Chapter 3
Teaching Students with Communication Disorders

Learning Objectives
After reading this chapter, you should be able to
■ define the concept of communication and describe its major components, language and speech
■ discuss communication disorders, including the different types of disorders and some of their characteristics
■ describe various classroom adaptations and accommodations appropriate for students with speech and language disorders
INTRODUCTION

Most of us take the ability to communicate for granted. Our communication is effortless and frequent. In one day, we might share a story with family members, discuss problems with our co-workers, ask for directions from a stranger on the street, and telephone an old friend. When we are able to communicate easily and effectively, it is natural to participate in both the commonplace activities of daily living and the more enjoyable experiences that enrich our lives.

However, when communication is impaired, absent, or qualitatively different, the simplest interactions can become difficult or even impossible. Moreover, because the communication skills that most of us use so fluently and easily almost always involve personal interactions with others, disorders in speech or language can result in social problems. For children, these social problems are most likely to occur in school. School is a place not only for academic learning, but also for building positive relationships with teachers and long-lasting friendships with peers. When a student’s communication disorder, however mild, limits these experiences, makes him or her feel different and inadequate, or undermines confidence and self-esteem, the overall impact can be devastating.

Communication problems are often complex. There are many types of communication disorders related to speech and language. This chapter describes strategies that teachers can use with students who have such disorders. Suggestions will address specific communication disorders as well as associated problems in socialization and adjustment.
BASIC CONCEPTS ABOUT COMMUNICATION DISORDERS

Communication and Communication Disorders Defined

Speech and language disorders/disabilities can be considered within the broader context of communication disorders. Speech and language are interrelated skills, tools that we use to communicate and learn. Heward (2003) defines the related terms this way:

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\text{Communication is the interactive exchange of information, ideas, feelings, needs, and desires. It involves encoding, transmitting, and decoding messages. Each communication interaction includes three elements: (1) a message, (2) a sender who expresses the message, and (3) a receiver who responds to the message. . . . All languages consist of a set of abstract symbols—sounds, letters, numbers, elements of sign language—and a system of rules for combining those symbols into larger units. . . . Speech is the oral production of language. Although it is not the only possible vehicle for expressing language (e.g., gestures, manual signing, pictures, and written symbols can also be used), speech is the fastest, most efficient method of communication by language. . . . Speech is also one of the most complex and difficult human endeavours. (pp. 326–328)}
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Various cultures develop and use language differently, and the study of language is a complex topic. The American Speech-Language-Hearing Association (ASHA) (1993) includes the following important considerations in its discussion of language: language evolves within specific historical, social, and cultural contexts; language is rule-governed behaviour; language learning and use are determined by the interaction of biological, cognitive, psychosocial, and environmental factors; and effective use of language for communication requires a broad understanding of human interactions, including associated factors such as nonverbal cues, motivation, and socio-cultural roles. ASHA (1993) defines a communication disorder as:

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\text{An impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal and graphic symbol systems. A communication disorder may be evident in the processes of hearing, language, and/or speech. A communication disorder may range in severity from mild to profound. It may be developmental or acquired. Individuals may demonstrate one or any combination of the three aspects of communication disorders. A communication disorder may result in a primary disability or it may be secondary to other disabilities. (p. 1)}
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Language development and use are complicated topics; therefore, determining what is typical or normal and what is disordered communication is also difficult. Keeping this in mind, Silverman and Miller (2006) noted additional considerations should be recognized and understood in relation to the ASHA (1993) definition. They suggested that for a condition to be truly a disorder, the following two conditions be evident:

- There has to be something noticeably different about how the person looks or listens. If the person is not aware of the difference and most people would not detect it, he or she would not likely be looked upon as having a communication disorder. In this situation, the person may not even be aware of the associated difficulties.

- The disorder must have an adverse effect on the person. This may include academic, social, or personal difficulties. For example, a child with a speech disorder may have trouble making friends because she is unable to communicate with others. This could lead to feelings of isolation and low self-esteem.
situation, the communication difference would not interfere with communication, call adverse attention to the person, or cause him or her to be self-conscious or maladjusted.

The communicative deviation has to be regarded as “abnormal” by at least one person whose judgment is respected by the person who has it. The person can be a professional, such as a speech language pathologist (SLP) or audiologist, a family member, a friend, or the person himself or herself. (p. 16)

In order for teachers to better understand communication disorders, and improve their ability to identify, support, and refer students who may be struggling with communication in the classroom environment for further evaluation and intervention, it is helpful to be familiar with the dimensions of language and the terms used to describe related disorders (see chapter 4 on learning disabilities, and consider the integral link between language disorders and learning disabilities).

Types of Communication Disorders

In its definition of communicative disorders, ASHA (1993) describes both speech disorders and language disorders. Speech disorders include impairments of articulation, voice, and fluency. Language disorders are impairments of comprehension or use of language, regardless of the symbol system used. A language disorder can involve the form of language, the content of language, or the function of use of language. Specific disorders of language form include phonologic, syntactic, and morphologic impairments. Semantics refers to the content of language, and pragmatics is the system controlling language function. Figure 3.1 contains the definitions of communication disorders as described by ASHA. The terms in this figure will be discussed in more detail later in the chapter. The category of communication disorders is broad in scope and includes a wide variety of problems, some of which may overlap. It is not surprising that this group of disorders includes a large proportion of students with exceptionalities. For example, individuals can demonstrate speech and language difficulties in isolation (e.g., only demonstrate a moderate articulation disorder), in combination (e.g., demonstrate a moderate articulation disorder and a moderate receptive and expressive language disorder), and in association with other exceptionalities (e.g., identified with a moderate learning disability and a mild receptive and expressive language disorder).

Prevalence and Causes of Communication Disorders

After learning disabilities, speech and language disorders are the most common disability seen in the schools. The Canadian Association of Speech-Language Pathologists and Audiologists estimated that 5 to 10 percent of Canadian school-age children have some type of speech or language disorder (CASLPA, 2005). In the United States the second most common disability category of students, ages 6 through 21, served under Individuals with Disabilities Education Act (IDEA) is speech or language impairment (U.S. Department of Education, 2006). These students have a disorder or delay in their ability to send or receive a message, to articulate clearly or fluently, or to comprehend the pragmatics of social interactions. The majority of them also have other exceptionalities, such as learning disabilities, autism, or traumatic brain injury, so they are served under a variety of
COMMUNICATION DISORDERS

A communication disorder is an impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal and graphic symbol systems. A communication disorder may be evident in the processes of hearing, language, and/or speech. A communication disorder may range in severity from mild to profound. It may be developmental or acquired. Individuals may demonstrate one or any combination of communication disorders. A communication disorder may result in a primary disability or it may be secondary to other disabilities.

A. A speech disorder is an impairment of the articulation of speech sounds, fluency, and/or voice.
   1. An articulation disorder is the atypical production of speech sounds characterized by substitutions, omissions, additions, or distortions that may interfere with intelligibility.
   2. A fluency disorder is an interruption in the flow of speaking characterized by atypical rate; rhythm; and repetitions in sounds, syllables, words, and phrases. This may be accompanied by excessive tension, struggle behaviour, and secondary mannerisms.
   3. A voice disorder is 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 sex.

