iXL, BrainPOP, and Remind. Also, given the increase in technology use in and out of K–12 education, school technologies also include network and security technologies (e.g., antivirus, VPN), support technologies (e.g., file storage, some assistive technologies, such as both text-to-speech for browsers and Google Drive), and management technologies (e.g., records and student information, for example, PowerSchool; Bacak et al., 2023). Within the school environment, technologies (hard and soft) to support students with disabilities can fall across both educational technologies as well as support technologies (Bacak et al., 2023).

Today's students use many different types of educational technology.

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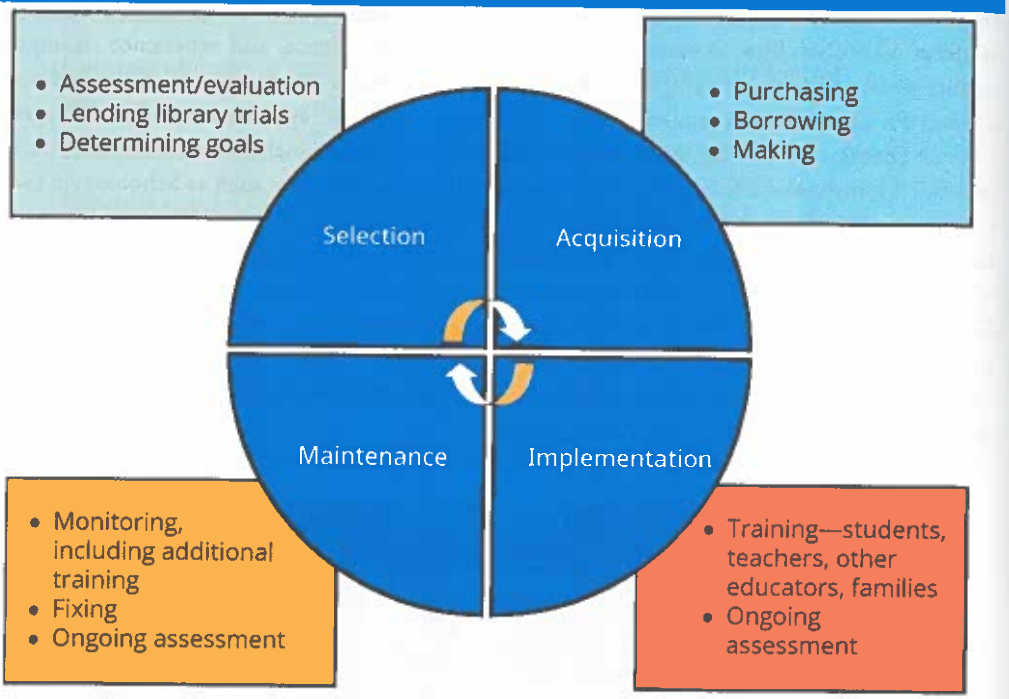
Assistive technology actually refers to devices *and* services, although most commonly, people associate the term *assistive technology* with tools or devices. An **assistive technology device** refers to "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability" (Individuals with Disabilities Education Improvement Act of 2004, Section 300.5). An **assistive technology service**, as defined in Public Law (PL) 100–407, the Technology-Related Assistance for Individuals with Disabilities Act (1988), includes "any service that directly assists an individual in the selection, acquisition, or use of an assistive technology device." While devices are the tools and technologies that students use, assistive technology services involve selecting (based on an evaluation of a student's assistive technology needs), acquiring, implementing, and maintaining devices (Parette et al., 2005). Assistive technology services can be provided by an **assistive technology specialist**; however, these individuals may be infrequent within a school system. In that case, special education teachers, speech–language pathologists, occupational therapists, and/or instructional technologists may be responsible for providing assistive technology services (Edyburn, 2004; Marino et al., 2006). See Figure 5.1 for a diagram of assistive technology services.

FIGURE 5.1 ■ A Visual Depiction of Assistive Technology Services Provided by an Assistive Technology Specialist or Other IEP Team Member



HISTORY AND LEGISLATION OF ASSISTIVE TECHNOLOGY

Previous definitions of assistive technology devices and services are found in IDEA 2004 (the Individuals with Disabilities Education Improvement Act) and PL 100–407, the 1988 Technology-Related Assistance for Individuals with Disabilities Act (also known as the "Tech Act"). However, actual use and legislation pertaining to the idea of assistive technology far predate the 1988 Tech Act. For example, in 1832, Louis Braille published the Braille code (Blackhurst, 2005a). Since then, we have seen the invention of electric amplifying devices for individuals with hearing impairments (1900), devices to magnify printed material (1953), and the talking calculator (1975), to name just a few (Blackhurst, 2005a; Nazzaro, 1977). In the 1970s, with the invention of the microcomputer, additional assistive technology became available to support students with disabilities, including text-to-speech (voice output of digital words so students can hear the text), augmentative and alternative communication (AAC) devices (low-tech, mid-tech, and high-tech communication tools that can replace, supplement, or enhance one's traditional means of communication), and speech-to-text (spoken words appearing as typed text on a computer-based technology) (Belson, 2003; Blackhurst, 2005a).

Assistive technology services are multifaceted, including evaluating the needs of students with disabilities.

iStockPhoto/FatCamera

Legislation for assistive technology also predates the 1988 Tech Act. In 1879, following the invention of Braille, PL 45–186 was passed, which authorized funding for the production of Braille materials by the American Printing House for the Blind. In 1958, PL 85–905 provided funding to purchase and distribute closed-captioned films to state schools for the deaf. The Elementary and Secondary Education Act Amendments of 1968, PL 90–247, legislated the provision of educational technology for students with disabilities (Blackhurst, 2005a).

However, much of what guides assistive technology today for students with disabilities comes from reauthorizations of the Individuals with Disabilities Education Act (IDEA) in 1990. The 1990 reauthorization of IDEA included the Tech Act definition of assistive technology as well as provided for assistive technology if the individualized education program (IEP) team determined it was needed (Smith &

Jones, 1999). The 1997 reauthorization of IDEA mandated that IEP teams consider assistive technology for *all* students with disabilities, shifting the focus of assistive technology as primarily for students with more severe or low-incidence disabilities (for example, students with visual impairments or students with severe intellectual disability) to also include students with high-incidence disabilities, such as individuals with learning disabilities (Quinn et al., 2009; Smith & Jones, 1999).

The latest reauthorization of IDEA in 2004 upheld the mandate that IEP teams *consider* assistive technology for all students with disabilities and that, pending determination by the IEP team, the assistive technology be provided at no cost to the student (Lee & Templeton, 2008). However, there was one exclusion in IDEA 2004; surgically implanted assistive technologies (for example, cochlear implants) were omitted from the definition of assistive technology. Consequently, schools are not required to pay for such devices (Zirkel, 2007). Related to assistive technology, IDEA 2004 included the National Instructional Materials Accessibility Standard (NIMAS), which stipulated students with **print disabilities**, commonly considered students with visual impairments and reading-based learning disabilities and sometimes particular physical disabilities, be provided with accessible instructional materials, such as large print, Braille, or digital text (National Center on Accessible Instructional Materials, 2011).

ASSISTIVE TECHNOLOGY DECISION-MAKING

As previously stated, assistive technology services provide for the consideration, selection, acquisition, and implementation of assistive technology devices and tools for students with disabilities. But how do IEP teams consider and select assistive technology for an individual student? While making an assistive technology decision can be challenging, given the range and types of tools and devices available, frameworks do exist to aid IEP teams in their decision-making progress. Perhaps the most well-known decision-making framework is the *S*tudent, *E*nvironments, *T*asks, and *T*ools (SETT) framework by Joy Zabala (1995, 2000). (See Table 5.1 for assistive technology decision-making resources.) The SETT framework involves the identification and consideration of the student (for example, strengths, needs, and preferences), the environments in which the student functions, and the tasks the student is expected to perform. The SETT framework is similar to the Matching Person and Technology (MPT) framework, which also suggests assistive technology devices or tools should match with the student (strengths, challenges, attitudes, and interests), work within the student's contexts, and fit the student's tasks (Bryant & Bryant, 2003; Raskind & Bryant, 2002; Scherer & Craddock, 2002). Beyond the SETT and MPT, other grant-funded projects and initiatives created decision-making tool kits for IEP teams to use in considering and selecting assistive technology for individual students (see Table 5.1).

When IEP teams are making assistive technology decisions, they may opt for a student to try out an assistive technology device or tool before recommending that the student use such assistive technology. IEP teams can take advantage of state lending libraries. For example, in the state of Indiana, the Promoting Achievement through Technology and Instruction for all Students (PATINS) Project (www.patinsproject.org) serves as the statewide technical assistance network for assistive technology. PATINS not only lends assistive technology to schools to aid in decision-making but also provides educators in the state with professional development related to assistive technology through face-to-face conferences as well as online tutorials or webinars. We recommend IEP teams consult their state assistive technology project for resources as well as devices and tools available through their lending libraries. (See Table 5.2 for examples of state programs.)

TABLE 5.1 ■ Resources for Assistive Technology Decision-Making Frameworks or Assessments

Student, Environments, Tasks, and Tools (SETT)	https://www.joyzabala.com/links-resources
Wisconsin Assistive Technology Initiative (WATI)	www.wati.org/?pageLoad=content/supports/free/index.php (Downloadable documents to assist in assistive technology decision-making and assessments)
University of Kentucky Assistive Technology (UKAT) Toolkit	edsrc.coe.uky.edu/www/ukatii/ (Downloadable documents to assist in assistive technology decision-making)
National Assistive Technology Research Institute (NATRI), Assistive Technology Planner	natri.uky.edu/atPlannermenu.html (Downloadable kit and documents to assist in assistive technology decision-making)

TABLE 5.2 ■ Representative State Programs for Assistive Technology

State	Statewide Assistive Technology Project
Alabama	STAR https://www.rehab.alabama.gov/services/vr/star
Michigan	Alt+Shift www.altshift.education
Ohio	Assistive Technology & Accessible Educational Materials Center https://ataem.org/
Texas	Texas Assistive Technology Network (TATN) https://ttap.disabilitystudies.utexas.edu/

Assistive technology is included within a student's IEP as appropriate. It can be represented in multiple ways—for instance, as a related service, as an accommodation, or as an annual goal or short-term objective, where appropriate (Netherton & Deal, 2006). Typically, however, assistive technology is selected and implemented to assist a student in meeting goals. Hence, IEP teams may want to consider assistive technology toward the end of an IEP meeting (Carpenter et al., 2015). It is important for IEP teams to remember that if assistive technology devices or services are written into a student's IEP, it is the responsibility of the school to cover the costs. However, schools are not required to pay for all assistive technology (for example, surgically implanted assistive technology); hence, other outlets, such as private insurance, Medicare, Medicaid, or donations, are frequently used by families.

ASSISTIVE TECHNOLOGY CATEGORIZATION

Assistive technology, by its definition in IDEA 2004, is vague and ambiguous. Broken down, assistive technology essentially is anything or can come from anywhere, as long as it helps or just maintains an individual's skills. Because assistive technology can be anything, it can be **instructional technology** (something that teachers use in the instruction of all students; for example, computer-based concept mapping and calculators), it can be everyday technology that is repurposed (for example, cell phones and iPads), and it can be specifically designed tools and devices (such as text-to-speech, speech-to-text, and AAC) (Bouck, Flanagan, et al., 2012; Bouck, Shurr, et al., 2012; Edyburn, 2004). In other words, the definition of assistive technology can leave one with two questions: "What isn't assistive technology?" and "When is something assistive technology?" (Edyburn, 2004).

Given the questions surrounding what is and what is not assistive technology, a way to better understand assistive technology is through the different categorization schemes. One way in which assistive technology is often categorized is through the level of technology: no-tech, low-tech, mid-tech, and high-tech. In general, higher-level technologies have a higher cost and require more training (for example, text-to-speech) (Blackhurst, 1997; Carpenter et al., 2015; Edyburn, 2005; Vanderheiden, 1984). See Table 5.3 for examples of assistive technology devices according to categorization.

Another way assistive technology can be categorized is by purpose. Bryant and Bryant (2003) suggested seven purposes for assistive technology: positioning, mobility, augmentative and alternative communication, computer access, adaptive toys and games, adaptive environments, and instructional aids.

TABLE 5.3 ■ Examples of Assistive Technology Devices by Categorization

No Tech	Low Tech	Mid Tech	High Tech
• Mnemonics (HOMES for remembering the names of the Great Lakes) • Graphic organizers	• Pencil grips • Raised lined paper • Highlighter strips • Braille playing cards	• Calculators • Audio recorders • Switches	• Speech-to-text • Tablets or mobile devices and apps • Word prediction

Similarly, Bouck (2017) suggested eight purposes for assistive technology: communication, mobility and positioning, computer access, vision and hearing, supporting behavior and organization, instructional aids, enhancing independence and transition, and young children. Likewise, the WATI suggested 14 categories for assistive technology: seating, positioning and mobility, communication, computer access, recreation and leisure, activities of daily living, motor aspects of writing, composition of written material, reading, mathematics, organization, vision, hearing, and multiple challenges (Gierach, 2009). See Table 5.4 for examples of assistive technology devices by purpose. Overall, these categorizations suggest assistive technology can meet a wide range of needs for a diverse population of students with disabilities.

TABLE 5.4 ■ Example Assistive Technology Devices by Purpose

Bryant and Bryant (2003) Purposes	Wisconsin Assistive Technology Initiative (WATI) Categories	Bouck (2017) Purposes	Examples
Positioning	Seating, positioning, and mobility	Mobility and positioning	• Adjustable-height desks • Custom wedges
Mobility			• Wheelchair • Gait trainer
Augmentative and alternative communication	Communication	Communication	• Picture Exchange Communication System® • Proloquo2Go® for iPod, iPad
Computer access	Computer access	Computer access	• Alternative keyboard • Speech/voice recognition
Adaptive toys and games	Recreation and leisure	Young children; enhancing independence and transition	• Switch-operated battery toys • Larger or Braille playing cards
Adaptive environments	Activities of daily living	Enhancing independence and transition	• Adapted utensils, bowls, and cups • Motion-controlled lights
Instructional aids	Motor aspects of writing	Instructional aids	• Speech-to-text • Pencil grips
	Composition of written material		• Word prediction • Portable spell checker
	Reading		• ReadingPen • E-text or supported e-text
	Mathematics		• Concrete or virtual manipulatives • Calculator
	Organization	Supporting behavior and organization	• WatchMinder® • Picture schedule
	Vision	Vision and hearing	• Text-to-speech • Screen magnification
	Hearing		• FM system • Hearing aid

Sources: AssistiveWare®, www.assistiveware.com; E. Bouck and S. Flanagan, "Assistive Technology and Mathematics: What Is There and Where Can We Go," *Journal of Special Education Technology, 24*(2), 2009, pp. 17–30; D. Bryant and B. Bryant, *Assistive Technology for People With Disabilities* (Boston, MA: Allyn & Bacon, 2003); J. Gierach, *Assessing Students' Needs for Assistive Technology*, 5th ed. (Milton: Wisconsin Assistive Technology Initiative, 2009); L. Carpenter, L. Johnson, and L. Beard, *Assistive Technology: Access for All Students*, 3rd ed. (Upper Saddle River, NJ: Pearson Education, 2015).

DEVICES AND TOOLS

In addition, assistive technology is central to the education of students with disabilities. Each chapter in Part 2 of this book examines assistive technology tools and devices that are unique or commonly used by individuals with a specific disability, such as an AAC device for students with speech and language impairments or various sound amplification systems for students with hearing impairments. We now focus our attention on assistive technology within content-specific domains, as well as other organizational capabilities for students with a range of disabilities (for example, learning disabilities as well as students with extensive support needs).

FIRST PERSON: MATTHEW

TEACHING IN THE AGE OF TECHNOLOGY

Since graduating with my bachelor's degree in special education, I have worked at an alternative school. My school is a state-accredited residential and day school program that serves students between the ages of 6 and 21 who have learning disabilities and/or emotional behavior disorders and who struggle in a typical school setting, as well as students with intellectual disability and students with autism spectrum disorder. Our students with learning disabilities and/or emotional behavior disorders are not reading or writing at grade level. For our older students who still struggle with handwriting, pencil grips or weighted pencils are available. I do see pencil grips benefiting my students. For our younger students who struggle with reading, we take advantage of books on CD or electronic books played through an MP3 player. In my school, we have advanced technology to support students with more intense needs as well. Every classroom has an iPad, and we use Proloquo2Go® for students with communication needs. Most of our assistive technology needs and decisions for individual students are determined by our occupational therapists or speech–language pathologists.