B. A language disorder is impaired comprehension and/or use of a spoken, written, and/or other symbol systems. The disorder may involve (1) the form of language (phonology, morphology, and syntax); (2) the content of language (semantics); and/or (3) the function of language in communication (pragmatics) in any combination.
   1. Form of Language
      a. Phonology is the sound system of a language and the rules that govern the sound combinations.
      b. Morphology is the system that governs the structure of words and the construction of word forms.
      c. Syntax is the system governing the order and combination of words to form sentences, and the relationships among the elements within a sentence.
   2. Content of Language
      a. Semantics is the system that governs the meanings of words and sentences.
   3. Function of Language
      a. Pragmatics is the system that combines the above language components in functionally and socially appropriate communication.

C. A hearing disorder is the result of impaired auditory sensitivity of the physiological auditory system. A hearing disorder may limit the development, comprehension, production, and/or maintenance of speech and/or language. Hearing disorders are classified according to difficulties in detection, recognition, discrimination, comprehension, and perception of auditory information. Individuals with hearing impairment may be described as deaf or hard of hearing.
   1. Deaf is defined as a hearing disorder that limits an individual’s aural/oral communication performance to the extent that the primary sensory input for communication may be other than the auditory channel.

(continued)
2. **Hard of hearing** is defined as a hearing disorder, whether fluctuating or permanent, which adversely affects an individual’s ability to communicate. The hard-of-hearing individual relies on the auditory channel as the primary sensory input for communication.

D. **Central auditory processing disorders** are deficits in the information processing of audible signals not attributed to impaired peripheral hearing sensitivity or intellectual impairment. This information processing involves perceptual, cognitive, and linguistic functions that, with appropriate interaction, result in effective receptive communication of auditorily presented stimuli. Specifically, CAPD refers to limitations in the ongoing transmission, analysis, organization, transformation, elaboration, storage, retrieval, and use of information contained in audible signals. CAPD may involve the listener’s active and passive (e.g., conscious and unconscious, mediated and unmediated, controlled and automatic) ability to do the following:

- attend, discriminate, and identify acoustic signals;
- transform and continuously transmit information through both the peripheral and central nervous systems;
- filter, sort, and combine information at appropriate perceptual and conceptual levels;
- store and retrieve information efficiently; restore, organize, and use retrieved information;
- segment and decode acoustic stimuli using phonological, semantic, syntactic, and pragmatic knowledge; and attach meaning to a stream of acoustic signals through use of linguistic and nonlinguistic contexts.

**COMMUNICATION VARIATIONS**

A. **Communicative difference/dialect** is a variation of a symbol system used by a group of individuals that reflects and is determined by shared regional, social, or cultural/ethnic factors. A regional, social, or cultural/ethnic variation of a symbol system should not be considered a disorder of speech or language.

B. **Augmentative/alternative communication** systems attempt to compensate and facilitate, temporarily or permanently, for the impairment and disability patterns of individuals with severe expressive and/or language comprehension disorders. Augmentative/alternative communication may be required for individuals demonstrating impairments in gestural, spoken, and/or written modalities.

**CONSIDER THIS**

What are the advantages of serving most of the students with communication disorders in general education classrooms? When would pull-out services be appropriate?

categories. Therefore, it is important to consider how these communication needs can be addressed as part of a student’s daily classroom learning and interactions (refer to chapter 9 for more information on auditory processing disorders, also termed central auditory processing disorders).

**SPEECH DISORDERS**

Speech disorders include problems in articulation, phonology, voice, and fluency. All of these areas can create problems in the everyday lives of students whether they are in school, in the community, or at home.
Articulation, Phonological, and Motor Speech Disorders

On its website, the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) differentiates between the speech sound disorders of articulation, phonology, and motor speech. Articulation disorders are described to “occur when a person cannot correctly pronounce one or more sounds” (CASLPA, 2004). For example, an individual who only has difficulty pronouncing the r sound at the beginning of words may be described as having an articulation disorder. Phonological disorders involve more than the inability to correctly pronounce one or more sounds. Phonological disorders are “errors of many sounds that form patterns” (CASLPA, 2004). The patterns of sound errors differ in type and severity for each individual, while motor speech disorders are “articulation disorders caused as a result of neurological damage such as stroke or head injury” (CASLPA, 2004). Phonological and articulation disorders are the most common speech disorders, affecting about 10 percent of preschool and school-age children (ASHA, 2002). The ability to articulate clearly and use the phonological code correctly is a function of many variables, including a student’s age, developmental history, oral-motor skills, and culture. Although some articulation and phonological errors are normal and acceptable at young ages, when students are older these same errors may be viewed as developmentally discrepant and problematic. By the time students begin Kindergarten, their teachers and their peers should be able to understand them easily. In the opening vignette, Declan’s parents reported he was not saying all of his sounds correctly when he started Kindergarten. The most common types of articulation errors include distortions, substitutions, omissions, and additions (McReynolds, 1990; Van Riper & Erickson, 1996). (See Table 3.1.)

Causes of Problems in the Phonological System Articulation and phonological impairments can be either organic (i.e., having an identifiable physical cause) or functional (i.e., having no identifiable organic cause). When you encounter a child with articulation or phonological disorders, consider the child’s environment. Some functional disorders may be related to the student’s opportunities to learn appropriate

| TABLE 3.1 The Four Kinds of Articulation Errors |
|---------------|-----------------|-----------------|
| Error Type  | Definition  | Example  |
| Distortion  | A sound is produced in an unfamiliar manner. | Standard: Give the pencil to Sally. Distortion: Give the pencil to Sally. (the /p/ is nasalized) |
| Substitution | Replace one sound with another sound. | Standard: The ball is red. Substitution: The ball is wed. |
| Omission  | A sound is omitted in a word. | Standard: Play the piano. Omission: P_ay the piano. |
| Addition  | An extra sound is inserted within a word. | Standard: I have a black horse. Addition: I have a balack horse. |

and inappropriate speech patterns, including opportunities to practise appropriate speech, fluctuating hearing loss due to otitis media during early development, and the absence or presence of good speech models. Some functional articulation and phonological problems have causes that may be related to complex neurological or neuromuscular activities and might never be specifically identified. Differences in speech can also be related to cultural and linguistic factors. These differences typically do not constitute a speech disorder and will be discussed later in the chapter (also refer to chapter 9 for a detailed definition of otitis media, and to learn more about the impact of otitis media on speech and language development).

Organic articulation and phonological disorders are related to the neurological and physical abilities required in the process of producing speech sounds, which is a highly complex activity involving intricate, precise, and rapid coordination of neurological and muscular interactions. According to the American Psychiatric Association (2000), organic causes of speech impairments may include hearing loss, cleft palate, dental malformations, or tumors. Brain damage and related neurological problems can also result in motor speech disorders, such as verbal apraxia (i.e., condition not due to paralysis or muscle weakness in which individual has problems saying sounds, syllables, or words; ASHA, n.d.) and dysarthria (i.e., “muscles of the mouth, face, and respiratory system may become weak, move slowly, or not move at all after a stroke or other brain injury”; ASHA, n.d., para 1). The severity of articulation and phonological disorders can vary widely, depending in part on the causes of the disorders.

When Articulation and Phonological Errors Are a Serious Problem We know the developmental patterns for normal sound production and can recognize children who are significantly different from the norm. The normal pattern of consonant sound production falls within relatively well-defined age limits (Sander, 1972). For example, children usually master the consonant p sound by age three but may not produce a correct sound consistently until age eight. Although young children between ages two and six often make articulation or phonological errors as their speech develops, similar errors in older students would indicate a problem. At age three it might be normal for a child to say wabbit instead of rabbit. If a 12-year-old made the same error, however, it would be considered a problem, and the teacher should refer the student to a speech-language pathologist for evaluation. Figure 3.2 presents this pattern of normal development for the production of consonants among speakers of Standard American English.