—Matthew Wright

Program Coordinator

T. C. Harris School

Lafayette, Indiana

Reading

Reading is a fundamental but complex skill and often considered the most critical academic skill (Strangman & Dalton, 2005). In 2000, the National Reading Panel suggested reading instruction should consist of five areas: phonemic awareness, phonics instruction, fluency, vocabulary, and reading comprehension. These five areas shape reading instruction, policy, and state standards today (Thomas, 2022). Despite its value, reading is an area of struggle for many students, with varying statistics presenting the frequency of struggling readers, let alone students with disabilities. The most recently available data from the National Assessment of Educational Progress (NAEP), which assesses reading at Grades 4 and 8, suggest students with disabilities are faring poorer than their peers without disabilities. The average score in reading for fourth graders with disabilities was 183, and the average score for fourth graders without disabilities was 223. Similar results are found for eighth graders: The average score was 229 for students with disabilities and 265 for those without disabilities (The Nation's Report Card, 2022b). Given the challenges reading can pose, it is important to consider how technology can support these students. See Table 5.5 for examples of assistive technology used for instruction in the various content areas.

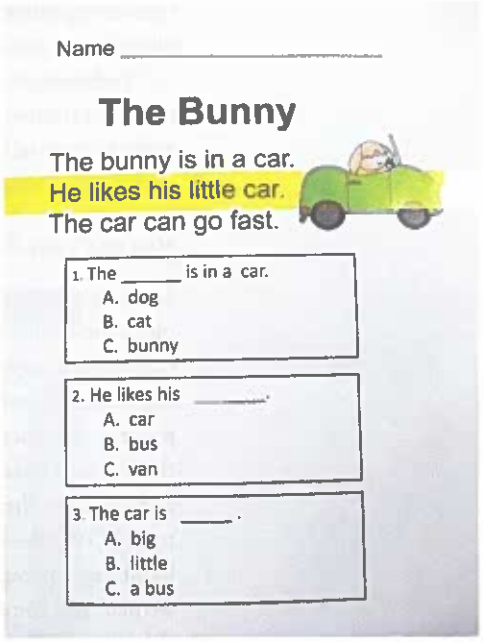
Low-Tech Reading Assistive Technology

When deciding on assistive technology, IEP teams should always first consider low-tech, of which there are a number of options for reading. There is not always a research base, however, on using the tools and devices for students with disabilities. Some common low-tech reading-based assistive technologies include

TABLE 5.5 ■ Assistive Technology Examples for Content-Area Instruction

	Low-Tech	Mid-Tech	High-Tech
Reading	• Highlighter strips or tape • Picture symbols	• ReadingPen • Books on CD or Kindle	• Text-to-speech • E-readers or supported e-text, digital textbooks
Writing	• Pencil grips • Raised lined paper		• Speech-to-text • Word prediction
Mathematics	• Concrete manipulatives • Number lines • Graph paper	• Calculators (e.g., four-function, graphing)	• Virtual manipulatives • Math apps

highlighter pens, highlighter tape (nonpermanent), and highlighter strips—strips of colored, transparent film that students can use to guide their reading. Another low-tech means for providing support for reading is the placement of picture symbols in written text to provide additional support for comprehension (Shurr & Taber-Doughty, 2012).


Name _____

The Bunny

The bunny is in a car.
He likes his little car.
The car can go fast.

1. The _____ is in a car.
A. dog
B. cat
C. bunny

2. He likes his _____.
A. car
B. bus
C. van

3. The car is _____.
A. big
B. little
C. a bus

Highlighter strips can serve as a low-tech assistive technology for students with reading difficulties.

Courtesy of Anne Gardner, NBCT, at http://commoncoreconnectionusa.blogspot.com/

Mid- and High-Tech Reading Assistive Technology

As technology advances, fewer mid-tech devices exist as more high-tech assistive technology devices and tools support reading. Perhaps one of the most common technologies to consider for students who struggle with reading is text-to-speech. Text-to-speech, known by different names depending on its application (for example, screen readers when accessing text on a computer, or e-text) (Anderson-Inman & Horney, 2007), is essentially printed or digital text spoken aloud to the reader; in other words, there is a voice output. A research meta-analysis—or synthesis of the research—on text-to-speech or associated tools to support read-aloud accommodations for students with disabilities suggested such technology aids in reading comprehension (Wood et al., 2018).

Many different types of text-to-speech options exist. For example, there is the C-Pen Reader 2TM, which allows users to scan printed text (Scanning Pens, 2023). A number of computer-based text-to-speech programs exist, including both free and for-purchase options. One free option, although one can also purchase its upgraded features, is NaturalReader (www.naturalreaders.com) (NaturalSoft Limited, 2019). NaturalReader is a downloadable option that provides natural-sounding voices and also highlights the text as it is read on Word documents, websites, PDFs, and emails on both PCs and Mac computers. Students can adjust the volume and pace of a voice even with the free version. For-purchase text-to-speech programs also exist, such as Read&Write. The program provides auditory text with simultaneous text highlighting on a computer; this can be done by purchasing an application or adding an extension to one's browser. There is also an iOS app version, with in-app purchases that support text-to-speech, word prediction, and spelling and grammar help.

Closely related to text-to-speech is **e-text** or **supported e-text**. E-text is electronic text, and supported e-text is enhanced e-text, which includes additional features to benefit students such as linked dictionaries (Anderson-Inman & Horney, 2007). Use of e-text is related to the National Instructional Materials Accessibility Standard (NIMAS), which mandated that students with print disabilities receive access to accessible text, including digital text (National Center on Accessible Instructional Materials, 2011). Several specifically designed e-text readers were developed following NIMAS, which supported a file format referred to as Digital Accessible Information System (DAISY) Digital Talking Books. ReadHear™, by gh, LLC, is one such technology. ReadHear™ offers many of the same features as text-to-speech programs, including synthesized speech and text highlighting. It also offers

magnification and can be used through keyboard shortcuts for individuals with visual impairments. In addition, commercially available products, such as Kindle, Nook, and iPad, are popular for providing e-text or e-books to students or anyone. Libraries offer patrons an opportunity to check out digital books for mobile devices. However, not all e-readers meet the accessibility needs of all students, such as students with visual impairments. If a student does use an e-reader, they can acquire text from multiple places, including Amazon.com and other online sellers (for example, Barnes & Noble), as well as take advantage of free e-books, including those from iTunes, Bookshare (www.bookshare.org), and Project Gutenberg (www.gutenberg.org).

Writing

Writing is another critical skill, but it often gets less attention than reading (National Commission on Writing for America's Families, Schools, and Colleges, 2005). Writing is complex and multifaceted, involving not just technical elements like handwriting and spelling but also the processes of planning and organizing, generating and drafting text, and then editing and revising (Flower & Hayes, 1981). All of these components, from handwriting to planning to writing to revising, can cause challenges for students with disabilities (Mason et al., 2011). Students with disabilities can struggle across all domains of writing.

Technology, including assistive technology, impacts student performance. In 2017, NAEP also analyzed student writing for fourth and eighth graders, although many students accessed the writing portion via a tablet as compared to a laptop. NAEP concluded students who used a tablet had lower performance than those who used a laptop in 2017 (National Center for Education Statistics, 2019).

No- and Low-Tech Writing Assistive Technology

Many low-tech assistive technologies exist to support students with writing (see Table 5.4). For example, pencil grips and adaptive pens can help students with handwriting issues. Teachers can also use raised lined paper (a student can feel the lines of the paper), whiteboards, gel boards, and even shaving cream. Outside of the technical elements, no- and low-tech strategies can assist with the writing process. Advanced organizers such as procedural facilitators, graphic organizers, concept maps, and think sheets have a strong research base in terms of helping students with and without disabilities plan and organize their writing (Englert et al., 2007). Whether using the advanced organizer–based acronym POWER—planning, organizing, writing, editing, and revising (Mariage et al., 2000)—or the hamburger paragraph organizer—in which the top bun serves as a topic or main sentence; the meat, lettuce, and tomato function as supporting sentences; and the bottom bun is a concluding sentence (Mariage & Bouck, 2004)—these tools help students to structure their writing for improvement in quality and quantity.

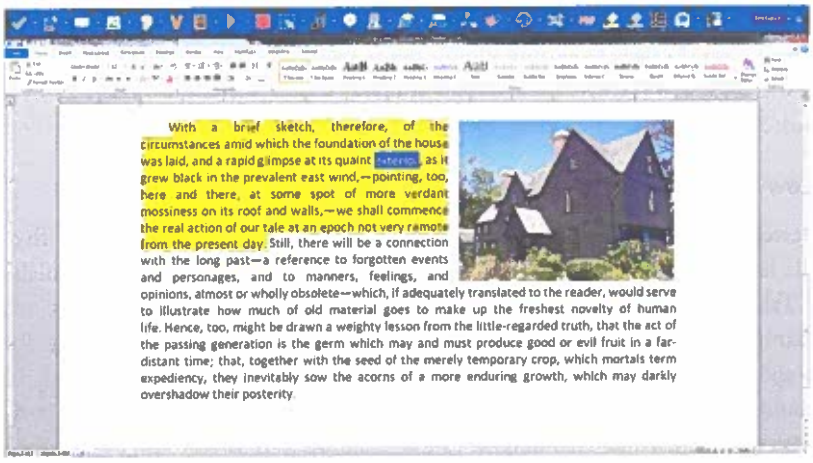
Pencil grips can serve as a low-tech writing-based assistive technology to support students with disabilities.

iStockPhoto/nadisja

Mid- and High-Tech Writing Assistive Technology

A number of mid-tech and high-tech technologies exist to support the writing process as well as the technical components of handwriting and spelling. For the prewriting portion of the writing process, planning and organizing, students can use computer-based concept mapping programs, such as the for-purchase Inspiration and Kidspiration (a for-purchase app) or the free options CmapTools or Cmap Tools for iPad (Institute for Human & Machine Cognition, 2023) and Visual Understanding Environment (Tufts University, 2019). Closely related to concept maps are mind maps. Such free and for-purchase mind map options include MindMeister (MeisterLabs, 2019). Many of these technology-based concept map and mind map programs are available to download for computers, to use online with computers, or to use as an app on tablets or other mobile devices. Computer-based concept maps are similar to paper-based concept maps, although students can edit more easily with the computer-based bubble.us options. In addition, some computer-based concept mapping programs come equipped with pictures to help students represent their ideas with images as well as words, and others include such built-in assistive technologies as text-to-speech and speech-to-text.

When writing or drafting, students can use a range of assistive technologies, including technology to actually get words on the paper as well as technology to select correct words. Speech-to-text enables a user to create Word documents, emails, and other digital documents from narrated speech rather than keystrokes. Historically, speech-to-text programs were associated with a fee, such as Dragon NaturallySpeaking (Nuance Communications, 2019) for PCs or Macs. However, free options exist. Many individuals are familiar with speech-to-text, given its standard feature on iPhones (such as voicing texts). Similarly, users of Macs can turn on Dictation and achieve speech-to-text when working.



Read&Write is one example of a text-to-speech and speech-to-text word prediction program

Aside from speech-to-text, word prediction is another feature that supports students in writing text. Word prediction programs predict what word an individual is typing, based on the letters, and provide suggestions (for example, as one types *h-o*, a word prediction program might suggest *home, house*, and *hole*) (MacArthur, 2009). Nowadays, word prediction is available on almost every device, such as one's phone when texting. However, for-purchase options exist, such as Co:Writer (Don Johnston, 2019), which is compatible with both PC and Mac computers and can also be an app for a tablet or a Chromebook app.

In terms of postwriting, students can use text-to-speech to receive auditory feedback on their writing as well as spelling and grammar check programs. The text-to-speech program NaturalReader can be used to support a student's editing and revising through reading the text the student transcribed into the computer. Obviously, students can use the built-in spell-check programs with their word processing software, such as Microsoft Word. However, other free or for-purchase programs may provide additional support. For example, Ginger Software (2023) is a spelling- and grammar-check program

that suggests different words when a word is grammatically correct and spelled correctly but out of context (for instance, with "I would like to *meat* her," Ginger would suggest "I would like to *meet* her"). Grammarly (2023) is also an option that supports grammar checking, and both can be added to the Chrome browser.

Several computer-based programs exist to support the writing process; however, having many separate programs to support a student across planning and organizing through editing and revising can be overwhelming to the student as well as the teacher. For-purchase options do exist to support multiple needs, such as speech recognition, word prediction, and grammar checking. Two such options include Read&Write (Texthelp, 2023) and WordQ (Quillsoft, 2023). Read&Write provides reading as well as writing support, including word prediction, speech recognition, text-to-speech, and grammar assistance (for example, checking verb tenses and homophones). Read&Write is available for Windows- and Mac-based operating systems, iPad and Android mobile devices, and a Chrome extension. The downloadable program WordQ, which is Windows and Mac compatible, combines text-to-speech and word prediction with speech-to-text (though the add-on program, SpeakQ, is compatible with Windows only).

Mathematics

Mathematics can be a challenging content area for students with and without disabilities, although individuals with disabilities often lag behind their peers in terms of mathematics in areas of fluency to conceptual understanding and from place value to fractions and algebra. The most recently available NAEP mathematics assessment data support the challenge mathematics can pose to students with disabilities (The Nation's Report Card, 2022a). The average score for fourth-grade students without disabilities was 240, and the average score for fourth-grade students with disabilities was 212. Similar results were found for eighth-grade students: The average score for students with disabilities was 243, and the average score for students without disabilities was 279 (The Nation's Report Card, 2022a).

No- and Low-Tech Mathematics Assistive Technology

Although fewer specifically developed technology options exist to support students with disabilities in mathematics in comparison to reading and writing, a number of technologies are available (Edyburn, 2004) (see Table 5.4). One of the most common low-tech assistive technologies for mathematics is concrete manipulatives. Concrete manipulatives are typically found in elementary and secondary classrooms and are considered an evidence-based practice for educating students with disabilities. In fact, one could question if elementary mathematics should be taught without concept manipulative. Students with disabilities, like all students, can be supported to solve a range of mathematics problems—algebra, integers, area and perimeter, and fractions—with concrete manipulatives (for example, base 10 blocks, algebra tiles, tiles, and fraction blocks).

Mid- and High-Tech Mathematics Assistive Technology

In terms of mid-tech or high-tech assistive technology, common options include calculators, virtual manipulatives, anchored instruction, and computer-assisted instruction or apps (Bouck & Flanagan, 2009). Research on these areas suggests technology benefits students with disabilities, although most of the research involved students with more high-incidence disabilities like individuals with learning disabilities (Bouck & Flanagan, 2009; Maccini & Gagnon, 2005). Calculators—four-function, scientific, graphing, and online—historically were one of the most common accommodations for students with disabilities on IEPs (Maccini & Gagnon, 2000, 2006); calculators are still routinely used in general and special education classrooms. Calculators can help students with disabilities who struggle with basic facts or working memory challenges when solving word problems. Virtual manipulatives are similar to concrete manipulatives but available on a computer or mobile device through an app. In fact, almost every concrete manipulative is also available as a virtual manipulative that can do everything concrete manipulatives do but in a virtual space (that is, on a computer or mobile device via an app). A common means of delivering virtual manipulatives is through apps for mobile devices

(for example, iPads or Chromebooks). Multiple options exist for app-based virtual manipulatives. One company that offers a wide range of virtual manipulatives for Chromebooks, online, and in apps for tablets is Brainingcamp (see www.brainingcamp.com). Free options include the Math Learning Center (https://www.mathlearningcenter.org/apps) and Didax (https://www.didax.com/math/virtual-manipulatives.html).

Other Academic and Functional Performance Areas

Outside of the two main content areas in which students with disabilities struggle, literacy and mathematics, other content domains and academic or functional performance areas can be supported through assistive technology. Although limited, some assistive technology exists in the areas of science and social studies; however, the majority of the assistive technology for these two content areas can be drawn from literacy and mathematics. Assistive technology can also benefit the instruction of life skills, and specific tools and devices exist that can increase, maintain, or improve the capabilities of students relative to study skills like note-taking and organization.

Life Skills

Assistive technology can also help students learn life skills such as grocery shopping and food preparation. One particular category of assistive technology, self-operating prompting devices, supports students with disabilities in the acquisition of life skills. Students with intellectual disability, autism spectrum disorders, and other disabilities use such technology (for example, picture prompts, smartphones, or mobile devices) to learn life skills (Ayres et al., 2013; Mechling, 2007). In fact, video modeling or video prompting—a form of self-operated prompting device—is routinely used to support life skills for students with intellectual and developmental disabilities and is considered evidence-based practice in teaching life skills to students with intellectual disability (Park et al., 2019; Stierle et al., 2023). Nonimmersive and immersive virtual reality and artificial reality is also being used to support students with disabilities in acquiring life skills (Bridges et al., 2020; Cheung et al., 2022).