For a general education teacher, judging a student’s articulation or phonological errors requires looking at the big picture—that is, how well the student is doing in class and whether the articulation or phonological disorder is interfering with either overall academic performance or social adjustment. A few common-sense considerations may give some insight into whether the student has a serious problem and what, if anything, should be done about it:

- Take note of how understandable the student’s speech is.
  
  This factor may vary over time and across individuals. Sometimes, the context of the student’s speech will make it easier for listeners to understand her or him. Some errors are easier to understand than others. For example, omissions are usually more difficult to understand than distortions or substitutions. Individuals who spend more time around the student, and who are more familiar with his or her patterns of error, will
likely find the individual easier to understand. It is important to judge how understandable the student’s speech would be if you were a stranger to whom he or she was speaking.

- Consider how many different errors the student makes.

If the errors are consistent—that is, if the student repeats the same error rather than numerous different errors—he or she will be easier to understand. Peers and teachers will become familiar with these speech problems, and the student will have less of a problem relating to others. However, the problem should be addressed so that the student’s speech is understandable to strangers.

Figure 3.2 Ages at Which 90 Percent of All Children Typically Produce a Specific Sound Correctly

Note: Average estimates and upper age limits of customary consonant production. The solid bar corresponding to each sound starts at the median age of customary articulation; it stops at an age level at which 90 percent of all children are customarily producing the sound. The Ø symbol stands for the breathed “th” sound, as in bathroom, and the ∂ symbol stands for the voiced “th” sound, as in feather (Smith and Luckasson, 1992, p. 168).

TEACHING TIP
General classroom teachers should screen all students in their classes, especially during the early elementary grades, to determine which students have speech sound problems that might require intervention.

- Evaluate whether the speech errors might have an impact on the student’s ability to read and write.
  It is important to consider the impact a child’s articulation or phonological errors might have on their reading and writing, since “the connections between spoken and written language are well established” (ASHA, 2001, p. 17). For example, spoken language is the foundation on which reading and writing develop, and spoken and written language build on one another, leading to general language and literacy competence (ASHA, 2001).
- Observe whether the articulation errors cause the student problems in socialization or adjustment.
  If a student with articulation problems is ridiculed, excluded, or singled out because of a speech problem, the teacher may want to refer the student for a speech-language evaluation. Likewise, if a student is reluctant to speak in class, or seems self-conscious or embarrassed by articulation or phonological errors, the general education teacher should seek an evaluation.
- Consider whether the problems are due to physical problems.
  If they are, be sure that the student is referred to a physician. Some articulation problems are due to malformations of the mouth, jaw, or teeth. When the problems are structural, such as cleft lip or palate, they can often be corrected surgically. Likewise, dental malocclusions (abnormal closures and fit of the teeth) can be corrected with orthodontic treatment.

The early identification of and intervention for speech or language disorders are extremely important in making effective gains. Do not wait to see if an individual will “grow out” of his or her difficulties. Refer the individual to a certified speech-language pathologist for an evaluation if parents or teachers have any concerns about the child’s speech or language skills. The importance of early identification and intervention related to speech and language difficulties and disorders is highlighted in the Personal Spotlight on Judy Meintzer in this chapter.

Voice Disorders
Vocal disturbances in children are quite common. Voice disorders are characterized by the abnormal vocal quality, pitch, loudness, resonance, or duration given an individual’s age and sex (ASHA, 1993). The early diagnosis of voice disorders and intervention are warranted, as the disorders can lead to lifelong communication issues (Baker & Blackwell, 2004). In the United States, it has been reported that 29 percent of school-based speech-language pathologists work with students who display voice/resonance problems. Our voices are related to our identities and are an integral part of who we are and how we are recognized; therefore, we usually allow for a wide range of individual differences in voice.

There are two basic types of voice disorders: phonation and resonance (Heward, 2009). Phonation refers to the production of sounds by the vocal folds. Humans have two vocal folds, which are located in the larynx and lie side by side. When we speak, healthy vocal folds vibrate, coming together smoothly along the length of their surfaces, separating, and then coming together again. These movements are usually rapid and are partially controlled by the air pressure coming from the lungs. The rate of vibration controls the pitch of our voices (slow movements result in a low pitch, and a faster rate results in a high pitch). If a student’s vocal folds are too tense or relaxed, or if the voice is produced by vibrating laryngeal structures...
other than the true vocal folds, the student might demonstrate a pitch disorder. Although pitch disorders occur infrequently in school-age populations, they can sometimes lead to devastating social and emotional consequences. If the vocal folds do not meet and close together smoothly, the voice is likely to sound breathy, hoarse, husky, or strained. Chronic hoarseness is the most common voice disorder among children, affecting as many as 38 percent of the school-age population (Hooper, 2004).

Disorders of resonance involve either too many sounds coming out through the air passages of the nose (hypernasality) or the opposite—too little resonance of the nasal passages (hyponasality). Hypernasality sounds like talking through the nose or with a “twang”; hyponasality sounds like the speaker has a cold or a congested nose. Resonance is related to what happens to air that travels from the vocal folds into the throat, mouth, and nasal cavity; therefore, when there are abnormalities in any of these structures or in the associated musculature, resonance problems can result.

**Causes of Voice Disorders** Voice disorders can result from vocal abuse and misuse (such as shouting, screaming, talking loudly, making vocal sound effects, and throat clearing), trauma to the larynx from accidents or medical procedures, congenital malformations of the larynx and nodules, or tumors. Disorders caused by abuse or misuse are the most common and most easily prevented voice disorders in school-age children. Common childhood health problems such as upper respiratory tract infections, allergies, asthma, and gastroesophageal reflux can worsen symptoms (Hooper, 2004). Voice disorders caused by abuse or misuse of the vocal folds affect boys more often than girls (ASHA, 2002). Sometimes, voice disorders are related to other medical conditions so that when students evidence a voice disorder, the speech-language pathologist will often refer them to an otolaryngologist (ear, nose, and throat doctor) for an examination. Some examples of organic problems related to voice disorders include congenital anomalies of the larynx, Reye's syndrome, juvenile arthritis, psychiatric problems, Tourette syndrome, physical trauma to the larynx, and cancer. Most of these conditions are relatively rare, so it may be more likely that the student’s voice disorder is a functional problem, perhaps resulting from learned speech patterns (Hall, Oyer, & Haas, 2001).

**When Voice Disorders Are a Serious Problem** Classroom teachers can help prevent voice disorders among their students by modelling and promoting healthy vocal habits in the classroom, on the playground, and at home. Teachers themselves are at higher risk for voice disorders than the general population and would greatly benefit from adopting good vocal hygiene (Roy et al., 2004).

A student suspected of having a voice disorder should be observed over the course of several weeks, since many symptoms of voice disorders are similar to other temporary conditions, such as colds, seasonal allergies, or minor respiratory infections (Hall et al., 2001). One way to get a meaningful measure of the student’s speech during this time is recording him or her several times during the observation period. The recordings will be helpful to the speech-language pathologist and will provide a basis for comparison. Again, our voices are part of our identity, and, quite often, differences in voice quality, volume, or pitch may be considered part of who we are, rather than a problem that requires correction. Teachers might ask themselves the following questions before referring a student for evaluation of a voice disorder:

- Is the student’s voice having such an unpleasant effect on others that the student is excluded from activities?