WatchMinder is an assistive technology device that can provide prompts to students to assist with organization.

WatchMinder is the Registered Trademark of Laurence D. Becker, PhD.

Organization and Management Skills

Executive functions, such as organization and memory, as well as self-management skills, can be beneficial to students with disabilities, who often struggle with these areas. Teachers suggest a relationship between such executive functions (for instance, meeting deadlines, following directions, or being prepared) and academic performance (McMullen et al., 2007). Multiple low-tech through high-tech options exist to support students with disabilities in organization and self-management.

Students can use common technologies such as handheld devices (smartphones) or wearables (AppleWatch) to record reminders for themselves or to serve as an alarm. Specifically designed technologies for these purposes also exist, such as the WatchMinder (2023), a programmable sports watch that can set 30 alarms (for example, "study for test" or "take medication") and offers preprogrammed messages.

Technology can also assist students with disabilities in note-taking. One common technology marketed to support anyone with note-taking is a Livescribe™ smartpen. With a Livescribe™ pen, when a student writes on the specifically designed paper, they are not only taking written notes but can also record the conversations or lectures occurring. If a student wants to go back to their notes, when the student taps on a specific place on the paper, the audio will actually play from that point. The Livescribe™ pen is also only slightly larger than a typical pen. Apps for mobile devices also exist that offer features similar to those of a Livescribe™ pen. Two popular note-taking-based apps are Notability by Ginger Labs (2023) and Evernote (2023).

Assistive Technology and the Young Child

As previously noted, assistive technology considerations are mandated for children served under IDEA. Hence, assistive technology considerations also apply to children from birth until age 3 who are served via an individualized family service plan. While many of the assistive technology devices and tools discussed in the following chapters are applicable to young children, there are some unique assistive technology considerations. Adaptive toys and games represent one category of assistive technology (Bryant & Bryant, 2003). For example, battery-operated toys can easily be modified to work with a switch through acquisition of a copper wafer. In addition, companies create accessible or adaptive toys for young children, such as triangular crayons, crayon rocks, or crayons with knobs for better grasping. Young children can also take advantage of adaptive utensils or other dishes. In addition, young children are prime candidates for repurposing everyday technology and items to be assistive technology, such as a Hula-Hoop to keep objects within grasp or a cookie sheet with objects affixed with magnets.

ISSUES WITH ASSISTIVE TECHNOLOGY

Although assistive technology offers much potential for students with disabilities, there are challenges with assistive technology that educators need to take into consideration. Despite the benefits of assistive technology, the use of various tools and devices may stigmatize some students. This occurs when individuals use a technology in a general education classroom that makes them stand out or makes them feel as if they do (Parette & Scherer, 2004). For example, if a student struggles to read independently but is the only one in the class reading on a computer, they may feel that use of the technology is stigmatizing. Avoiding **stigmatization** in the selection of assistive technology is important, as feeling different can lead to assistive technology **abandonment**, whereby the student quits using the tool. Hence, when the IEP team members consider the use of assistive technology, it is important that they also examine the student's interests, attitudes, and sense of self-confidence as well as the context in which the assistive technology will be used.

Assistive technology allows children to engage with a variety of toys.

AbleNet. Reproduced with permission.

Another important issue for assistive technology is ensuring that all parties receive adequate training or possess sufficient knowledge to correctly implement the technology. The use of technology can be overwhelming to many individuals, including students, teachers, related service providers, and parents. To help ensure successful assistive technology implementation and minimize abandonment, students, teachers, other educators, *and* parents

need to receive training on how to use the tool as well as how to support the individual in using the tool (Lee & Templeton, 2008). Some school districts may have assistive technology specialists to support the implementation and training of assistive technology devices; however, in other situations, professionals and parents may have to rely on instructional technologies, occupational therapists, or special education teachers for support and training (Bausch et al., 2008).

Cost is another challenge with assistive technology, although cost cannot explicitly be a decision-making factor (Bryant & Bryant, 2003). Assistive technology devices can run the gamut in terms of cost, from free to expensive. See Table 5.6 for examples of free or low-cost assistive technology software and apps. Another consideration besides cost, stigmatization, and training issues is to repurpose everyday technology, such as iPads or Livescribe™ pens, as assistive technology tools for students with disabilities (Bouck, Shurr, et al., 2012).

TABLE 5.6 ■ Free Assistive Technology Examples: Software and Apps

	Literacy	Mathematics
Software/Internet-based	• NaturalReader (text-to-speech)	• National Library of Virtual Manipulatives (virtual manipulatives)
Mobile technology apps	• NaturalReader (text-to-speech)	• Photomath (scan a problem and the app solves it) • Math Learning Center apps (virtual manipulatives)

Finally, with increased use of mobile devices and apps to provide assistive technology and instructional technology, teachers and other education professionals need to be savvy consumers. In other words, educators need to think critically about apps and to validate their educational use, including those used for assistive technology purposes (see Table 5.7 for examples of apps).

TABLE 5.7 ■ Example Apps by WATI Assistive Technology Purpose

Select Wisconsin Assistive Technology Initiative (WATI) Categories	Examples of Apps
Communication	• Proloquo2Go® • Scene Speak
Computer access	• The Right Dvorak • Microsoft SwiftKey AI Keyboard
Activities of daily living	• Photos • Movies
Motor aspects of writing	• Dragon Anywhere
Composition of written material	• NaturalReader
Reading	• GoRead • Kindle
Mathematics	• Photomath • Brainingcamp apps (e.g., Algebra Tiles, Base Ten Blocks)
Organization	• Notability • Reminder
Vision	• Color ID • NantMobile Money Reader
Hearing	• FaceTime • Sign 4 Me

Although a standard rubric or model does not exist for evaluating apps for mobile devices for all students, let alone students with disabilities, some options do exist. For example, the website Learning in Hand (learninginhand.com/blog/ways-to-evaluate-educational-apps.html) offers a variety of rubrics educators can use to make decisions about apps. Educators need to think critically about the apps they are using; for example, some apps are free while others are not. Prices can vary from $0.99 to hundreds of dollars. There is not necessarily a correlation between the cost of an app and its quality. Although the education and special education lists on iTunes offer educators one place to start, these lists should not be taken at face value. Nor should Internet-based lists of apps for particular topics in special education (for example, functional life skills) be used without scrutiny. Educators need to read each app's description as well as carefully consider the reviews. Although apps can benefit students with disabilities, as assistive and instructional technologies, they can do so only if careful attention is given to their selection and implementation, which can be time-consuming.

CHAPTER IN REVIEW

Technology in Education (Learning Objective 5.1)

- Multiple types of educational technology exist, including assistive technology.

Assistive Technology (Learning Objective 5.1)

- Assistive technology devices are *anything* that can benefit a student with a disability.
- Assistive technology services are services that support the selection, acquisition, implementation, and maintenance of assistive technology tools and devices.
- Assistive technology can be categorized by levels of technology, including no-tech, low-tech, mid-tech, and high-tech.
- Assistive technology can also be categorized by purpose, such as positioning, mobility, augmentative and alternative communication, computer access, adaptive toys and games, adaptive environments, and instructional aids.

History and Legislation of Assistive Technology (Learning Objective 5.3)

- Assistive technology was first included in the 1990 reauthorization of IDEA, although development and use of assistive technology by students with disabilities predate its inclusion in the 1990 authorization of IDEA by more than a century.
- The 1997 reauthorization of IDEA mandated the consideration of assistive technology for *all* students with disabilities, including students with high-incidence disabilities.

Assistive Technology Decision-Making (Learning Objective 5.3)

- Frameworks exist to support assistive technology decision-making by IEP teams, including the SETT framework.
- Within an IEP, assistive technology supports goals and short-term objectives as a related service or accommodation.

Assistive Technology Devices (Learning Objectives 5.4 and 5.5)

- Multiple low-tech (highlighter strips) and high-tech (text-to-speech) assistive technologies exist to support students in reading.
- Challenges with handwriting, spelling, and the writing process can be supported through low-tech (pencil grips) and high-tech (speech-to-text and word prediction) assistive technology.
- In mathematics, low-tech (concrete manipulatives), mid-tech (calculators), and high-tech (virtual manipulatives) technologies all can support students with disabilities.

- Assistive technology devices also support students in organization as well as other executive functions, such as attention or memory.

Assistive Technology Issues (Learning Objective 5.6)

- Assistive technology abandonment is a concern for students with disabilities.
- To minimize abandonment, IEP teams need to consider the potential stigmatization associated with use of devices or tools and ensure that students, teachers, other educators, and parents all receive the training to use the technology.

STUDY QUESTIONS

1. How does educational technology differ from assistive technology?
2. What is the difference between assistive technology devices and assistive technology services?
3. Who provides assistive technology services?
4. Describe the different levels of assistive technology and provide an example of each.
5. Identify different purposes of assistive technology and give an example of each type.
6. What can IEP teams use to aid in assistive technology decision-making?
7. What can schools and school personnel do to avoid assistive technology abandonment?

KEY TERMS

educational technology
assistive technology device
assistive technology service
assistive technology specialist
print disabilities
instructional technology
e-text
supported e-text
stigmatization
abandonment

LEARNING ACTIVITIES

1. Search for your state's assistive technology program. Determine what assistive technology is available through the lending library and what other resources or supports the program offers.
2. Visit several elementary and secondary classrooms in your area. What assistive technology is being implemented to support students with disabilities in content-area learning? Ask the teachers about the perceived benefits and challenges of using the assistive technology devices.
3. Visit the college or university office on your campus that provides services to students with disabilities. Inquire about the assistive technology services that are offered to students who qualify for such services. If possible, visit the area that provides assistive technology and explore the technology that is available to help students with disabilities achieve success in the classroom.
4. Search online for the free content-area assistive technology mentioned in this chapter. Explore the assistive technology online or by downloading it to a computer. Critically examine these assistive technology tools. Evaluate them for ease of use, challenges with implementation in a classroom, the benefits they may provide to a student with a disability, and if such assistive technology could be made available to all students.

REFLECTING ON STANDARDS

The following exercises were designed to help you learn to apply the Council for Exceptional Children (CEC) standards to your teaching practice. Each of the reflection exercises that follow correlates with knowledge or a skill within the CEC standards. For the full text of each of the related CEC standards, please refer to the standards integration grid located in Appendix B.

Focus on Curricular Content Knowledge (CEC Initial Preparation Standard 3.1)

Reflect on what you learned in this chapter about assistive technology to support content-area learning for students with disabilities. As a general or special education teacher, what assistive technology would you recommend considering or discussing at the IEP team meeting if a student struggles with handwriting? Mathematical computation? Decoding words? Or staying organized and on task?

Focus on Instructional Planning and Strategies (CEC Initial Preparation Standard 5.2)

Reflect on how you use technology to support your own learning or daily living activities. How does using the technology make you feel? Does it allow you to complete your work or activities faster or easier? What if you were not allowed to use such technology—how would that impact your learning or daily life activities?

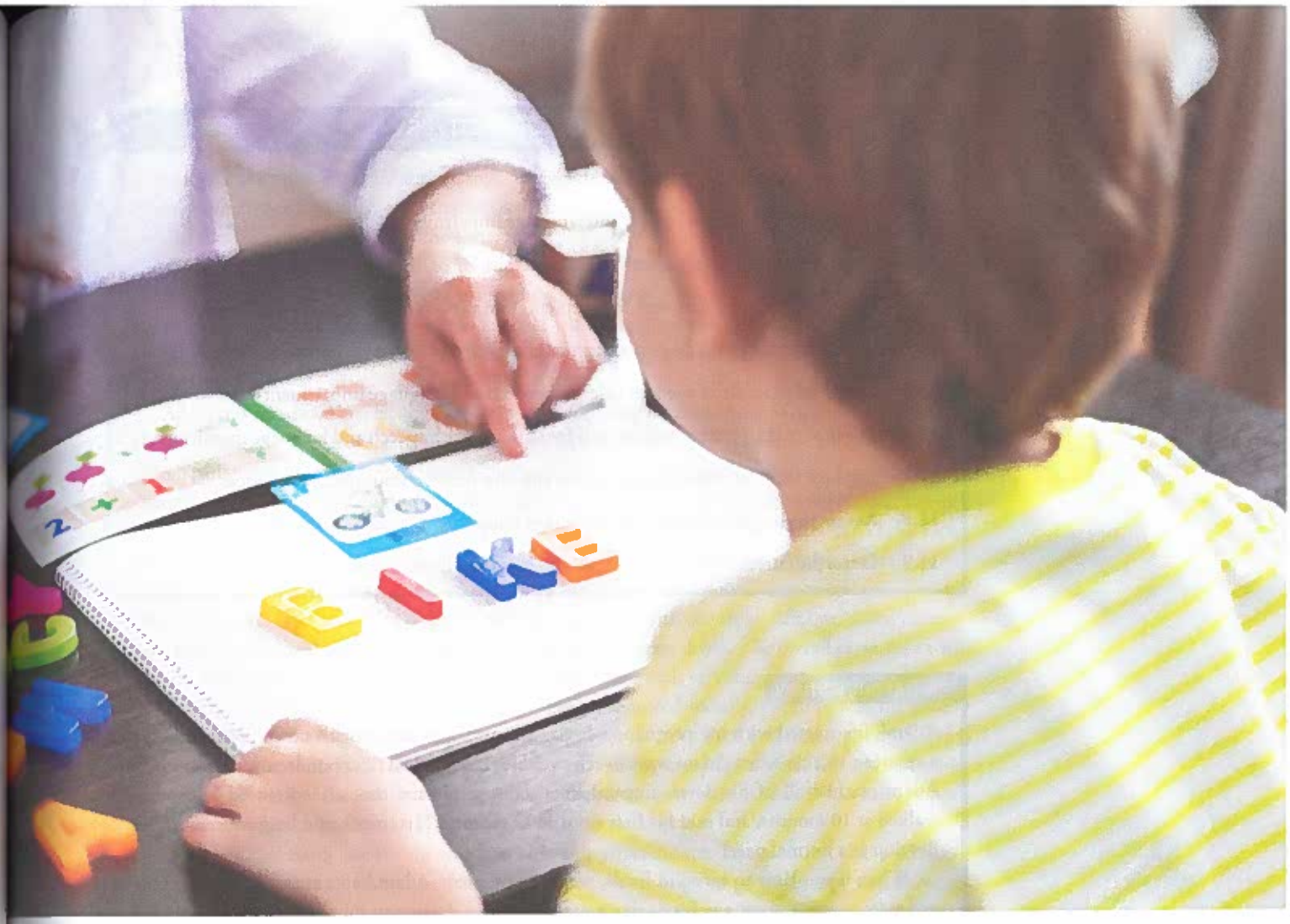
ORGANIZATIONS CONCERNED WITH ASSISTIVE TECHNOLOGY

Assistive Technology Industry Association (ATIA)
info@ATIA.org
www.atia.org

Center for Applied Special Technology (CAST)
cast@cast.org
www.cast.org

Innovations in Special Education Technology (formally TAM), Council for Exceptional Children (CEC)
www.isetcec.org/about/contact
www.isetcec.org

Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)
www.resna.org



iStockPhoto/Andrii Zori

11 INDIVIDUALS WITH SPEECH AND LANGUAGE IMPAIRMENTS

LEARNING OBJECTIVES

After reading Chapter 11, you should be able to:

11.1 **State** the prevalence of speech and language impairments.

11.2 **Define** speech, language, and communication.

11.3 **List** different types of speech impairments and various forms of language disorders.

11.4 **Identify** functional and organic causes of speech and language impairments.

11.5 **Describe** procedures used for assessing speech and language impairments.

11.6 **Discuss** educational considerations for students with speech and language impairments.

11.7 **Explain** the function of augmentative and alternative communication devices.

11.8 **Assess** the impact of speech and language impairments across the life span.

11.9 **Describe** current issues with speech and language impairments.

A Parent's Story

Adam's life started with my pregnancy. It was a normal pregnancy with no complications. I had a cesarean section when Adam was a week overdue. He weighed 9.5 pounds, a very healthy baby. Adam reached all of his developmental milestones at normal times. He crawled at 6 months, walked at 10 months, and said his first word at 12 months. His speech and language continued to develop at a normal pace.