**FURTHER READING**

For more information on voice disorders, refer to the information sheet entitled “Questions/Answers about Voice Problems,” found on the ASHA website at www.asha.org.
CONSIDER THIS
How can a student’s voice quality affect classroom and peer acceptance? What are some things that teachers can do to influence student response?

TEACHING TIP
In order to maintain a healthy voice and promote healthy vocal habits among their students, throughout the school day teachers can (1) continually drink water to ensure proper hydration, (2) decrease vocally abusive behaviors such as yelling or prolonged vocal use without rest, and (3) utilize an electronic voice amplification device in the classroom (personal or classroom system).

TEACHING TIP
Teachers who have students who stutter should attempt to reduce the stress on these students and create an accepting atmosphere (refer to the section entitled “Establish and Maintain a Positive Classroom Climate” for suggestions).

Does the student habitually abuse or misuse his or her voice?
Is there a possibility that the voice disorder is related to another medical condition?
Does the student’s voice problem make it difficult for others to understand him or her?
Has there been a recent, noticeable change in the student’s vocal quality?
Might the voice quality be related to a hearing loss?

Speech-language pathologists are trained to provide treatment for voice disorders. The management of voice disorders depends on a number of variables; however, “the first goal in the process of voice rehabilitation is to restore the condition of the vocal folds to normal or, if is not possible, compensate for whatever abnormality is present” (Silverman & Miller, 2006, p. 120).

Fluency Disorders

Fluency refers to the pattern of the rate and flow of a person’s speech. Normal speech has a rhythm and timing that is regular and steady, but normal speech patterns also include some interruptions in speech flow. We all sometimes stumble over sounds, repeat syllables or words, mix up speech sounds in words, speak too fast, or fill in pauses with “uh” or “you know.” Often, typical speech dysfluencies are related to stressful or demanding situations. When the interruptions in speech flow are so frequent or pervasive that a speaker cannot be understood, when efforts at speech are so intense that they are uncomfortable, or when they draw undue attention, the dysfluencies are considered a problem (Hallahan, Kauffman, & Pullen, 2009). Some of the key factors that distinguish normal from abnormal speech fluency include:

- Frequency of occurrence
- Duration of individual moments of dysfluency
- Amount of tension present

Many young children, especially those between the ages of two and five, demonstrate dysfluencies in the course of normal speech development. That is, when children go through periods of rapid language development they may experience periods of nonfluency (ASHA, 2007). Parents and teachers may become concerned about young children’s fluency problems, but most dysfluencies of early childhood begin to disappear by age five. The most frequent type of fluency disorder is stuttering, which affects about 4 to 8 percent of school-age children (CASLPA, 2005). Cluttering, another type of fluency disorder, occurs infrequently in school-age children. Disturbances of prosody and intonation are rare in children, and are often associated with other, more serious communication problems.

Fluency problems usually consist of blocking; repeating (e.g., M-m-m-m-mommy); or prolonging sounds, syllables, words, or phrases (e.g., Mmmmmmmommy). In stuttering, these interruptions are frequently obvious to both the speaker and the listener. Often, they are very disruptive to the act of speaking, much more so than disorders of articulation or voice. When the speech dysfluencies occur, listeners may become uncomfortable and try to finish the speaker’s words, phrases, or sentences. This discomfort is exacerbated when a speaker’s stuttering is accompanied by gestures, facial contortions, or physical movements. Stuttering is a pronounced interruption of normal speech and has a profound...
impact on listeners. Therefore, the disorder receives a lot of attention, even though it is not as prevalent as other communication disorders.

**Causes of Stuttering** Although many causes of stuttering have been suggested over the years, the current thinking among professionals in the field of communication disorders is that there is no one cause for stuttering. Current theories regarding the possible causes of developmental stuttering include factors such as language development, motor skills, personality, and environment.

There seems to be no doubt that children who stutter are vulnerable to the attitudes, responses, and comments of their teachers and peers. When considerable attention is focused on normal dysfluencies or when students begin to have negative feelings about themselves because of their stuttering, they may become even more anxious and their stuttering may get worse. Most students who stutter would benefit from intervention by a speech-language pathologist if they hope to avoid a lifelong problem that will affect their ability to communicate, learn, work, and develop positive interpersonal relationships.

**When Fluency Disorders Are a Serious Problem** Speech dysfluencies are a normal developmental occurrence for many children. However, some children will continue to experience these dysfluencies beyond their preschool and early school years. It would be difficult for a parent or teacher to determine whether the dysfluencies a child is demonstrating are normal nonfluencies. Therefore, parents and classroom teachers should refer any children experiencing dysfluencies to a speech-language pathologist for a speech and language evaluation. Teachers may wish to consider the following questions when monitoring a student’s speech dysfluencies:

- **Are the dysfluencies beginning to occur more often in the student’s speech or beginning to sound more effortful or strained?**
  Keep track of the quality of the student’s speech and his or her periods of fluency and dysfluency on a calendar. This will provide concrete information as to whether dysfluencies are occurring more often, as well as whether the quality of the student’s speech is changing (e.g., strained, effortful, etc.).

- **Is there a pattern to situations in which the student is fluent?**
  Collect information about the student related to his dysfluencies. With careful observation, teachers may be able to determine if a student’s dysfluencies occur under specific conditions—that is, with certain individuals, in particular settings, or when in stressful situations.

- **Is the student experiencing social problems?**
  Carefully monitor unstructured situations to determine the level of the student’s acceptance by peers. Much of the socialization that occurs in school takes place in the cafeteria, on the playground, in the halls, on the bus, and in other nonacademic settings. When a student is not successfully relating to peers in these environments because of his or her dysfluencies, the problem is likely to grow worse.

- **Is the student concerned about his or her dysfluencies?**
  Monitor the student’s verbal interactions with others and note whether he or she is becoming more concerned or self-conscious about the dysfluencies. For example, individuals interacting with the student may inadvertently criticize his or her fluency skills and increase his or her awareness of the difficulties he or she is having speaking fluently (e.g., “Think about what you want to say first”; “Take your time”).

**TEACHING TIP**

When deciding whether to refer a child for a speech and language evaluation, teachers should keep a log to record instances of dysfluency and the activities occurring with the student and rest of the class when dysfluencies occur. They should also note circumstances in which dysfluencies do not occur.

**Explore**

Stuttering: Straight Talk for Teachers

**FURTHER READING**

For more information on fluency intervention and current research initiatives in Canada, visit the Institute for Stuttering Treatment and Research’s (ISTAR) website at www.istar.ualberta.ca.
Is the student confident?
Talk to the student to ascertain his or her level of confidence and self-esteem. One of the biggest problems facing children who stutter is the interactive effect of the disorder. The more they are dysfluent, the more anxious, fearful, or nervous they become when they speak, thereby increasing the likelihood of stuttering. Children caught in this cycle of behaviour may be so self-conscious that they avoid situations in which they are required to speak and thus become isolated from friends and teachers.

Does the student avoid speaking because he or she is afraid of stuttering?
Students may associate particular topics, words, or situations with increased dysfluencies. Monitor whether the student avoids speaking in certain situations or avoids using certain phrases or words.

Classroom Adaptations and/or Accommodations for Students with Speech Disorders

Establish and Maintain a Positive Classroom Climate
Regardless of the type of speech disorder that students in general education classes demonstrate, it is crucial that teachers make every effort to create a positive, accepting, and supportive climate. This general suggestion is very important because it is a dimension that teachers are able to control. The following points are helpful to remember when dealing with children who have speech disorders:

- Talk with the student privately about his or her speech difficulties. Acknowledge your awareness of the difficulties the student is experiencing, and stress your belief that his or her speech will improve with practice.
- Encourage the student’s family to actively support the student’s educational and communication goals. Teachers and speech-language pathologists should ensure that a child’s parents and caregivers are an integral part of their child’s educational and communication intervention program.
- Don’t think of or refer to students with speech disorders in terms of their behaviours (i.e., they are “students,” not “stutterers”).
- Work closely with the speech-language pathologist, following suggestions and trying to reinforce specific skills.
- Encourage the student.
- Be positive.
- Accept the child just as you would any other student in the class.
- Model good speech and language skills for your students. Children can improve their speech and language skills by listening to good models.
- Provide lots of opportunities for students to participate in oral group activities.
- Give students plenty of chances to model and practise appropriate speech.
- Maintain eye contact when the student speaks.
- Be a good listener.
- Don’t interrupt or finish the student’s sentence.
When appropriate, educate other students in the class about speech disorders and about acceptance and understanding.

**Help Students Learn to Monitor Their Own Speech** Teachers can help students focus on using the skills they have been learning while working with a speech-language pathologist to improve their speech skills. When students are aware of how to make sounds correctly, they can then practice, monitor their own performance, and earn reinforcement from the teacher or parents whenever specific criteria are met.

**Work with Peers or Parents** If students are to master speech skills, they will need to practice the skills taught by the speech-language pathologist on a regular basis in many settings. One way for students to practice specific sounds is to perform exercises like those in Loehr's *Read the Picture Stories for Articulation* (Loehr, 2002; see Figure 3.3). With a partner, students can use short periods of downtime, such as between or before classes, to work on their articulation. Students can also use these types of activities to work at home with their parents. First, the student is trained in the speech therapy setting on a specific phoneme in a particular word position—in a key word—for example, the initial s sound.

---

**Sonny the Silly Seal**

<table>
<thead>
<tr>
<th>Target /s/ Words</th>
<th>Seal</th>
<th>Sun</th>
<th>Sailboat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal</td>
<td>Sun</td>
<td>Sailboat</td>
<td></td>
</tr>
<tr>
<td>Six</td>
<td>Sand</td>
<td>Stool</td>
<td></td>
</tr>
<tr>
<td>Seven</td>
<td>Starfish</td>
<td>Sticks</td>
<td></td>
</tr>
<tr>
<td>Sea</td>
<td>Circus</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sonny was a (seal) who loved to sit on the (sand) in the (sun) all day long near his (six) sisters and his best friend Sam the (starfish). Sonny did silly tricks for his sisters on the (sand) and in the (sea). Sam the (starfish) loved when Sonny would do somersaults while singing silly songs. One day, Sonny's friend Sam the (starfish) told him that the (circus) was going to be on the big island.

---

**Figure 3.3 Sample Form for Articulation Practice**

in seal. After the student has reached 90 percent mastery of producing the s sound at the beginning of words, she or he then reads a story that contains words beginning with the s sound to a classmate or to his or her parents. Each practice session should take no more than five minutes and will provide students with practice that is simple and fun. In the classroom, both partners should be reinforced for their participation. However, it is important to note that every student who experiences articulation or phonological difficulties demonstrates individual strengths and needs. Parents and teachers should consult with a student’s speech-language pathologist prior to implementing any type of speech practice activity in the classroom or at home.

**Teach Students Their Own Strategies** Many of the speech problems that students demonstrate while young can be corrected and modified with therapy. While the therapy is going on, the teacher and speech-language pathologist should focus on giving students strategies for successful learning. Students can use these strategies to maximize their academic and social strengths. Some of these strategies also require adaptations or accommodations on the part of the teacher in structuring situations and requirements.

- Encourage students to participate in groups in which responses do not have to be individually generated.
- Teach students to self-reinforce by recognizing when they are doing well and by self-appreciating.
- Let students practise skills with a friend in real situations so that they are not afraid or nervous when faced with the “real thing.”
- Let students record their own speech and listen carefully for errors so that they can discriminate between correct and incorrect sounds.
- Help students come up with strategies for dealing with specific people or situations that make them nervous (e.g., walking away, counting to 10 before they speak, deep breathing, etc.).

### Tips for Adapting a Lesson for Declan

Declan’s primary limitations include difficulty using speech sounds correctly, following multi-step directions, and initiating and maintaining peer interactions (as described in the chapter-opening vignette). To help to address these areas of concern in the classroom, Declan’s teacher can:

- **model appropriate use of sounds Declan has difficulty pronouncing.** For example, if Declan has difficulty pronouncing the /l/ sound his teacher can read books aloud to the class that contains a lot of words containing the letter “l,” such as a book about lemurs. This will provide good speech sound models for Declan in the classroom environment.
- **imitate and expand his use of language.** For example: if Declan uses a short sentence to relay information such as “I need more paper.” The teacher can imitate and expand his utterance to, “You need more paper to finish your art collage? I will get you some more paper to finish your project.”
- **break longer multi-step directions into single step directions.** For example, if the teacher wants students to go to their lockers to get supplies and then start their assignment she or he can first ask Declan to go to his locker and get his materials. When he returns to his desk the teacher can give him the next direction he needs to follow. As Declan improves his ability to understand and carry out one-step directions, the teacher can move to requiring him to complete two-step directions, and then three-step directions.
LANGUAGE DISORDERS

Language is the system we use to communicate our thoughts and ideas to others. According to Lahey (1988), language is a code "whereby ideas about the world are expressed through a conventional system of arbitrary signals for communication" (p. 2). The interrelationships of what we hear, speak, read, and write become our format for sharing information.

For most of us, spoken language is the tool we use to communicate our ideas, but even the most articulate, fluent, pleasant speech would be useless without a language system that enables us to understand and be understood. Language is an integral component of students' abilities in reading, writing, speaking, and listening. Disorders of language can have a serious impact on academic performance. In recent years, the emphasis in the field of communication disorders has shifted away from remediation of speech problems to an increased focus on language disorders.

More important for classroom teachers, however, is that remediation of language disorders will often be as much their responsibility as it is the speech-language pathologist's. Although remediation of speech problems is often provided in a therapeutic setting, it is often then supported and reinforced by the classroom teacher. Teachers may, in fact, direct and manage their students' overall language development in collaboration with the speech-language pathologist and other special education staff. Recent research has proven that some types of language disorders are best treated collaboratively in the classroom (McGinty & Justice, 2006).

We know humans can communicate in several ways. We generally describe modes of communication as either receptive language, which involves receiving and decoding or interpreting language, or expressive language, which is the encoding or production of a message. Reading and listening are examples of receptive language; writing and speaking are forms of expressive language.

As with speech disorders, knowing the normal sequence of language development is important in working with students with language disorders. Some children may be delayed in their development of language but still acquire skills in the same sequence as other children. Other children may acquire some age-appropriate language skills but have deficits in other specific areas. Table 3.2 shows the normal patterns of language development for children with language disorders and children without language disorders. Although teachers may refer to these general patterns of language development to judge students' overall progress, teachers should not expect every child to follow this precise sequence on these exact timelines.

Dimensions of Language

Earlier in the chapter, some terminology related to language disorders was introduced. In addition, we refer to the dimensions of language and their related impairments in terms of form, content, and function (or use). Students can demonstrate impairments in any or all of these areas.