When it was time to eat solid foods, we had a problem. Adam had a strong gag reflex and did not seem to want to eat any foods that were not puréed. I came to the conclusion that he was not just picky. In addition, Adam drooled a great deal until he turned 3. I knew this was a lot longer than normal. I talked to the pediatrician about the eating and drooling. He said it was probably from teething and told me to keep introducing foods—eventually Adam would eat them.

When Adam was about 2 years old, I noticed that he could not pronounce *n, t, d, l,* and *s* correctly. I knew that *l* and *s* were not supposed to be mastered until the age of 4. I just thought he would master these by the time he was 4.

My husband, Rick, and I started to notice a great deal of frustration in Adam, who was now 3. What was the cause of it? We did not know and assumed it was age related. He did not seem to understand punishment. We would ask him why he was on his "thinking bench," and he could never answer. He would get more upset and answer something inappropriate. We would go to the pool during the summer. Adam would ask at least 10 times, "Where are we going?" I would answer and could tell he just did not understand. I would try to rephrase, and sometimes this would help. Adam did not seem to understand simple directions, question words (*why, how*), sequencing, verb tense, and common language concepts. All of these things were very subtle, and other people did not notice. He was not acquiring language concepts that children learn without formal teaching, and his pronunciation was not getting better.

In the fall, Adam started preschool. At this time, I was starting to put some of the pieces together and had some concerns. In October, I had a teacher conference and told the teacher of my concerns and asked her if she noticed anything. She did. I told her I felt like he would hear me but not understand what I said. She noticed that he did not understand yes and no questions, and when asked simple things that she knew he knew, he would say, "I don't know." He was still a very picky eater but would try a few new things and only eat a very small bite. The teacher recommended that we have him screened by the speech pathologist who was coming to the school in a few weeks.

Adam went to the speech and language screening, and we waited for the results. The speech pathologist sent home a brief report that gave his results and called us that night to discuss them. I remember it vividly, even that it was raining that night. She told me he had scored very low, in the 1% range for some of the tests, matter-of-factly telling me he needed to be evaluated fully and would possibly need to go to a special school. I was floored! I wish my husband had been on the phone with me to hear it for himself; I knew there were going to be many questions that I did not ask or have an answer for. I wondered how this could be so severe and how I could be that blind to the severity. I knew something was wrong, but I did not realize that it was this bad.

Adam was scheduled at a facility known in town for being on the cutting edge and recommended on the school list of places for referral. Rick and I both went to the evaluation and met with the speech pathologist afterward. She was very kind and supportive, giving us books to read and scheduling Adam's therapy. Adam was diagnosed with a mild to moderate language disorder, mild articulation difficulty, and low facial muscle tone. I felt very overwhelmed. What do we do now? How can I help? Does this mean he will have to struggle his whole life? How can I manage this? Rick was upset as well, but in a different way. He was defensive. He asked if Adam was stupid, and would he go to college? We were both dealing with fear and sadness that something was wrong with our child. After we talked more to each other and learned more about what was wrong, things settled down. The overall experience with the first speech pathologist was terrible, and the second time we felt very supported.

Adam is now 4 and has made great progress. He has matured socially, has improved his speech and language skills, and goes to occupational therapy as well. Both Rick and I incorporate therapy into everyday happenings. I feel like this is just a part of my everyday normal life and not a big problem. I primarily take Adam to therapy. Rick takes him sometimes as well. It has been important for both of us, as parents, to stay involved with his therapy.

I still wonder about the future and how this will affect Adam. I have to put that aside and do the best that I can now, hoping for the best later. Adam likes to go to therapy and is much less frustrated. Because he was diagnosed and started therapy at such a young age, his future will be bright.

—Lori Smith

Although Adam's mother does not mention an individualized education program (IEP), Adam may have been one of the almost 268,600 preschoolers who received services under the speech or language impairment category of the Individuals with Disabilities Education Improvement Act (IDEA, 2004) during the 2020–2021 school year (U.S. Department of Education, 2023). Services for young children like Adam will be described later in this chapter.

The main focus of this chapter is on students who demonstrate communication difficulties that are not the result of or directly associated with another disability. The disability category under which these children are served is *speech or language impairment*. The communication difficulties of children who have a primary disability other than speech or language impairment are noted but not discussed since they are addressed in other chapters. First, we will introduce the discussion of speech and language delays and disorders with a review of the nature of speech, language, and communication.

By age 2, most children are producing short but intelligible sentences.

iStockPhoto/fizkes

PREVALENCE AND HISTORY OF SPEECH AND LANGUAGE IMPAIRMENTS

Speech and language impairments are considered a high-incidence disability. According to the U.S. Department of Education (2023), less than 20% of students receiving special education services are receiving services for speech and language impairments. This estimate does not include children who receive services for speech and language impairments that are secondary to other conditions such as deafness. During the 2020–2021 school year, approximately 1,183,000 individuals ages 5 to 21 were identified as having speech and language impairments (U.S. Department of Education, 2023).

Children with speech and language disorders represent slightly more than one third of all preschoolers receiving a special education. Approximately 36% of all 3-, 4-, and 5-year-olds with a disability exhibit speech and language impairments. The U.S. Department of Education (2023) reports over 268,600 preschoolers in this category.

Educational programming and intervention for students with speech and language impairments have been available since the early 20th century. In 1910, the Chicago public schools hired the first "speech correction teachers." In 1925, the American Academy of Speech Correction was established—the forerunner of today's premiere professional organization, the American Speech-Language-Hearing Association (ASHA). Until the 1950s, school-based speech–language pathologists had many titles, including *speech correctionists, speech specialists,* and *speech teachers.* Van Hattum (1969) credits a growing understanding of language development and skills in the identification and remediation of language disorders for the change to the term *speech therapist.* Students typically worked with speech therapists in large groups, primarily at the elementary school level.

As the profession continued to expand and professionals in the field of speech and language disorders practiced in a wider variety of settings, specialists generally adopted a medical/clinical model, leading to the presently used term *speech–language pathologist.* Today, speech–language pathologists work in a wide variety of settings, including rehabilitation centers, nursing care facilities, health departments, and, of course, public and private schools. General and special education teachers work most frequently with school-based speech–language pathologists.

THE NATURE OF SPEECH, LANGUAGE, AND COMMUNICATION

Of all the singular gifts bestowed on humans, the acquisition and use of language is undoubtedly the most miraculous. Most people give little thought to this remarkable achievement that begins in the womb. Even before they are out of diapers, most children have a vocabulary of 50 words or more, and by age 2, they are producing short but intelligible sentences. Three-year-olds are chatty and engaging as they begin to acquire the rules for tense and number, often overextending them to produce amusing statements like "I seed two mouses in the picture." At this age, they are also discovering that words have different meanings depending on how you string them together. By kindergarten, most children have an impressive vocabulary, typically in excess of 2,000 words. Table 11.1 shows the amazing accomplishments of language learning. When attainment of any of the milestones shown in Table 11.1 is delayed or there is a disturbance in one or more of the components necessary for communication, the child is at risk for a language disorder.

It is important to begin by differentiating the concepts *speech, language,* and *communication* so that you can be as precise as possible when you talk about speech and language impairments with other professionals. You are familiar with the three terms, but you may have used them interchangeably, and they have very distinct meanings. **Speech** is the expression of language with sounds—essentially the oral modality for language. Compared to other ways of conveying ideas and intentions (e.g., manual signing, writing, gesturing), speech is probably the most difficult. Humans are not the only species to produce sounds, but we are the only species with a vocal tract that permits production of the variety and complexity of sounds required for speech. Speech production depends on precise physiological and neuromuscular coordination of (1) respiration (the act of breathing), (2) phonation (production of sound by the larynx and vocal fold), and (3) articulation (use of the lips, tongue, teeth, and hard and soft palates to form speech sounds). Speech is considerably more than a motor behavior. It is willed, planned, and programmed by the central nervous system—the brain, spinal cord, and peripheral nervous system.

TABLE 11.1 ■ Milestones for Acquiring Language

Age Range	Milestones in Language Development	
By age 1	• Recognizes name • Says first words • Imitates familiar words (echolalia)	• Understands simple instructions • Recognizes words as symbols for objects: hears "ball"—points to ball
Between 1 and 2 years of age	• Understands "no" • Uses 10 to 20 words, including names • Combines two words such as "Daddy bye-bye" • Waves goodbye and plays pat-a-cake • Makes the "sounds" of familiar animals	• Gives a toy when asked • Uses words such as "more" to make wants known • Points to their toes, eyes, and nose • Brings object from another room when asked
Between 2 and 3 years of age	• Identifies body parts • Carries on "conversation" with self and dolls • Asks "What's that?" and "Where's my?" • Uses two-word negative phrases such as "No want" • Forms some plurals by adding "s": "book," "books" • Has a 450-word vocabulary • Gives first name, holds up fingers to tell age • Combines nouns and verbs: "Mommy go" • Understands simple time concepts: "last night," "tomorrow" • Refers to self as "me" rather than by name	• Tries to get adult attention: "Watch me" • Likes to hear same story repeated • May say "no" when means "yes" • Talks to other children as well as adults • Solves problems by talking instead of hitting or crying • Answers "where" questions • Names common pictures and things • Uses short sentences like "Me want more" or "Me want cookie," matches three to four colors, knows big and little
Between 3 and 4 years of age	• Can tell a story • Has sentence length of four to five words • Has a vocabulary of nearly 1,000 words • Names at least one color • Understands "yesterday," "summer," "lunchtime," "tonight," "little/big"	• Begins to obey requests like "Put the block under the chair" • Knows their last name, name of street on which they live, and several nursery rhymes
Between 4 and 5 years of age	• Has sentence length of four to five words • Uses past tense correctly • Has a vocabulary of nearly 1,500 words • Points to colors red, blue, yellow, and green • Identifies triangles, circles, and squares	• Understands "in the morning," "next," "noontime" • Can speak of imaginary conditions such as "I hope" • Asks many questions, including "Who?" and "Why?"
Between 5 and 6 years of age	• Has a sentence length of five to six words • Has a vocabulary of around 2,000 words • Defines objects by their use (you eat with a fork) and can tell what objects are made of • Knows spatial relations like "on top," "behind," "far," and "near" • Knows their address • Identifies a penny, nickel, and dime	• Knows common opposites like "big/little" • Understands "same" and "different" • Counts 10 objects • Asks questions for information • Distinguishes left and right hand • Uses all types of sentences—for example, "Let's go to the store after we eat"

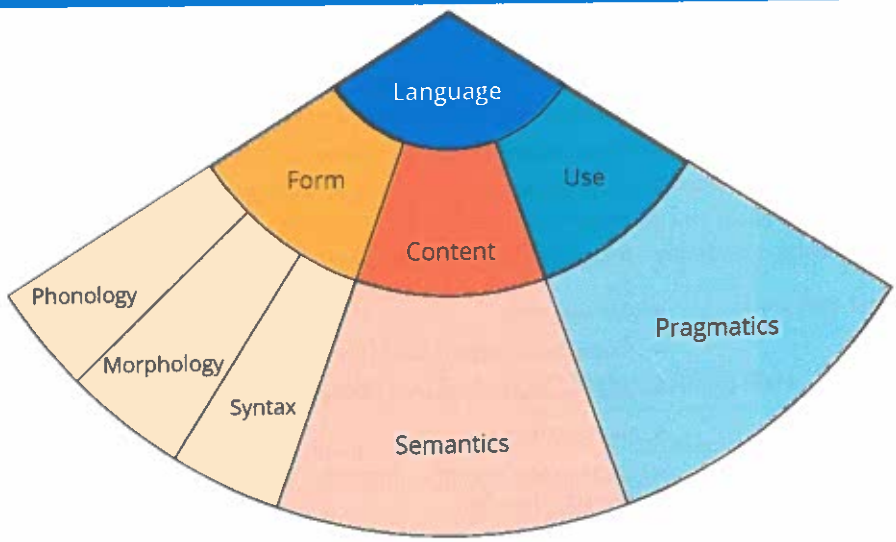
Source: Adapted from *Speech and Language Development Chart, 3e* [p. NA], by P. Kipping, A. Gard, L. Gilman and J. Gorman, 2012, Austin, TX: PRO-ED. Copyright 2012 by PRO-ED, Inc. Adapted with permission. This permission is granted in both print and electronic form.

Note: Some variation in reaching developmental milestones is common.

There is no single, widely accepted definition of **language** (Kuder, 2018). Many contemporary definitions of language parallel the one put forth by Bryant et al. (2024): a "rule-based method of communication relying on the comprehension and use of [arbitrary] signs and symbols by which ideas are represented" (p. 135). The main purpose of language, according to experts (Hoff, 2014; Owens, 2020), is communication or self-expression. Essentially, language is a social tool (Owens, 2020, 2024). In many ways, language can be thought of as a code. It is a code in the sense that it is not a direct representation of the world but, rather, something with which to represent ideas and concepts about the world. It is a very complex and multidimensional system of symbols and the rules for appropriately using these symbols.

What does it mean to *know* a language? It means that you are able to apply the basic units and the complex rules governing relationships among sounds, words, sentences, meaning, and use of the language. Language contains five major interrelated yet distinct elements (see Figure 11.1)—phonology, morphology, syntax, semantics, and pragmatics—that are present at both the receptive and expressive levels. These components, according to Owens (2020), represent the basic rule systems found in language. *Form* incorporates phonology, morphology, and syntax, or the elements that connect sounds or symbols with meaning. *Content* encompasses the meaning of words and sentences (semantics), while *use* addresses the social aspects of language, or pragmatics.

FIGURE 11.1 ■ Basic Components of Language



Source: Adapted from R. Owens, *Language Development: An Introduction*, 10th ed. (Hoboken, NJ: Pearson Education, 2020), p. 18.

Form. The **phonology** of language includes the sounds that are characteristic of that language, the rules governing their distribution and sequencing, and the stress and intonation patterns that accompany sounds. There are approximately 45 different speech sounds in the English language, which we call phonemes.

The **morphology** of a language includes the rules governing how words are formed from meaningful units called morphemes.

The **syntax** of language contains rules for how to string words together to form phrases and sentences, what sentences are acceptable, and how to transform sentences into other sentences. Knowledge of the syntax of a language allows a speaker to generate an infinite number of new sentences and recognize sentences that are not grammatically acceptable.

Content. At the most basic level, **semantics** is the linguistic realization of what the speaker knows about the world—what people talk about. Semantics is concerned with relationships (1) between words and meanings, (2) between words, (3) between word meanings and sentence meanings, and (4) between linguistic meaning and nonlinguistic reality.

Use. The major concern in **pragmatics** is the effectiveness of language in achieving desired functions in social situations. Attitudes, personal history, the setting, the topic of conversation, and the details of the preceding discourse are among the social and contextual factors that determine how

speakers cast their sentences (and how listeners interpret them). Table 11.2 summarizes these five components of language. You may wish to refer back to this table when you are reading about specific disorders later in this chapter.

TABLE 11.2 ■ Components of Language

Component	Definition	Receptive Level	Expressive Level
Phonology	The sounds characteristic of a language, the rules governing their distribution and sequencing, and the stress and intonation patterns that accompany sounds	Discrimination of speech sounds	Articulation of speech sounds
Morphology	The rules governing how words are formed from the basic element of meaning	Understanding of the grammatical structure of words	Use of grammar in words
Syntax	Rules for how to string words together to form phrases and sentences—the relationships among the elements of a sentence	Understanding of phrases and sentences	Use of grammar in phrases and sentences
Semantics	The linguistic realization of what the speaker knows about the world—the meanings of words and sentences	Understanding of word meanings and word relationships	Use of word meanings and word relationships
Pragmatics	The social effectiveness of language in achieving desired functions—rules related to the use of language in social contexts	Understanding of social and contextual cues	Use of language to affect others

Source: Adapted from L. McCormick, "Introduction to Language Acquisition," in L. McCormick, D. Loeb, and R. Schiefelbusch (Eds.), *Supporting Children With Communication Difficulties in Inclusive Settings*, 2nd ed. (Boston, MA: Allyn & Bacon, 2003).

Communication is the exchange of ideas, information, thoughts, and feelings. It does not necessarily involve speech. Examples of nonlinguistic communication behaviors are gestures, posture, eye contact, facial expression, and head and body movement. Nonlinguistic communication modes may be used as the only method of communication, or they may be used in conjunction with oral language. The communication process begins when a person has an idea or intention and wants to share it. The idea or intention is formulated into a message and then expressed to another person or persons. The other person receives the message and reacts to or acknowledges it. In any communication, there is always a potential for message distortion because of the many possible message modalities and the many possible connotations and perceptions of the communication partners.