Form describes the rule systems used in oral language. Three different rule systems are included when we discuss form: phonology, morphology, and syntax.

Phonology is the rule system that governs the individual and combined sounds of a language. Phonological rules vary from one language to another. For example, some of the guttural sounds heard in German are not used in English, and some of the vowel
<table>
<thead>
<tr>
<th>Age</th>
<th>Language-Disordered Child</th>
<th>Example</th>
<th>Age</th>
<th>Normally Developing Child</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 months</td>
<td>First words</td>
<td><em>this, mama, bye-bye, doggie</em></td>
<td>13 months</td>
<td>First words</td>
<td><em>here, mama, bye-bye, kitty</em></td>
</tr>
<tr>
<td>38 months</td>
<td>50-word vocabulary</td>
<td><em>this doggie, more apple, this mama, more play</em></td>
<td>17 months</td>
<td>50-word vocabulary</td>
<td><em>more juice, here ball, more TV, here kitty</em></td>
</tr>
<tr>
<td>40 months</td>
<td>First two-word combinations</td>
<td></td>
<td>18 months</td>
<td>First two-word combinations</td>
<td></td>
</tr>
<tr>
<td>48 months</td>
<td>Later two-word combinations</td>
<td><em>Mimi purse, Daddy coat, block chair, dolly table</em></td>
<td>22 months</td>
<td>Later two-word combinations</td>
<td><em>Andy shoe, Mommy ring, cup floor, keys chair</em></td>
</tr>
<tr>
<td>52 months</td>
<td>Mean sentence length of 2.00 words</td>
<td></td>
<td>24 months</td>
<td>Mean sentence length of 2.00 words</td>
<td></td>
</tr>
<tr>
<td>55 months</td>
<td>First appearance of <em>-ing</em></td>
<td><em>Mommy eating</em></td>
<td>24 months</td>
<td>First appearance of <em>-ing</em></td>
<td><em>Andy sleeping</em></td>
</tr>
<tr>
<td>63 months</td>
<td>Mean sentence length of 3.10 words</td>
<td></td>
<td>30 months</td>
<td>Mean sentence length of 3.10 words</td>
<td></td>
</tr>
<tr>
<td>66 months</td>
<td>First appearance of <em>is</em></td>
<td><em>The doggie’s mad</em></td>
<td>30 months</td>
<td>First appearance of <em>is</em></td>
<td><em>My car’s gone!</em></td>
</tr>
<tr>
<td>73 months</td>
<td>Mean sentence length of 4.10 words</td>
<td></td>
<td>37 months</td>
<td>Mean sentence length of 4.10 words</td>
<td></td>
</tr>
<tr>
<td>79 months</td>
<td>Mean sentence length of 4.50 words</td>
<td></td>
<td>37 months</td>
<td>First appearance of indirect requests</td>
<td><em>Can I have some cookies?</em></td>
</tr>
<tr>
<td>79 months</td>
<td>First appearance of indirect requests</td>
<td><em>Can I get the ball?</em></td>
<td>40 months</td>
<td>Mean sentence length of 4.50 words</td>
<td></td>
</tr>
</tbody>
</table>


Combinations of English are not found in Spanish. The ability to process and manipulate the phonological components of language has been shown to be a critical component in the development of early reading skills.

*Morphology* refers to the rule system that controls the structure of words. Free morphemes (morphemes are units of meaning) can stand alone in word formation (e.g., *stop*), while bound morphemes cannot stand alone (e.g., *un-*,-*ed-*,-*ing*). The structures of words govern their meanings; therefore, comparative suffixes are important, such as *-er* or *-est*.
and plural forms, such as the s that changes book to books. Hall, Oyer, and Haas (2001) provide an example of how morphemes can change a basic word into similar words with many different meanings:

The word “friend” is composed of one free morpheme that has meaning. One or more bound morphemes may be added, making “friendly,” “unfriendly,” “friendless,” “friendliness,” “friendship,” and “friendlier.” There are rules for combining morphemes into words that must be followed (e.g., “disfriend” is not an allowable word and thus has no meaning). (p. 61)

Syntax is the ordering of words in such a way that they can be understood. Syntax rules determine where words are placed in a sentence, and just like phonology, they vary from one language to another. Rules governing negatives, questions, tenses, and compound or simple sentences determine the meanings of word combinations. For example, the same words used in different combinations can mean very different things: The boy hit the ball is not the same as The ball hit the boy.

All of these rule systems affect how we use and understand language. Children’s abilities to understand and correctly use rules related to form develop sequentially as their language skill develops. Language form is important not only in spoken language, but also in written and in sign language systems, and in augmentative and alternative communication (AAC), discussed later in this chapter.

Content Content refers to the intent and meaning of language and its rule system; semantics deals with the meaning of words and word combinations. Without specific words to label and describe objects or ideas, our language would have no meaning. When students fail to comprehend concrete and abstract meanings of words, inferences, or figurative expressions, it is difficult for them to understand more subtle uses of language such as jokes, puns, similes, proverbs, or sarcasm. As children mature, they are better able to differentiate meanings of similar words, classify them according to similarities and differences, understand abstract meanings of words, and comprehend figurative language.

Use When we use language in various social contexts, we follow another set of rules: pragmatics. The purpose and setting of our communication as well as the people with whom we are communicating determine the language we use. If children are to build and maintain successful relationships with others, it is important that they understand and effectively use skills appropriate to the context. For example, when children speak to adults, it is helpful if they use polite, respectful language; when they speak to their friends, they will most likely use less formal spoken language, demonstrate more relaxed body language, and take turns talking (Owens, 2008). Declan in the opening vignette was described to have difficulty initiating and maintaining interactions with his peers during free play activities. Difficulties using language in peer interactions can have a negative impact on building social relationships with peers.

Causes of Language Disorders

Language disorders can occur due to medical problems (e.g., traumatic brain injury during or after birth, hearing loss) or can have no known cause (ASHA, n.d.). There is also substantial evidence for familial transmission of specific language impairment (SLI).
The incidence in families with a history of SLI is estimated at 20 percent to 40 percent (Choudhury & Benasich, 2003). However, it is important to note that being unable to determine the exact cause of a language disorder does not have an adverse impact on assessment or intervention efforts. Delayed language occurs when a child develops language in the same approximate sequence as other children, but at a slower rate. Causes of language delays include intellectual disability, hearing loss, or lack of stimulation or appropriate experiences. Sometimes language development is interrupted by illness or physical trauma. This type of language problem is increasingly common among children as a result of traumatic brain injury (TBI). In general education classrooms, teachers may encounter any or all of these types of language disorders, ranging from very mild to severe. Language disorders are integrally linked to autism spectrum disorders and fetal alcohol spectrum disorders. Chapter 8 can be reviewed to learn more about disorders that are considered to be part of the autism and fetal alcohol spectrums.