The accompanying Insights feature illustrates one contemporary viewpoint on how young children acquire language.

INSIGHTS

THE GENETICS OF SPEECH

How Do We Learn Language?

It is safe to say that most 4-year-olds know nothing about subjects and verbs, direct and indirect objects, gerunds, participles, and infinitives. Yet they can talk your ear off in complete, complex sentences. So how do children learn to speak language so easily and with almost no adult instruction? Do they absorb it, or is it inborn knowledge?

According to University of Alabama at Birmingham linguist David Basilico, PhD, it's simply human nature. "Having and acquiring language is a biological property of being human, like having opposable thumbs," he says. Fifty years ago, however, behaviorists theorized that children learn everything they need to know from their environments. The problem with that conclusion is the "poverty of stimulus," Basilico explains. "There's just not enough information in what children hear in ordinary conversation to generate a full knowledge of English." Basilico says that most linguists now agree that humans have some genetic knowledge that makes learning language easy and natural, much like learning to walk. Babies aren't born with the complete English lexicon, of course, but they have an intuitive understanding of the rules and principles that underlie language, a concept known as "universal grammar." Basilico describes universal grammar as a menu of language possibilities. It provides a variety of options for the logical construction of a language—but not an infinite variety.

"Language picks and chooses from that menu," Basilico says. The constrained variation means that children don't have to listen to many sentences before they figure out the grammar for the entire language.

Clock Ticking on Talking

This remarkable ability has a time limit, however. "To acquire a language as a native, you have to be exposed to it very early," Basilico explains. Linguists once considered puberty the time when the language-learning system would "sort of freeze up," but now many believe it happens at a younger age, Basilico says. "Beyond this window, known as the critical period, you cannot learn a language as a native." That is why adults often face difficulties in becoming fluent in a foreign language.

Universal grammar also implies that all of the world's languages share an underlying system of rules and principles. "All human societies have language, and all languages are of equal complexity," Basilico says. "The more you study languages, the more you realize they have much in common." He adds that languages seem different due to their unique vocabulary choices and other superficial differences, "but on a deeper level, there are many similarities."

Universal grammar also does not apply to written language, which doesn't exist in all societies, Basilico notes.

Plug and Say

The theory that spoken language springs from a genetic source could have broad ramifications. Basilico and many other linguists believe that our innate language knowledge is "modularized"—that is, that the brain has a built-in "language module" in the same way that it has specialized modules for visual perception and other functions. But others argue that our language abilities are "a property of an all-purpose, general cognitive mechanism," he says.

That raises new questions about the relationship between language and thought; for example, does the language we speak shape the way we think and vice versa? Basilico is skeptical, but he says both the modular and general hypotheses present intriguing examples of how genes can shape behavior. "If we can answer questions about language," he muses, "who knows what that could lead to?"

Source: Adapted from C. Burgess, "The Genetics of Speech," *UAB Magazine, 29*(1), Spring 2010, p. 10. Used by permission of the Board of Trustees of the University of Alabama System for the University of Alabama at Birmingham.

IDENTIFYING SPEECH AND LANGUAGE IMPAIRMENTS

Speech and/or language impairments are problems in communication and related areas such as oral motor function. Delays and disorders may range from those so subtle that they have little or no impact on daily living and socialization to the inability to produce speech or to understand and use language. Fortunately, only a very small percentage of children are at the most extreme level of severity. However, because of the importance of language and communication skills in a child's life (or, for that matter, in anyone's life), even mild to moderate disorders or disturbances can have a profound effect on all aspects of life, sometimes isolating children from their peers and their educational environments.

Severe communication and language disabilities are most likely to occur secondary to pervasive cognitive, neurological, or physical disabilities. Table 11.3 provides an overview of language

TABLE 11.3 ■ Language Difficulties Secondary to Other Disabilities

	Phonology	Morphology/Syntax
Learning Disabilities	• Delayed acquisition of sounds • Inferior perception and/or production of complex sounds • Inefficient use of phonological codes in short-term memory • Impaired sensitivity to sounds	• Shorter and less elaborate sentences • Failure to encode all relevant information in sentences • Difficulties with negative and passive constructions, relative clauses, contractions, and adjectival forms • Confusion of articles (*a, an, the*) • Difficulty with verb tense, plurality, possession, and pronouns • Delayed acquisition of morphological rules • Difficulty with rules for auxiliaries, modals, prepositions, conjunctions, and other grammatical markers
Autism spectrum disorder	• Difficulties with expressive prosody (e.g., fluctuations in vocal intensity, monotonous pitch, tonal contrasts inconsistent with meanings)	• Confusions of pronominal forms (e.g., gender confusion [*he* for *she* or *it*], case substitution [*him* for *he*], first- and second-person singular forms [*you* for *I* or *me*]) • Less complex sentences than peers
Intellectual disability	• Delayed development of phonological rules • Problems with speech production	• Production of shorter, less complex sentences with fewer subject elaborations or relative clauses • Delayed morpheme development • Delayed development of syntax
Traumatic brain injury	• Sound substitutions and omissions • Slurred speech • Difficulties with speech prosody (pitch, loudness, rate, and rhythm)	• Deficits in syntactic comprehension • Fragmented, irrelevant, and lengthy utterances • Mutism immediately after the injury, followed by telegraphic production
	Semantics	**Pragmatics**
Learning disabilities	• Word-finding and definitional problems • Restricted word meanings (too literal and concrete) • Difficulty with multiple word meanings • Excessive use of nonspecific terms and indefinite reference • Difficulty comprehending certain conjunctions (*but, or, if, then, either*)	• Difficulty with questions and requests for clarification • Difficulty initiating and maintaining conversation • Difficulty with relational terms (comparative, spatial, temporal)
Autism spectrum disorder	• Word-finding problems • Inappropriate answers to questions	• Limited range of communicative functions • Difficulty initiating and maintaining conversation • Few gestures • Failure to make eye contact prior to or during communicative interactions • Preference to follow rather than lead in a conversation • Failure to engage communication partners at a level that requires sharing
Intellectual disability	• Use of more concrete word meanings • Slower rate of vocabulary acquisition	• Difficulty with speech-act development • Difficulty with referential communication • Difficulty initiating and maintaining a conversation • Difficulty repairing communication breakdowns
Traumatic brain injury	• Small, restricted vocabulary • Word-finding problems	• Difficulty with organization and expression of complex ideas • Socially inappropriate and off-topic comments • Less use of the naming function

Source: Adapted from L. McCormick and D. Loeb, "Characteristics of Students With Language and Communication Difficulties," in L. McCormick, D. Loeb, and R. Schiefelbusch (Eds.), *Supporting Children With Communication Difficulties in Inclusive Settings*, 2nd ed. (Boston, MA: Allyn & Bacon, 2003).

difficulties that are secondary to learning disabilities, autism spectrum disorder, intellectual disability, and traumatic brain injury. These communication difficulties are described in more depth in their respective chapters.

Formal Definitions

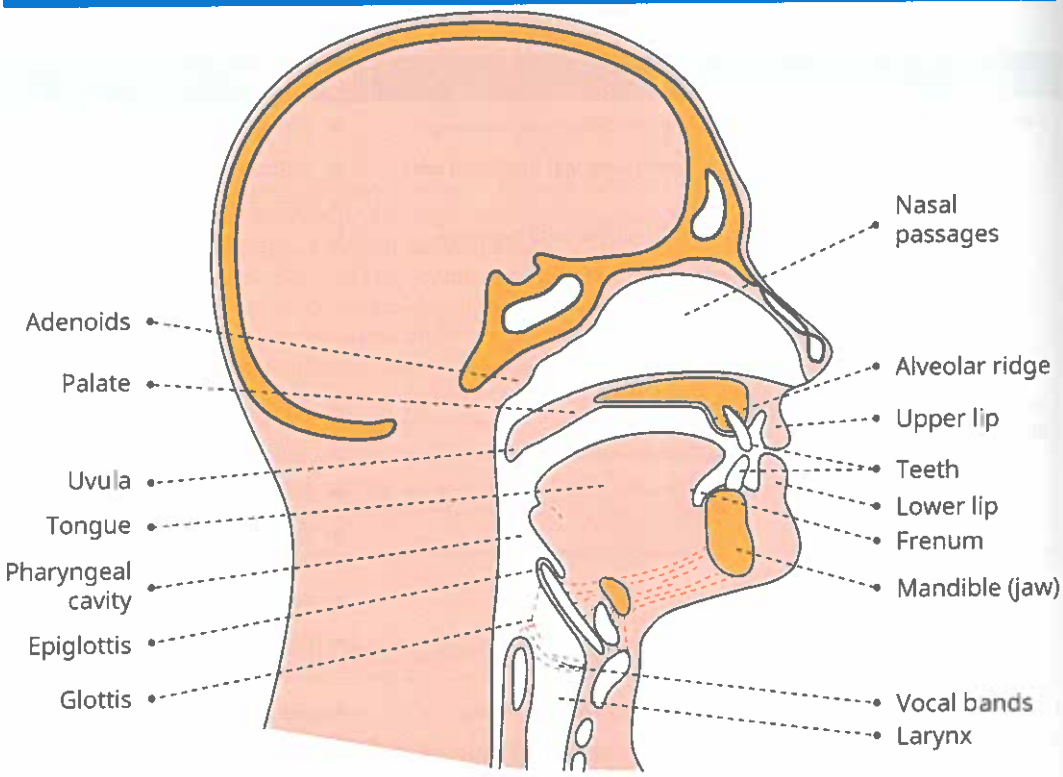
The IDEA 2004 (PL 108–446) label for students with communication difficulties is *speech or language impairment*. Children are eligible for services in this category if they have "a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child's educational performance" (34 C.F.R. § 300.8 [c] [11]). IDEA includes speech and language disorders under both special education and related services.

The American Speech-Language-Hearing Association (1993) defines a communication disorder as "an impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal, and graphic symbols systems. A communication disorder may be evident in the processes of hearing, language, and/or speech" (p. 40). Such impairments are typically classified into speech disorders, language disorders, and central auditory processing disorders.

Speech Disorders

Speech is the most common and the most complex mode for expression of language. It requires coordination of the neuromusculature of the breathing and voice-producing mechanisms, as well as integrity of the mouth or oral cavity. Figure 11.2 shows the organs used in speech production.

FIGURE 11.2 ■ Organs Typically Used in the Production of Speech



Simply stated, a speech impairment is present when the individual's speech deviates to such a degree that it interferes with communication, attracts unfavorable attention, and adversely affects the listeners, the speaker, or both (Bernthal et al., 2022). There are three basic types of speech impairments: articulation disorders, fluency disorders, and voice disorders.

One of the most prevalent of all speech problems is **articulation disorders** (Owens & Farinella, 2024). Articulation disorders are errors in the production of speech sounds. They include **omissions**

Voice disorders are problems with the quality or use of one's voice that result from disorders of the larynx. They are characterized by "the abnormal production and/or absences of vocal quality, pitch, loudness, resonance, and/or duration, which is inappropriate for an individual's age and/or sex" (American Speech-Language-Hearing Association, 1993, p. 40). Speech may be excessively hoarse or lack appropriate inflection. Voice disorders may be caused by temporary conditions, such as colds or allergies, chemically induced irritation, or vocally demanding activities, or more permanent abnormalities such as vocal nodules. Although voice disorders are more common in adults than in children, there are cases in which a child's voice is difficult to understand or unpleasant. The two types of voice disorders are phonation disorders and resonance disorders. The characteristics of a **phonation** disorder are breathiness, hoarseness, huskiness, and straining. In severe cases, the individual may not have any voice at all.

A **resonance** disorder may be characterized by **hypernasality** (too many sounds coming through the air passages of the nose) or **hyponasality** (too little resonance of the nasal passages). Hypernasality is often a result of cleft palate. Too much air passes through the nasal cavities during production of sounds, giving the speaker a distinctive "twang." Because the flow of air through the nostrils is impeded, the speaker with hyponasality sounds as if their nose is clamped or has a cold.

Language Disorders

How well children understand and use language affects not only their ability to learn to read and write but also the perceptions of peers, family members, teachers, and society at large. When a child starts school, the perception of their language skills becomes particularly influential. When children's communication skills do not match others' expectations, children are likely to be perceived negatively and may consequently experience less academic and social success (Owens, 2024). Speech–language pathologists and teachers have two responsibilities: (1) to address children's specific language difficulties and (2) to minimize the social impact of particular speech–language characteristics by promoting understanding and acceptance of language difficulties in the classroom.

Recall the components of language as reviewed in Table 11.2. Each of these five components of language (phonology, morphology, syntax, semantics, and pragmatics) has rules that must be mastered if the child is to have language competence. Language disorders occur when there is delay or difficulties with mastery in one or more of these areas.

A **phonological disorder** is defined as abnormal organization of the phonologic system or a significant deficit in speech production or perception. A developmental phonological disorder is the difficulty of organizing speech sounds into patterns. A child with a phonological disorder may be described as hard to understand or as not saying the sounds right—the child is likely to have difficulty decoding spoken language and may make substitutions for sounds. A child has a phonological disorder (as opposed to an articulation disorder) if they have the ability to produce a given sound and do so correctly in some instances but fail to produce the sound correctly at other times. Unlike articulation disorders, a phonological disorder reveals a pattern of responses and is therefore a rule-based phenomenon. Assessment for these children focuses on determining which sounds the child can produce, the contexts of correct and incorrect sound production, and the child's use or overuse of phonological processes. The focus of therapy for phonological disorders is to help the child identify the error pattern(s) and gradually produce more linguistically appropriate sound patterns.

Children learn the rules of language by listening and imitating what they hear.
iStockPhoto/FatCamera

Apraxia of speech is a neurological phonologic disorder that results from impairment of the capacity to select, program, or execute the positioning of the speech muscles to produce speech sounds. The speech mechanisms are operating, but the child cannot get them to operate properly—when the child wants to speak, they have difficulty planning what to say and which motor movements to use. The weakened or slowed processes affect speech prosody, stress intonation, and rhythm. The speech of these children is characterized by groping attempts to articulate sounds correctly. There are frequent speech-sound substitutions and omissions with sound-sequencing difficulties and distortions and obvious struggle to retrieve desired sounds and patterns.

Language develops within the context of social relationships.
iStockPhoto/kali9

Disorders involving morphology involve difficulties with morphological inflections. Morphological inflections (also called grammatical morphemes) are inflections on nouns, verbs, and adjectives that signal different kinds of meanings. For example, when you add the morphological inflection *-s* to dog, this signals plurality. Children with a **morphological disorder** have problems learning and using morphological rules. They use fewer grammatical morphemes and produce more grammatical errors than same-age peers.

Children with **syntactical deficits** have difficulty acquiring the rules that govern word order and other aspects of grammar such as subject–verb agreement. They have problems processing sentences, even relatively simple ones, and they typically produce shorter and less elaborate sentences with fewer cohesive conjunctions than their peers. Most evident is their inability to organize and express complex ideas.

Semantic disorders are characterized by poor vocabulary development, inappropriate use of word meanings, and/or inability to comprehend word meanings. Most evident are problems with word finding, the ability to generate a specific word that is evoked by a situation, stimulus, sentence, context, or conversation. Children with semantic difficulties also demonstrate restrictions in word meanings, difficulties with multiple word meanings, excessive use of nonspecific terms (e.g., *thing* and *stuff*) and indefinite references (e.g., *that* and *there*), and difficulties with comprehension of conjunctions and relational terms.

Children with **pragmatic difficulties** have problems understanding and using language in different social contexts. They do not understand how to infer their listeners' needs, so they do not know what and how much information they need to provide in an interaction. Other weaknesses include lack of understanding of the rules for (1) when and how to make eye contact, (2) how close it is permissible to stand when talking to someone, (3) when to request clarification of information, (4) how to interpret direct and indirect requests, and (5) how to introduce topics.

Table 11.4 presents indicators of a possible language impairment. These behaviors might suggest the need for an evaluation by a speech–language pathologist.

Central Auditory Processing Disorder

Defining **central auditory processing disorder (CAPD)** presents some difficulty because it has been the center of considerable controversy in the field of language disorders. Most authorities agree, however, that it is a problem in the processing of sound, not attributed to hearing loss or intellectual capacity. Simply stated, central auditory processing involves how we use and interpret auditory information. CAPD occurs when the ear and the brain do not work together as smoothly as they should. CAPD varies in degree from mild to severe. It may be the primary or secondary disorder, and it involves aspects of listening skills necessary for language development. In children with CAPD, these deficits are not the result of a hearing loss; hearing is usually normal. These children demonstrate problems with auditory

TABLE 11.4 ■ Behaviors Indicative of a Possible Language Impairment in Children

Child mispronounces sounds and words.