**Indicators of Language Impairments**

Some teachers may have an overall sense that a student is demonstrating language problems; others may not notice anything amiss. Wiig and Semel (1984) identified some indicators of language problems by grade level:

- **Primary grades:**
  - Problems following verbal directions
  - Difficulty with pre-academic skills (recognizing sound differences)
  - Phonics problems
  - Poor word-attack skills
  - Difficulties with structural analysis
  - Problems learning new material

- **Intermediate grades:**
  - Word substitutions
  - Inadequate language processing and production that affects reading comprehension and academic achievement

- **Middle or junior and high school:**
  - Inability to understand abstract concepts
  - Problems understanding multiple word meanings
  - Difficulties connecting previously learned information to new material that must be learned independently
  - Widening gap in achievement when compared to peers

Teachers can also check for linguistic, social, emotional, and academic problems that are related to language disorders. Examples of these problems are shown in Table 3.3. In addition, Figure 3.4 presents a checklist of behaviours that may indicate either speech or language problems. Children who have language disorders sometimes develop patterns of interaction with peers, teachers, and family members that may result in behaviour problems. These problems might seem to have nothing to do with
### TABLE 3.3 Examples of Linguistic, Social, Emotional, and Academic Problems Related to Language Disorders

<table>
<thead>
<tr>
<th>Linguistic Problems</th>
<th>Social Problems</th>
<th>Emotional Problems</th>
<th>Academic Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>A student with language difficulties may:</td>
<td>A student with language difficulties may:</td>
<td>A student with language difficulties may:</td>
<td>A student with language difficulties may:</td>
</tr>
<tr>
<td>• omit speech sounds in words,</td>
<td>• not function well in new situations,</td>
<td>• be easily frustrated and/or</td>
<td>• have poor memory skills,</td>
</tr>
<tr>
<td>• have a limited receptive and/or expressive vocabulary,</td>
<td>• express his/her ideas, wants, or needs well,</td>
<td>• have a poor self-concept</td>
<td>• problems organizing or planning assignments or activities, or</td>
</tr>
<tr>
<td>• have difficulty beginning, maintaining, or closing a story or conversation (e.g., Conti-Ramsden, 2003; Fey, Catts, Proctor-Williams, Tomblin, &amp; Zhang, 2004; Ratner &amp; Harris, 1994).</td>
<td></td>
<td>(e.g., Fujiki, Brinton, &amp; Clarke, 2002; Ratner &amp; Harris, 1994).</td>
<td>• problems recognizing and/or decoding words when reading (e.g., Catts &amp; Kamhi, 2005; Ratner &amp; Harris, 1994).</td>
</tr>
</tbody>
</table>


Improve Students’ Comprehension in the Classroom  Clary and Edwards (1992) suggest some specific activities to improve students’ receptive language skills:

■ **Give students practice in following directions.**
  Begin with one simple direction, and then increase the length of the list of directions. Have a student perform a simple task in the classroom, such as closing the door, turning around, and so on.

■ **Have students pair up and practice descriptions.**
  Place two students at a table separated by a screen. Place groups of identical objects in front of both students. Have one describe one of the objects; the other must determine which object is being described. Reverse roles with new sets of objects.

■ **Let students work on categorizing.**
  Orally present a list of three words. Two should be related in some way. Ask a student to tell which two are related and why (e.g., horse, tree, dog). For younger students, start by having students compare and organize physical objects (e.g., plastic animals, plastic food) and pictorial representations of the objects (e.g., pictures cut out of magazines) before moving to orally presented words.

The Evidence-Based Practice box in this chapter provides some additional suggestions for teaching listening skills. Chapters 13 and 14 can also be reviewed to consider specific activities that could be used to teach listening skills to elementary students and secondary students.
Give Students Opportunities for Facilitative Play This type of interaction provides modelling for students so that they can imitate and expand their own use of language. For example:

- The teacher models self-talk in a play activity. (“I’m making the cars go.”)
- The teacher elicits comments from the student and then expands on them. (“Yes, the cars are going fast.”)
- The teacher uses “buildups” and “breakdowns” by expanding on a student’s ideas, breaking them down and then repeating them. (“Red car go? Yes, look at the red car. It’s going fast on the road. It’s going to win the race.”) (Nowacek & McShane, 1993)

Encourage Students to Talk with Their Teachers and Peers Sometimes students who are reluctant to speak require encouragement. In addition to encouraging them with positive social interactions, teachers might also have to structure situations in which students must use language to meet some of their needs in the classroom. The strategies that follow should prompt students to use language when they might otherwise not.

- Place items out of reach so that the child has to ask for them.
- When a child asks for an item, present the wrong item (e.g., the child asks for a spoon and you present a fork).

Evidence-Based Practice

Teaching Strategies to Help Problem Listeners in the Classroom

- Allow for clarification and repetition of questions during oral tests.
- Limit the use of figurative language and complex or passive sentences. When figurative language expressions are used (e.g., “He let the cat out of the bag”), provide explanations of the expressions’ literal and figurative meanings.
- Be an interesting speaker—use gestures, facial expressions, movement, and variety in your voice.
- Encourage students to ask questions.
- Identify students who are having difficulty listening in class and pair them with “study buddies.”
- Keep sentence structures simple and direct.
- Limit concentrated listening time to short intervals.
- Make simple adaptations in your classroom to improve acoustics (e.g., place felt pads on the bottoms of chair and desk legs to dampen the sound when they are moved).
- Reduce noise levels in the classroom during listening tasks.
- Refer students who are experiencing listening difficulties to an audiologist for a hearing assessment.
- Repeat and rephrase information for students.
- Seat students with listening difficulties strategically (e.g., away from classroom door, at front of classroom).
- Speak slowly, and pause between spoken thoughts.
- Use advanced organizers and preview questions to help focus listening.
- Use the blackboard and other visual aids (e.g., overhead projector, videos).

Adapted from It’s Time to Listen: Metacognitive Activities for Improving Auditory Processing in the Classroom (2nd ed., pp. 9–15), by P.A. Hamaguchi, 2002, Austin, TX: PRO-ED.
Use Naturalistic Techniques and Simulated Real-Life Activities to Increase Language Use

Often, the most effective techniques for instilling language acquisition and use are those that will be easy for teachers to implement and easy for students to generalize to everyday situations. Teachers can encourage generalization by using naturalistic and situational strategies and real-life activities.

Naturalistic Techniques

- Try cloze activities. (“What do you need? Oh, you need paint and a ______________. That’s right, you need paint and a brush.”)
- Emphasize problem solving. (“You can’t find your backpack? What should you do? Let’s look on the hook. Is your coat there? What did we do to find your coat? That’s right, we looked on the hook.”)
- Use questioning techniques. (“Where are you going? That’s right, you are going to lunch.”)

Simulated Real-Life Activities

- Let students simulate a newscast or commercial.
- Have students write and follow their own written directions to locations in and around the school.
- Play “social charades” by having students act out social situations and decide on appropriate responses.
- Have one student teach an everyday skill to another (e.g., how to shoot a basket).
- Using real telephones, give students opportunities to call each other, and to give, receive, and record messages.

Develop Students’ Conversational Skills through Story Reading

McNeill and Fowler (1996) give some excellent suggestions for helping students with delayed language development. Since students with language development problems often do not get the results they want through their ordinary conversations, they need more practice. What better way to practise effective language skills than through story reading! Students of all ages enjoy being read to, whether individually or in small groups while students are young, or in larger classes when they are in intermediate or secondary grades.

McNeill and Fowler suggest four specific strategies for teachers to use when reading stories aloud:

- Praise the students’ talk.
- Expand on their words.
- Ask open-ended questions.
- Pause long enough to allow students to initiate speaking.
In addition, they emphasize taking turns, so that students have an opportunity to clarify their messages, hear appropriate language models, and practise the unspoken rules of communication. McNeill and Fowler (1996) also recommend coaching parents in how to give their children opportunities to talk and how to respond when their children do talk. When parents pause, expand on answers, and ask open-ended questions that require more than just “yes” or “no” responses, they can become their children’s best teachers.