Child omits word endings, such as plural *-s* and past-tense *-ed*.

Child omits small unemphasized words, such as auxiliary verbs or prepositions.

Child uses an immature vocabulary; overuses empty words, such as *one* and *thing;* or seems to have difficulty recalling or finding the right word.

Child has difficulty comprehending new words and concepts.

Child's sentence structure seems immature or overreliant on forms, such as subject–verb–object. It's unoriginal, dull.

Child's question and/or negative sentence style is immature.

Child has difficulty with one of the following:

- Verb tensing
- Pronouns
- Word order
- Articles
- Irregular verbs
- Irregular plurals
- Auxiliary verbs
- Prepositions
- Conjunctions

Child has difficulty relating sequential events.

Child has difficulty following directions.

Child's questions are often inaccurate or vague.

Child's questions are often poorly formed.

Child has difficulty answering questions.

Child's comments are often off-topic or inappropriate for the conversation.

There are long pauses between a remark and the child's reply or between successive remarks by the child. It's as if the child is searching for a response or is confused.

Child appears to be attending to communication but remembers little of what is said.

Child has difficulty using language socially for the following purposes:

- Request needs
- Greet
- Respond/reply
- Relate events
- Pretend/imagine
- Request information
- Share ideas, feelings
- Entertain
- Protest
- Gain attention
- Clarify
- Reason

Child has difficulty interpreting the following:

- Figurative language
- Emotions
- Humor
- Body language
- Gestures

Child does not alter production for different audiences and locations.

Child does not seem to consider the effect of language on the listener.

Child often has verbal misunderstandings with others.

Child has difficulty with reading and writing.

Child's language skills seem to be much lower than other areas, such as mechanical, artistic, or social skills.

Source: Adapted from R. Owens, *Language Disorders: A Functional Approach to Assessment and Intervention*, 6th ed. (Boston, MA: Pearson Education, 2014), p. 337.

figure-ground (difficulty attending to a speaker when there is noise in the background), auditory memory, auditory discrimination (hearing the difference between similar sounds or words), auditory attention (maintaining listening focus), and auditory cohesion (e.g., drawing inferences from conversations, understanding riddles, and comprehending verbal math problems).

Children with CAPD process auditory input in a way that is slow and inaccurate, and they work harder to interpret what they hear than their classmates do. These children are at risk for noticeable listening difficulties in many classroom situations. For example, spelling tests and note-taking are activities often adversely affected by CAPD. Behavioral characteristics of children exhibiting signs of CAPD may also mimic those of children with learning disabilities, attention-deficit/hyperactivity disorder, or dyslexia.

The causes of CAPD are many and varied and may include head trauma, lead poisoning, and chronic ear infections, as well as unknown etiologies. A neurophysiological basis for this disorder is likely.

ETIOLOGY AND PREVENTION OF SPEECH AND LANGUAGE IMPAIRMENTS

Given the complexity of human communication, it is no surprise that there is the broad range of causes of speech and language impairments. Some may be preventable, in part, while others may lend themselves to a range of treatments.

Etiologies

The etiologies, or causes, of speech and language impairments can be broadly subdivided in several different ways. One way is to classify them into **functional** versus **organic** etiologies. Functional etiologies have no obvious physiological foundation, and the cause of the impairment is often unknown. An articulation disorder, for example, without a physical basis would be classified as a functional etiology. Organic etiologies, such as cleft palate, can be linked to a physiological deficit.

Additionally, impairments may be classified as congenital, developmental, or acquired. Congenital disorders are those existing at birth; developmental disorders emerge during the preschool years. Acquired disorders are usually the result of injury, disease, or environmental insult; they most frequently result in childhood **aphasia**, which is a loss or impairment of language functions. Causative factors for developmental disorders are largely unknown but may involve brain dysfunction, or they can be secondary to hearing loss or autism spectrum disorder. Such factors have important implications for prognosis and service delivery. Speech and language impairments can also be classified by age of onset, severity, and behavioral characteristics of the disorder (symptoms).

The etiologies of communicative disorders are frequently complex. Although most children evaluated by speech–language pathologists in schools exhibit functional disorders, familiarity with organic factors is also important for educators. Etiologies may include congenital malformations, prenatal injury, tumors, and problems with the nervous or muscular systems, the brain, or the speech mechanism itself. Exposure to teratogens, including X-rays, viruses, drugs, and environmental toxins, can also cause congenital disorders. During the first 6 to 12 weeks of embryonic life, many organs are being formed. Any agent capable of damaging one organ may affect various systems developing simultaneously. A prime example of such an agent is maternal rubella (German measles). When contracted during the first trimester of pregnancy, this teratogen is capable of causing multiple and concurrent congenital problems such as cardiac defects, cataracts, intellectual disability, microcephaly, short stature, hearing loss, and a variety of concurrent speech and language pathologies (Andescavage, 2019; Bell, 2007).

A cleft palate or cleft lip is one of the most common birth defects in infants.

Mechir/Alamy Stock Photo

Communication problems that result from disease or traumatic insult after birth are acquired disorders. Traumatic brain injury following a motor vehicle accident is an example of an acquired disorder that frequently has negative implications for

speech and language abilities. Meningitis, a disease resulting in inflammation of brain tissue, is a relatively common pediatric disorder. Complications of meningitis can result in hearing loss and associated communication deficit. Speech and language problems resulting from such an illness would represent an acquired communication disorder.

Articulation, voice quality, and fluency can be influenced by abnormalities in respiration (airflow in and out of the lungs), phonation (sound produced by the larynx), and vocal resonance (vibration within the vocal tract). Such disorders vary in degree and can occur in isolation, in combination with each other, or in conjunction with other language pathologies. Normal neurophysiology, as well as skeletal and muscular support for respiration and phonation, is necessary for speech skills to develop properly. The clinical entities presenting structural hazards to articulation include lips, teeth, and limited tongue mobility as well as a **cleft lip / cleft palate**. A cleft lip and cleft palate is a common congenital abnormality occurring about once in every 1,600 births, about 1 in every 2,800 babies is born with a cleft lip without a cleft palate, and 1 in 1,700 babies is born with a cleft palate (March of Dimes, 2023). Simply stated, a cleft lip/palate, which is recognized as an organic etiology, results from the failure of bone and palate tissue to correctly fuse during the early weeks of fetal development. Some infants are born with an opening in the roof of their mouth while others have a gap (cleft) in their upper lip. In some instances, babies have both. The severity of these conditions can greatly vary. Unfortunately, the etiology of these birth defects is not well understood (American Speech-Language-Hearing Association, 2023; March of Dimes, 2023). Hypernasal speech is fairly common in children with a cleft palate. Surgery and/or the use of a prosthetic, however, can often correct or minimize the impact of these structural defects.

Hearing loss, intellectual disability, learning disabilities, and emotional disturbance are also commonly associated with communicative disorders and have implications for language as well as speech development.

Prevention

It is difficult to assign differential responsibility to hereditary versus environmental factors (nature vs. nurture) when language is disordered. Because linguistic skills are so closely linked to academic performance, determinants of language abilities are of interest to all educators.

Any risk factor or disability that affects a child's cognitive, motor, and/or social development is also very likely to affect that child's language development, yet attempts to determine specific etiology are often not very productive. From the standpoint of prevention, however, it is useful to keep in mind the factors necessary for normal language acquisition. Four sets of variables seem to have a profound influence on language learning: (1) biological preparation, (2) successful nurturance, (3) sensorimotor experiences, and (4) linguistic experiences (McCormick, 2003a). The strongest evidence for the contention that language is a biologically determined capability comes from the fact that all cultures have language and all humans learn to talk (unless limited by sensory, neuromuscular, or cognitive impairment). As discussed earlier in this chapter, infants arrive in this world prepared to understand and use language. Their biological preparation includes neuromotor capabilities, an impressive supply of attentional and perceptual abilities, and a strong desire to interact with others. Successful nurturance requires a nurturing environment in which responsive adults carefully mediate the introduction of new stimuli. The dynamic regulation of stimuli is evident in caregiving rituals such as feeding and diapering, joint action routines (e.g., peek-a-boo), and a variety of other daily interactions. Adults use these exchanges to help infants learn the rules of turn taking, the meaning of particular gestures, imitation of sounds and gestures, and mutuality. Sensorimotor experiences are the means through which infants construct their understanding of the world by acting on it, both physically and mentally (Piaget, 1952). These experiences make it possible for infants to progress, in less than 2 short years, from being totally reflexive and largely immobile to becoming planful thinkers who can move about independently and communicate their intentions. Finally, linguistic experiences (called child-directed speech) undoubtedly play an important role in language learning. Caregivers facilitate language learning by continuously adjusting the phonologic, semantic, syntactic, and pragmatic characteristics of their speech when they address infants. If any one or

some combination of these factors is lacking or deficient, the child is at risk for language delay and/or disorders.

Language is possibly the most complex human behavior. Yet despite significant differences in child-rearing practices across cultures, almost all children develop normal native language at about the same chronological age. Most children appear to learn their language system in a matter of a few years without formal instruction. However, development of mature language skills requires an environment that provides substantial communicative interaction. In virtually every known culture, language develops within the context of social relationships—primarily the parent or caretaker relationship. Research suggests that variability in such relationships may account for at least some differences in linguistic skills.

Months of rich social and communicative exchange precede actual production or expression of language by the child. During infancy and early childhood, caregivers respond to nonlinguistic communications, decode linguistic attempts, and provide adequate models for shaping the expressions of language. When these interactions fail to occur, the child is at risk for **developmental language delay**. Delayed language means that a child is slow to develop adequate vocabulary and grammar, or language age does not correspond to the child's chronological age. Refer to Table 11.1, which lists some normal developmental milestones in language. Awareness of basic developmental guidelines is of the utmost importance for professionals involved in the education of the very young child, as communication disorders linked to developmental delays are less amenable to modification with increasing age.

ASSESSING INDIVIDUALS WITH SPEECH AND LANGUAGE IMPAIRMENTS

Language, as well as its associated pathologies, can be broadly categorized into two basic types: **receptive language**, or the ability to understand what is meant by spoken communication, and **expressive language**, which involves production of language that is understood by and meaningful to others (Friend & Bursuck, 2021). Children with language disorders have difficulty expressing thoughts or understanding what is said. Expressive language skills and possible areas of deficit include grammar, syntax, fluency, vocabulary, and repetition. Receptive language deficits address response, abstraction, retention, and recall issues. A student who is unable to follow directions efficiently in the classroom may have a receptive language disorder; the child who cannot communicate clearly because of poor grammar, insufficient vocabulary, or production problems such as an articulation disorder suffers from an expressive language disorder.

Children with language impairments often struggle socially as well as emotionally in the classroom, at home, and in community settings (Zaidman-Zait & Most, 2020). (See the accompanying First Person feature.) Some of the difficulties (Vaughn et al., 2018) you may observe in children with expressive language disorders include

- difficulty formulating questions,
- excessive repetition of information,
- incorrect grammar or syntax, and
- limited vocabulary.

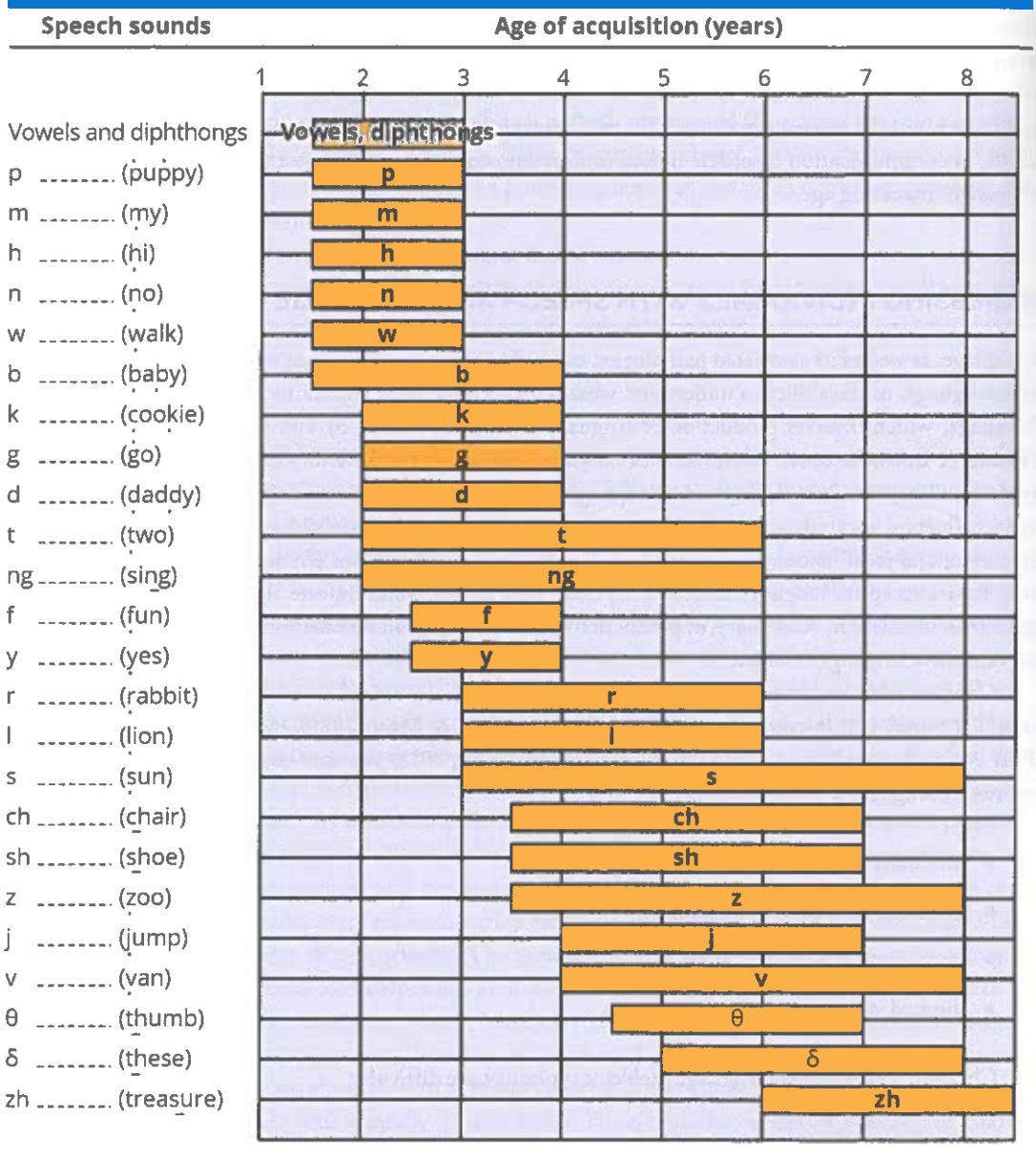
Children with receptive language problems typically have difficulty

- comprehending compound and complex sentences,
- following oral directions,
- responding to questions appropriately, and
- understanding humor or figurative language.

How do young children learn language? The answer to this question still eludes researchers, and conflicting theories abound. Beginning before age 2 and largely before age 4, most children acquire intelligible speech and possess a basis for developing adult grammar (McCormick, 2003a). However, there is substantial variability in the normal development of speech and language in children. For example, the age of mastery of various speech sounds may vary by as much as 3 years. Assessment at an early age must take this variability into account. By age 8, however, virtually all speech sounds in the child's native language should be correctly produced (see Figure 11.3).

Assessment is an important step in the habilitation and management of communication disorders. The purpose of assessing the child in whom language or speech problems is suspected should be to gain insight into their functional abilities, limitations, and perceived needs. A wide range of assessment tools, both formal and informal, is available to assess language and speech. Some of these tools are also

FIGURE 11.3 ■ Age of Acquisition of Speech Sounds



Sources: E. Sanders, "When Are Speech Sounds Learned?" *Journal of Speech and Hearing Disorders, 37*(1), 1972, p. 62. D. Sindrey, *Listening Games for Littles II* (London, Ontario: Wordplay Publications, 2002).

Note: Beginning of bar represents the approximate age at which most children begin to acquire each sound. End of bar represents age at which most children have mastered each sound.

available in Spanish. Most of these evaluation procedures are conducted by a speech–language pathologist within the educational system or in private practice.

One of the most important tools in the assessment process for speech and language impairments is the case history. Amassing identifying information such as gender, age, natural or adoptive parents, and pertinent family status information is helpful. The initial family interview is of paramount importance to the assessment and rehabilitative effort and sets the tone for future interactions between professionals and families. Asking parents of young children questions such as "What issues have prompted you to have your child evaluated?" or "What would be most helpful for me to know about your child?" can aid in determining parental concerns. **Family-directed assessment** focuses on information that families choose to provide regarding needs, concerns, resources, and priorities. This type of assessment is useful for infants, toddlers, and preschool-age children. In this procedure, families participate in the assessment process by identifying strengths and needs and are empowered in the process of determining which support services are most necessary (Gargiulo & Kilgo, 2024).

FIRST PERSON: EMILY

A JOURNEY TOWARD SUCCESS

The day my child became special started out like any ordinary day. She was a toddler and attended a very prestigious preschool. It was the biannual parent–teacher meeting, which had been the norm since she was an infant. My husband and I were excited to see her drawings and scribbling that marked the beginning stages of writing. The normal pleasantries were exchanged, and then we began looking at Emily's work. At some point during this exchange, I noticed that the teachers were somewhat hesitant or nervous. The topic was color identification. The teachers stated that Emily wasn't retaining color identification. She did not associate the word *green* with the color green.

The suggestion was made that we needed to have her tested. The teachers stated that probably nothing was wrong, but if there were some issues, then the earlier that intervention began, the better it would be for Emily. Since Emily was almost 3, the school system provided testing free of charge. To be honest, I handled this situation like any grown-up mature adult—I cried and cried.

I began flashing back to some early warning signs. Emily walked and talked later than most other children, and she would get confused when I would say, "Go get your toy in the living room." She also didn't understand the concepts of up/down, above/below, behind/in front of, and so forth, and with that, our journey began.

The test results confirmed a learning disability. Emily was also eligible for speech–language therapy. Although the school system provided free speech–language therapy, the location to my employment wasn't convenient. Therefore, the decision was made to hire a private speech–language therapist to come to her preschool 2 days per week. Therapy was fairly smooth at first as I waited for this therapist to "cure" my child. She would share funny stories with me but always seemed to focus on Emily's disability rather than her abilities. She also failed to fully communicate with Emily's preschool teachers.

This therapist soon relocated to another state, and we started working with a new speech–language pathologist. Emily and I immediately clicked with her. She laid out a plan of action and regularly met with Emily's teachers and me. She emailed me after each session and would tell me the great things Emily achieved during the session. She loved Emily, and most important, she saw her abilities.

As I am writing this, it has occurred to me that I am writing all about what I went through. I haven't appropriately introduced you to the special girl that I am writing about. Her name is Emily Grace, and I am proud and honored that God chose me to be the mother of this special girl. She is 10 years old and doesn't meet a stranger. She is kind and has always been the caretaker of all her friends. When she sees a friend, she almost knocks her down with big hugs. Seeing Emily, you would never know she has a language impairment. She doesn't look a certain way; in fact, she is a beauty! Now back to the story.

Emily began kindergarten and a totally new experience. This time, however, she had an instructional support teacher, a general education teacher, and a speech–language pathologist. I became increasingly familiar with the individualized education program process. Emily loved school.

Emily entered the first grade and continued to be happy. She is very social but at the same time well behaved. She would raise her hand and answer any question her teacher asked her. The problem was that Emily would give an answer that didn't pertain to the question or the subject being

discussed. She would give an answer that was related to the last thought in her head. Her teacher suggested that maybe Emily had attention-deficit/hyperactivity disorder (ADHD). So off we went to her pediatrician and another battery of tests with a neuropsychologist. The testing indicated that Emily did indeed have ADHD. We placed her on medication but nothing changed, and we switched medication again and again. Still nothing changed. Emily, however, changed—this fun, social, laughing girl was quiet. My husband and I made the decision, against the wishes of her teacher and neuropsychologist, to remove Emily from medication.

Teachers who are not familiar with Emily's disability think she is not listening. Directions are hard for her. Something as simple as "Get your books out and write down your homework assignments" is a hard concept for Emily to follow. The teacher doesn't know that for Emily, she needs to say, "Emily, open the book," and once the book is opened, she has to point to the homework assignment and say, "Write this down in your book."

Reading comprehension is extremely difficult for Emily. She reads at a level higher than her comprehension. She can read a paragraph, but when asked what she just read, she would repeat some words from the last sentence of that paragraph.

Second grade began, and her teacher wasn't one who was "warm and fuzzy." My sense was that she felt inconvenienced by having Emily included in her class. During one of our many conferences, she remarked that Emily was unorganized; she wasn't able to come in, put her backpack down, and get her books out. She held the entire class up. The teacher told me that Emily's peers were pulling away from her, and she described a child with whom I was not familiar. She also told me that Emily would embarrass herself by responding to questions with answers that didn't pertain to the subject being discussed. I wanted to scream, "Don't you think I know this?" Fortunately, for me, the saving grace that year was Emily's instructional support teacher and her speech–language pathologist. Her instructional support teacher made laminated picture cues for Emily that visually showed her the correct sequence to follow upon arriving in class. I am proud to say that Emily got the hang of it. She learned! You see, Emily can learn. She just learns a bit slower and differently than most children, but nonetheless, she learns.

Blessings occurred many times in our lives, and another arrived the day Emily entered third grade. She had a new teacher. This teacher was new to the school system, and she was young. "Oh boy, I bet you she doesn't have a clue about language delay" was my initial reaction. In addition, Emily was assigned a new instructional support teacher. I thought, "Here we go again." I didn't want to have the typical 3-month recoupment period that both Emily and I faced each year, so I decided to tell them how Emily learns. This third-grade teacher got it. She read my notes and focused from the beginning on Emily's abilities. She introduced me to a new concept called frontloading. She would take Emily aside and preteach her a subject while classmates were reading. When the teacher went over the lesson with the remainder of the class, Emily would be hearing it the second time. It helped to reinforce the subject. By far, this teacher has been the best teacher to date for Emily.

Her new instructional support teacher was also wonderful. Because she was familiar with receptive/expressive language delays, she taught concepts to Emily visually. She actually knew Emily and understood her struggles. She worked closely with the classroom teacher and gave her ideas to help Emily respond properly to questions. It was also done in a way that didn't embarrass Emily in front of her peers.

This instructional support teacher also challenged the school administrators about the Honors Day program. She asked, "Why can't children in instructional support be included on the AB honor roll? After all, they learn and do well at their level. Are only A students successful in life?"

Emily entered fourth grade; fortunately, her support team remained intact. Still the old, familiar 3-month lag raised its ugly head. Her grades typically slipped during this time frame as her teachers tried to understand and respond appropriately to her disability. Emails and constant communication with her teacher and the familiarity of her instructional support teacher helped tremendously. Emily worked extremely hard, and her efforts paid off. She received the Principal's Leadership Award during the Honor Ceremony that year.

Emily is now in fifth grade. To be honest, this has been an extremely difficult year. Two conferences with her teacher were required, and things were still difficult. The issue is communication. The teacher assured the parents during orientation that all homework would be included on his website, and it was—partially. For instance, he would tell the class, "Do page 2 in your math book." Emily wouldn't bring the book home, or each unit in the book had a page 2. So which unit? While most kids could tell you which unit, Emily can't. Another example: She would often bring home books but didn't bother to write the assignments in her planner. The website would have homework assignments for the class that didn't pertain to Emily. During one of our conferences, the teacher remarked, "I told her several times to make sure that she had all her books to take home." (He didn't realize that all Emily heard was books.) Her instructional support teacher would tactfully remind him that this is a product of her disability.

A 30-minute reading assignment is brutal for Emily. It takes Emily well over an hour to complete the assignment. She slowly sounds out the words and then can't tell you one thing she just read. Once again, her instructional support teacher stepped in. Emily was given a notebook (to keep at home) that had short stories with questions to answer. Her teacher taught her to number the paragraphs and then break them down. Last night, we completed four stories in 30 minutes! Success!

It is helpful that the instructional support teacher emails me each Monday with the teacher's weekly plan. She answers my emails daily. She understands my frustrations. I lean heavily on her during these tough times. I have left her phone messages as I cried with frustration on trying to understand what the classroom teacher was expecting of my child.

My worries are now with the transition to the middle school. In life, the smart kids, the popular kids, and the enrichment kids are favored. Some teachers are inconvenienced that they have to teach another way to my child, and I get that. It has to be hard and time-consuming. But isn't that what the calling of a teacher is? To teach? Learning to teach students doesn't mean teaching only smart students. Emily will have to fight to make her way, to stand out in life. It is regrettable that it takes some teachers 4 months to get it. Will you be the type of teacher who extends their hand and pulls Emily to the top? Will you get it? I hope so. Emily and others like her need you.

—*Anonymous*

Effective assessment should be holistic, including both formal and informal measures (Owens, 2024). Information relative to the child's hearing, motor skills, oral and respiratory mechanisms, general physical condition, educational records, and social and developmental histories must be amassed and reviewed. In addition to physical, educational, and communicative ability, consideration of the child's psychological and social status, as well as family dynamics, will affect decisions regarding effective intervention strategies. IDEA 2004 mandates that information provided by parents be included in the assessment process. While testing is important, asking questions, gathering information, observing, and directly interacting with the child also yield critical insights. This type of informal assessment requires input from the child's family members, caregivers, and significant others. Open-ended questions such as "What concerns prompted you to seek evaluation of your child?" allow professionals to explore various social, cultural, and family issues that need to be considered in designing meaningful and individualized approaches to remediation. Awareness of these issues and their relationship to the communication difficulties provides a framework for effective treatment.

Observing the child's general appearance may also identify significant but subtle physical anomalies consistent with some congenital abnormalities that impair the communication process. Such markers might include low-set ears and peculiarities of the head, jaw, teeth, and tongue and should also be noted during the initial interview.

A speech assessment evaluates articulation, voice, and fluency abilities of the child. The articulation test is a formal evaluation procedure designed to identify sounds or phonemes that are not produced correctly in light of the student's age. The Goldman–Fristoe Test of Articulation 3 (Goldman & Fristoe, 2015) is a commonly used measure of articulation. When determining accuracy of production, test items evaluate various consonants in initial, middle, and final positions (for the sound */t/*, for example, position varies in the words *two, platter*, and *cat*).

The professional who seeks to assess language pathology faces a formidable task, however, in determining what constitutes "normalcy" for language. Evaluating children in our culturally diverse society is particularly difficult. Care must be taken that normative data account for individual and cultural differences that affect language acquisition. How can we effectively distinguish speech and language pathology in the midst of cultural diversity? Educational professionals must observe the child's speech production and compare its quality and content to that of the child's own peers. Informal measures, such as conversational sampling of speech, often provide more useful information than formal assessment tools. Educators are encouraged to use such informal evaluation methods to enhance the evaluation process (Owens, 2024). Obtaining a **language sample** from a very young child is sometimes impossible because the child does not have speech that is sufficiently developed to provide such a sample. In this case, **prelinguistic** communicative behaviors can be used; these are frequently obtained by

parent interview as well as by direct observation. A variety of scales and checklists have been designed for this purpose. The BRIGANCE® Inventory of Early Development III (Brigance, 2013) is an excellent example of a criterion-referenced assessment that can be used in this way.

STRATEGIES FOR EFFECTIVE TEACHING AND LEARNING

TEACHING LANGUAGE SKILLS

The teacher's use of effective teaching strategies will help students with language difficulties gain the concepts and content that they need for success in content-area classes. Key strategies that can be used in teaching language concepts or patterns include the following:

- Gear the activities to the student's interests and cognitive level.
- Get the student's attention before engaging in communication activities.
- Bombard the student with the concept or skill frequently throughout the day in a functional manner.
- When speaking, place stress on the target concept or language pattern.
- Pause between phrases or sentences so that the student has time to process the new concept or language pattern.
- Decrease the rate of presentation when first introducing the concept or language pattern.
- When introducing a new concept or language pattern, use familiar vocabulary that can be readily visualized.
- If possible, present the new concept or language pattern by using more than one input mode (auditory, visual, kinesthetic). Gestures and facial expressions that are paired with a specific language pattern often assist students in understanding the form. For example, giving a look of puzzlement or wonder when asking a question can serve as a cue to the students.
- Pair written symbols with oral language. For instance, demonstrating morphological endings such as *-s* (plurals) and *-ed* (past tense) can be done in writing. The students can then be cued to listen for what they see.

Source: S. Vaughn, C. Bos, and J. Schumm, *Teaching Students Who Are Exceptional, Diverse, and at Risk*, 8th ed. (Pearson Education, 2023), p. 239.

Any comprehensive assessment of linguistic ability will require a variety of assessment measures that consider developmental level, maturity, gender, ethnicity, and cultural background (Cohen & Spenciner, 2015). On the basis of such findings, objectives can be designed for the child and their family. Results of assessment may provide a baseline for pre- and postintervention comparisons, as well as indicate a need for referral to various other professional disciplines. Well-designed and well-implemented evaluation techniques help determine whether linguistic competence is outside the range of normalcy, as well as clarify what communication problems are amenable to change, how much improvement can be expected, the need for a range of professional services, and variables that will influence treatment outcomes.

EDUCATIONAL CONSIDERATIONS

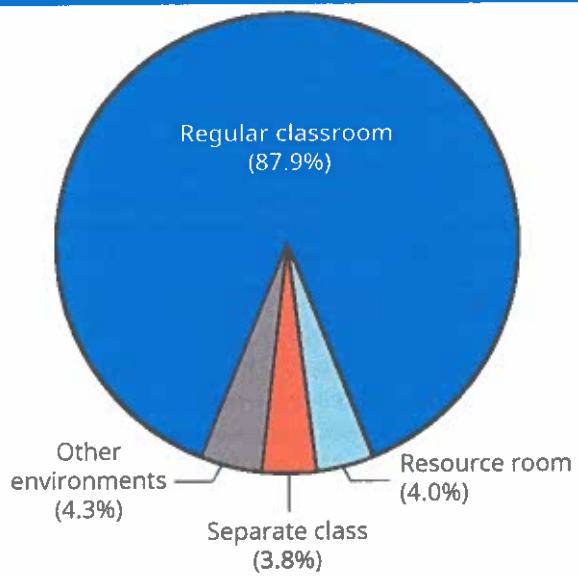
Educational planning for children with speech and language impairments involves many factors. Elements that need to be considered in the classroom setting include seating arrangements, reducing distractions in the physical environment, and instructional techniques that will help students with speech and language impairments, such as the following:

- Allowing sufficient time for the student to respond
- Being patient
- Modeling correct speech

- Prohibiting ridicule of speech difficulties/errors
- Repeating important phrases
- Slowly giving directions, repeating if necessary
- Using gestures to clarify information
- Using graphic organizers and visual aids
- Using short sentences

The overwhelming majority of children with speech and language impairments are served in the regular or general education classroom. Figure 11.4 graphically represents the educational placements typically used with students who have a speech or language impairment.

FIGURE 11.4 ■ Educational Placement of School-Age Students With Speech and Language Impairments



Source: U.S. Department of Education. (2023). *Forty-fourth annual report to Congress on the implementation of the Individuals with Disabilities Education Act, 2022.* U.S. Government Printing Office.

Note: Figure represents percentage of enrollment of students ages 5 to 21 with speech and language impairments during the 2020–20121 school year. Other environments represent placement in a separate school, residential facility, home-bound/hospital environment, correctional facilities, or parentally placed in private schools. Information based on data from 48 states, the District of Columbia, Puerto Rico, Bureau of Indian Education schools, and outlying areas. Data for Louisiana and Iowa not included.

MAKING INCLUSION WORK

INDIVIDUALS WITH SPEECH AND LANGUAGE IMPAIRMENTS

I realized I wanted to pursue a career as a speech–language pathologist when I was a high school senior working with a young neighbor. I earned an undergraduate degree in speech–language pathology as well as a master's degree in elementary education from the University of Montevallo. I am currently pursuing a second master's degree in special education. I have worked in public schools for many years teaching speech to preschool children and elementary-grade students. The children I have worked with had articulation disorders, delayed language development, and social skill deficits in addition to speech dysfluencies that hindered proper communication. I have led social groups to help students learn how to appropriately communicate and interact with their

peers. I have been greatly blessed to be a part of the lives of these children and their families, and I will always be grateful that I have been able to walk with them on this journey.

I find that the most important thing I can do to help my students is to develop a good rapport with their parents. I invite parents to become a part of my class and to observe therapy with their children. I send frequent progress reports home and respond quickly to any notes, phone calls, or emails. As much as I am dedicated to being an effective speech-language pathologist, I deeply care about the daily stresses and struggles these parents encounter in raising their child. It is not an easy task, but every educator needs to remember that parents are the experts, and they need to be respected as such. In most instances, they have invested their entire lives in helping their son or daughter, and they often know what does and does not work with their child. After all, they were their child's first teacher.

Strategies for Inclusion and Collaboration

Collaboration begins with the referral process. While the special educator is often the team member who writes the individualized education program (IEP), information and observations from other teachers, therapists, and paraprofessionals are gathered to construct an appropriate IEP.

Working and planning collaboratively with all of the teachers and professionals who are a part of the student's day helps the child to work on speech and language goals throughout the day in their natural settings. I frequently meet with my students' teachers to share IEP goals and the progress each child has made. When teachers are aware of the success a student has had in learning a particular speech sound or language skill, they are able to follow up and help the student in their classroom as well.

The general education teacher is not the only person who works with the student who has a speech and language impairment. I inform all of the individuals who work with my students of ways that they can help support the child. Physical education teachers, lunchroom workers, the teacher in the computer lab, the media specialist, the guidance counselor, the music teacher, and any other therapists who work with my students are all aware of the strategies and techniques that they can use to support and encourage my students. In this way, the children are able to practice the skills that are needed in more than one environment. Furthermore, I believe it helps others who work with these children to be more compassionate and understanding.

Speech-language pathologists often remove students from their classroom due to the students' need for individualized and specialized therapy; however, a great deal can be accomplished in the general education classroom. I often teach language skills as a whole-class activity, and all the children benefit from the experience. In one instance, I had a child working on understanding figurative language. I went to his classroom and taught the entire class this skill while planning a lesson around the book *Amelia Bedelia*. It was a lot of fun for everyone.

I often start with students learning and practicing social skills. I then share with other teachers the skills under development, and together we find ways for the children to practice the skills throughout their school day. One of my students, who had been diagnosed with Asperger syndrome, was having a difficult time at lunch interacting with his peers and choosing appropriate topics to discuss and was frequently bothering his teacher with unnecessary comments and requests. His classroom teacher, his special education teacher, his paraprofessional, and I met to help him with this problem. I taught him appropriate topics to ask about and discuss with his friends at lunch and encouraged him to only talk to his teacher when absolutely necessary. We all took turns having lunch with him and his classmates so that we could prompt him to ask questions and participate in the natural conversation at the table. We were also able to help him with deciding what things did or did not need his teacher's attention, giving her a much-needed break. More important, this student was able to maintain and strengthen friendships with his classmates that were previously deteriorating. His mother also gave permission for the teacher to discuss her son's condition with his classmates. This made a tremendous difference. The children responded positively and openly to his uniqueness. I know that working collaboratively made a tremendous difference in this child's daily experiences at school.

I have also seen successful collaboration in our sensory-motor group. This is a small group of students that meets with the occupational therapist, the special education teacher, and myself. This is an hourlong group where the children practice proprioceptive, vestibular, and balance activities. The students also listen to short stories that encourage proper questioning and responses in addition to learning vocabulary, recalling of events, and sequencing skills. We finish with a craft activity that addresses their individual sensory and tactile issues.

Participating in grade-level planning meetings is important as well. This has been very helpful in planning my own lessons for the children. I am able to plan lessons dealing with the same science and social studies topics that they are learning in the classroom, making the time they spend

in therapy a more meaningful experience. Meeting with teachers regularly keeps me informed of how my students are performing in their classroom.

A Concluding Thought

While I sometimes find a need for a few of my students to practice articulation, language, and social skills in my classroom, I also find a very real benefit in providing therapy in inclusive settings.

Doing so provides appropriate peer models for the student with a speech and language impairment, and it allows me the opportunity to work with all the students while being a consultant to the other teachers and paraprofessionals on my team. Children are able to learn in their least restrictive environment and have more opportunities to practice skills while being full-fledged members of their classrooms. Their peers also learn to be understanding of individual differences, and all of the children benefit from the extra adult support in the classroom. I believe that I have learned as much as my students have from my inclusive education experience. I have developed so much professionally by watching my colleagues in action. Inclusion has helped me to become a better speech-language pathologist.

—Brooke T. Bunn

Former Speech-Language Pathologist

Jefferson County (Alabama) Schools

TECHNOLOGY AND INDIVIDUALS WITH SPEECH AND LANGUAGE IMPAIRMENTS

Children with speech and language impairments represent a very heterogeneous group of individuals. When one considers technology for students with speech and language impairments, it is typically for students who have complex communication needs such as individuals with severe speech and language impairments, autism spectrum disorder, or intellectual disability. Technology use for these students is referred to as *augmentative and alternative communication* (AAC). AAC "includes all forms of communication (other than oral speech) that are used to express thoughts, needs, wants, and ideas" (American Speech-Language-Hearing Association, n.d.). AAC devices enhance (i.e., augment) or serve as an alternative to a student's communication. Researchers suggest that AAC has significant benefits for individuals with speech and language impairments (Clarke et al., 2012; Owens, 2024).

AAC is actually a diverse range of technology. AAC not only includes low-tech, mid-tech, and high-tech options, as discussed in Chapter 5, but also is typically categorized into aided and unaided technology. Aided technology refers to tools external to a person (e.g., picture symbols, Proloquo2Go® on an iPad), whereas unaided technology consists of nonverbal means of communication such as facial expressions or gestures as well as American Sign Language (ASL) (American Speech-Language-Hearing Association, n.d.; Owens, 2024).

Low-tech AAC includes the use of picture symbols, such as Picture Communication Symbols (PCS) by Mayer-Johnson or Blissymbolics. With picture symbols, students often use a communication board or book to select symbols to communicate (American Speech-Language-Hearing Association, n.d.; Bondy, 2012). Mid-tech and high-tech AAC involves the selection of symbols or words to generate speech, using devices referred

Electronic communication boards are an example of an alternative or augmentative communication device.

AbleNet. Reproduced with permission.

to as **speech-generating devices (SGDs)**. With mid-tech AAC, typically another individual records a finite set of words or phrases that a student can then select to communicate (e.g., various models of GoTalk by Attainment Company). With high-tech AAC, a student selects symbols or words to produce synthesized (digital) speech (e.g., the Accent family by PRC or the TD I-Series by Tobii Dynavox). Increasingly, AAC is using mobile technologies, such as tablets and smartphones. See the accompanying Spotlight on Technology feature for examples of AAC apps.

SPOTLIGHT ON TECHNOLOGY

Augmentative and alternative communication (AAC) options are increasingly occurring as apps. As with dedicated AAC devices, AAC apps present a wide variety of options, including digital or synthesized speech, premade symbols or pictures or uploading one's own, grid display image, and symbols or typing (AAC TechConnect, 2014) (see Table 11.5).

TABLE 11.5 ■ AAC Apps

iOS App	Description
Proloquo2Go®	• Natural-sounding voice output symbol-based app • Customizable, including creating own buttons
SoundingBoard™	• Create own boards—including with own photos or preloaded symbols—and record messages
Flip Writer AAC	• Type message on a two-way keyboard that sender and receiver can both see; typed selection can also be presented via speech
Sono Flex	• Voice output symbol-based app • Uses SymbolStix® symbols
GoTalk Now	• Modeled after Attainment's dedicated GoTalk devices • App is customizable (choose a layout), and users can use symbols or insert their own images

Source: Adapted from E. Bouck, *Assistive Technology* (Thousand Oaks, CA: Sage, 2017).

SPEECH AND LANGUAGE IMPAIRMENTS ACROSS A LIFE SPAN

From early childhood to adulthood, individuals with speech and language impairments face unique challenges. In this section, we discuss these as well as some of the resources available.

Services for Young Children With Speech and Language Impairments

The very young child with a linguistic disorder represents a unique population. As knowledge regarding pediatric speech and language pathologies continues to expand, it has been noted repeatedly that there are time-locked "critical periods" for the acquisition of communication skills. These windows of opportunity for language learning have historically been the subject of much study and debate. Is there an optimal time frame for providing intervention for communication disorders? Is there a point at which such intervention is really too late to be effective? Research suggests that for virtually all communication deficiencies, the younger the child at the time of intervention, the more positive the outcome (Cohen-Mimran et al., 2016; Guralnick, 2011).

To provide effective intervention for the young child, we must first be able to identify those with speech and language impairments. Those at risk for having a delay in speech or language need to be

screened early and at regular intervals. Children identified as high risk include, for example, children from neonatal intensive care units, children with chronic ear infections, those with known genetic defects, and children with fetal alcohol syndrome, neurological defects, or delayed language.

Public Law 99–457 mandates that speech–language pathologists evaluate and treat children between the ages of 3 and 5. When providing services to infants, toddlers, and preschoolers, assessment of the family—its strengths, needs, and interaction patterns—is as important as the evaluation of the child. Because the structure of the American family is changing, caregivers other than parents may be involved in treatment strategies. Many of the newly developed rating scales, which specifically analyze communication-promoting behaviors between a child and their caregiver, reflect the importance of this relationship. This type of observation is a valuable tool in quantifying strengths and weaknesses in daily communicative interactions—for example, the level of vocabulary used with the child, the number of attempts to engage the child in communication, the quality of voice animation and body language, responses to the child's attempts to communicate, and imitation of the child's efforts—and planning appropriate remediation strategies.

The sooner early intervention begins for a child with communication disorders, the more promising the outcomes.

iStockPhoto/AleksandarGeorgiev

Evaluation of language skills in the preschool child should always include such measures as adaptive behavior scales, parent interviews, and informal language sampling. More formal assessment tools for examining language in very young children are increasing in number. Many of these tests are developmental scales that look at language as part of the assessment process.

Preschoolers with speech and language impairments (whether as a primary or secondary disability) generally thrive in general education classrooms. These settings provide daily interactions with peer models and exposure to a rich variety of experiences. Children have the opportunity to observe, learn, and practice age-appropriate social, communication, and cognitive skills. The single most essential element of language intervention in these settings is arranging the environment (McCormick, 2003b). Environmental arrangement entails selection and use of materials, arrangement of the physical space, and the provision of structure to activities.

Adolescents and Adults With Speech and Language Impairments

Transitioning from high school to the adult world presents a special challenge for professionals involved with adolescents with speech and language impairments. Many of these individuals encounter situations and issues that are similar to those faced by other young adults with and without disabilities, such as employment decisions, living arrangements, and postsecondary educational choices, to mention only a few. This is a period of rapid change that is compounded by a host of social, emotional, and psychological factors. Searching for one's own identity, coping with emerging sexuality, and striving for independence are just some of the complex issues that are exacerbated by communication difficulties. Working effectively with adolescents who exhibit speech and language impairments requires tremendous understanding and empathy from the speech–language pathologist. The intense desire of the adolescent to be like others can often hinder well-intentioned diagnostic and rehabilitative efforts.

Family Issues

Families with children who have speech and language impairments, like all families, exhibit complicated dynamics. When a problem affects one member of the family, other members are likely affected

(Gargiulo & Kilgo, 2024). It is important for professionals to understand and appreciate the emotional issues and stress that some families of children with communication disorders confront. Luterman (2017), for instance, describes the medical model of assessment as "diagnosis by committee." In this model, parents are confronted by an array of professional "experts" delivering reports filled with technical jargon, much of which is neither understood nor retained. Indeed, many parents of children with speech and language impairments describe the initial assessment of their son or daughter as very unpleasant or upsetting. Unfortunately, contemporary medical and educational models for assessment and treatment of speech and language impairments are largely child centered in their approach. By ignoring the needs of the family, they often fail to address the concerns of those who are most significantly affected by the impairment.

Appropriately designed family-centered intervention is based only in part on formal assessment. The value of any assessment procedure is only as good as the intervention that accompanies it. Allowing parents to "tell their story," share concerns, and "be the expert" regarding their child is essential to empower them as partners in the habilitation process. Including parents and family members as active participants in both assessment and habilitation encourages involvement from those most intimately involved with the child, increasing effectiveness in treating communication disorders. Ideally, parents then emerge as actual partners in the rehabilitative process (Owens, 2024).

The hour or two a week that a child with a speech or language impairment might spend with a speech–language pathologist is infinitesimal compared to the time spent with other adults (parent, teachers) and peers. The speech–language pathologist attempts to learn as much as possible about the child's activities in various environments so that all of the child's communication partners can be involved in the intervention process. For instance, the speech–language pathologist works with family members to develop a better understanding of the child's needs and how best to facilitate interaction and communication. Specifically, the speech–language pathologist collaborates with family members to help them learn how to keep conversations with the child focused on the present, reduce distractions during conversations, slow the rate and decrease the complexity of language directed to the child, and maximize nonlinguistic cues.

ISSUES OF DIVERSITY

The United States is currently experiencing record immigration. The number of foreign-born residents living in the United States is at its highest level in history, reaching almost 48 million citizens (Camarota & Zeigler, 2022). One result of this influx of new citizens is that one in four children, or 18.4 million children, live in immigrant families (Annie E. Casey Foundation, 2023). This most likely means that vast numbers of children who do not speak standard American English as their first language will probably need help with some aspect of language. Recent estimates suggest that approximately 5.1 million or 10.4% of public school students are considered English learners (National Center for Education Statistics, 2022). Unfortunately, research (Morgan et al., 2017) suggests that young children from culturally and linguistically diverse backgrounds, in comparison to children from English-speaking households, are less likely to be identified and receive appropriate speech–language interventions, thereby heightening their risk for later academic and behavioral difficulties in school.

Over the past few years, the descriptor for individuals who are second-language learners has changed. Previous terms included *limited English proficient* (LEP), English Language Learners (ELLs), or English Learners (ELs). Contemporary educational practice is to use the term *emergent bilingual students*. Given its age, IDEA 2004 uses the term LEP.

How families interact with their children and the prelinguistic skills that develop from these interactions vary considerably across cultures (Owens, 2020). Observations of non-Western cultural groups make it clear that the large literature on child-directed talk primarily describes Western parent–child interaction patterns. When working with children from culturally and linguistically diverse populations, the speech–language pathologist may draw teaching materials directly from the children's homes and communities, capitalizing on whatever communication skills they have, regardless of whether they are verbal or nonverbal, in English or another language.

The lack of reliable and valid assessments often makes it extremely difficult to accurately and fairly identify speech and language impairments in children from culturally and linguistically diverse populations (Guiberson & Atkins, 2012; Owens, 2024; Owens & Farinella, 2024). There is always the issue of whether speech and language variations are due to a disability or to the child's competency in the second language. Historically, but even today, too often emergent bilingual children are placed in special education classes based on test scores that are normed for English-speaking students. Many of these students are misdiagnosed and incorrectly labeled as having an intellectual disability or a learning disability.

Intervention for emergent bilingual children who have language impairments depends on their age, the severity of the disability, the goals of the family, and available social interactions along with vocational expectations (Bunce, 2003). Most intervention programs incorporate a variety of techniques similar to those used with monolingual children with language impairments, combined with techniques for second-language learners. These programs focus on the different components of language—phonology, morphology, syntax, semantics, and pragmatics. Additional techniques for second-language learners include (1) teaching vocabulary and syntax in the context of ongoing activities, (2) allowing time for comprehension to develop before insisting on production, (3) using predictable books, (4) using peer buddies, and (5) incorporating parents and other family members as teaching partners.

Cultural diversity and nonstandard English have come to the forefront of the educational arena because of their implications for linguistic performance. Common tools for assessing speech and language skills will continue to be reviewed for their adequacy in measuring linguistic abilities of children who are increasingly recognized for their intersectionalities.

CHAPTER IN REVIEW

The Prevalence of Speech and Language Impairments (Learning Objective 11.1)

- Speech and language impairments are considered a high-incidence disability; less than 20% of students receiving special education services are receiving services for speech and language impairments.

The Nature of Speech, Language, and Communication (Learning Objective 11.2)

- Speech is the expression of language with sounds—essentially, the oral modality for language.
- Language is a code whereby ideas about the world are represented through a conventional system of arbitrary signals for communication.
- Language has five components—phonology, morphology, syntax, semantics, and pragmatics—that are present at both the receptive and expressive levels.
- Communication is the exchange of ideas, information, thoughts, and feelings. It does not necessarily require speech or language.

Understanding Speech and Language Impairments (Learning Objective 11.3)

- The most common speech problem is an articulation disorder, which includes substitutions, omissions, distortions, and additions.
- Stuttering and cluttering are examples of fluency disorders.
- Voice disorders are associated with the larynx. Phonation and resonance are illustrations of this disorder.
- Apraxia of speech involves both speech and language disorders. It results from the inability to position speech muscles necessary to produce speech sounds.
- Central auditory processing disorder (CAPD) is a problem in the processing of sound not attributed to hearing loss or intellectual ability.