**Use Music and Play Games to Improve Language**Teachers should always try to have fun with students. Using music and playing games are two ways language can be incorporated into enjoyable activities.

- **Music**
  - Use songs that require students to request items (e.g., rhythm sticks or tambourines passed around a circle).
  - Have picture symbols for common songs so that students can request the ones they like.
  - Use props to raise interest and allow students to act out the story (e.g., during “Humpty Dumpty” the student falls off a large ball).
  - Use common chants such as “When You’re Happy and You Know It,” and let students choose the action (e.g., clap your hands).

- **Games That Require Language Comprehension and Expression Skills**
  - Play “Simon Says.”
  - Play “Musical Chairs,” using words rather than music. (Pass a ball around a circle. When the teacher says a magic word, the student with the ball is out.)
  - Use key words to identify and organize students. (“All of the boys with red hair stand up. Everyone who has a sister sit down.”)
  - Play “20 Questions.” (“I’m thinking of a person.” Students ask yes-or-no questions.)

**Arrange Your Classroom for Effective Interactions** The physical arrangement of the classroom can contribute to the success of students who have speech or language difficulties. The following guidelines might improve students’ language development:

- Give instructions and important information when distractions are at their lowest.
- Use consistent attention-getting devices, with either verbal, visual, or physical cues (e.g., switching off the classroom light, raising your hand in the air).
- Be specific when giving directions (e.g., “Please finish page 12 in your math book.”).
- Write directions on the chalkboard, flipchart, or overhead so that students can refer to them. For younger students, post picture cues in the room to remind students of the directions you have given them (e.g., picture of paintbrush to remind students they are to complete their painting project).
- Use students’ names frequently when talking to them.
- Emphasize what you’re saying by using gestures and facial expressions.
- Pair students up with buddies for modelling and support.
Allow for conversation time in the classroom so that students can share information and ideas.

Encourage students to use calendars to organize themselves and manage their time. (Breeding, Stone, & Riley, n.d.)

**Use Challenging Games with Older Students** Older students may require continued intervention to improve their language skills. However, the activities chosen must be appropriate and not seem like “baby” games. Thomas and Carmack (1993) have collected ideas to involve older students in enjoyable, interactive tasks:

- Read fables or stories with morals. Discuss outcomes, and focus on the endings.
- Do “Explain That.” Discuss common idiomatic phrases, and help students discover the connection between the literal and figurative meanings (e.g., *She was on pins and needles.*).
- “Riddlemania” presents riddles to students and has them explain what makes them humorous.
- Have “Sense-Able Lessons.” Bring objects to see, taste, hear, and smell, and compile a list of students’ verbal comments. (p. 155)

**Modify Strategies to Develop Students’ Learning Tools** When facilitating language development for older students, help them develop their own strategies to use in challenging situations (Thomas & Carmack, 1993). Requiring them to use higher-order thinking skills will both require and stimulate higher-level language.

- Pair students to find word meanings. Use partners when working on categories such as synonyms or antonyms. Let students work together to master how to use a thesaurus.
- Teach students to categorize. Begin with concrete objects that they relate to easily, such as types of cars or names of foods, and then move to more abstract concepts, such as feelings or ideas.
- Play reverse quiz games like “Jeopardy!” in which students have to work backward to think of questions for answers. (pp. 155–163)

**Work Collaboratively with the Speech-Language Pathologist** LINC (Language IN the Classroom) is a program adapted for use in schools (Breeding et al., n.d.). The program’s philosophy holds that language learning should occur in the child’s most natural environment and in conjunction with other content being learned. The development of students’ language should relate to their world and should be a learning experience, not a teaching experience.

The purpose of the program is to strengthen the language system of those students in general education classrooms who need to develop coping and compensatory skills to survive academically. Another goal is to transfer language learned from the therapy setting to the classroom, thereby allowing children to learn to communicate, rather than merely talk. The teacher and the speech-language pathologist must both be present for the approach to be successful. The two professionals work together to plan unit lessons that develop language skills in students.
Use Storytelling and Process Writing  When children listen to and retell a story, they incorporate it into their oral language repertoire. Students can retell stories they have heard, tell stories from their own experience, and write down and illustrate their oral presentations. In process writing, students are instructed based on what they can already do. This and other balanced literacy approaches often allow students who have had negative language experiences to begin to succeed, to link written and spoken language, and to grow as communicators.

Researchers are starting to explore the uses of newer technological programs and devices in the field of education. For example, studies are exploring the use of selected computer software or applications (apps) with the devices such as tablets and smart phones in the classroom environment to address curricular goals. The speech-language pathologist should always be consulted when selecting any type of technology for use with students with speech and language difficulties to ensure the ease of use and appropriateness for the individual of the programs or devices. The following website offers tips and links educators and speech-language pathologists can use when considering the integration of any applications or devices into a child’s educational program: www.asha.org/SLP/schools/Applications-for-Speech-Language-Pathology-Practice/.

LANGUAGE DIFFERENCES

Children’s patterns of speech and use of language reflect their culture and may be different from that of some of their peers. It is important not to mistake a language difference for a language disorder, although a disorder must not be overlooked in a student with language differences. Variations in family structure, child-rearing practices, family perceptions and attitudes, and language and communication styles can all influence students’ communication (Wayman, Lynch, & Hanson, 1990).

Addressing Linguistic Diversity

Educators will encounter in their classrooms many students whose first language is not English. These students may demonstrate difficulty in using the English language in the classroom environment. For example, students who are English language learners (ELLs) often exhibit error patterns that can look like language disorders when they are in fact part of the normal process of second-language acquisition (Roseberry-McKibbin & Brice, 2002). It is crucial that teachers of students who are English language learners recognize these patterns as language differences rather than communication disorders in order to avoid unnecessary referrals:

■ Interference or transfer: Students may make errors in English form because of the influence of structures or patterns in their native language.
■ Silent period: Children who are learning a new language focus on listening to and attempting to understand the new language before trying out what they have learned. This silent period may last as long as a year in very young children and as briefly as a few weeks or months in older children.
■ Code switching or code mixing: Languages are blended in phrases or sentences such that students alternate between the two.
■ Subtractive bilingualism: As students learn English, they can begin to lose skill and proficiency in their native language if it is not also supported and valued.
Helping students learn the classroom’s language of instruction, which in most cases is English, will assist them in functioning in this environment. However, in Canada, educators working on and off reserves also have the challenge of helping Aboriginal students maintain and develop their first language or the language of use in their community. The Common Curriculum Framework for Aboriginal Language and Culture Programs (http://education.alberta.ca/media/929730/abor.pdf) is one resource educators can use when working with students who speak an Aboriginal language. There is concern that many Aboriginal languages are being lost, so initiatives to preserve and revitalize their use is ongoing. One such initiative is the FirstVoices Language Archive (firstvoices.com). This organization is working to help Aboriginal communities archive and teach their languages using multi-media language tools (e.g., sounds, pictures, videos).

Relationship between Communication Style and Culture

Culture has a strong influence on the style of communication. Many areas of communication style can be affected by factors such as gender, status, and age roles; rules governing interruptions and turn taking; use of humour; and how to greet or leave someone. Teachers must be aware of the many manifestations of culture in nonverbal communication, as well. Differences in rules governing eye contact, the physical space between speakers, use of gestures and facial expressions, and use of silence can cause dissonance between teachers and students from differing cultures. Walker (1993) has described how differences such as directness of a conversation, volume of voices, and reliance on verbal (low-context) versus nonverbal (high-context) parts of communication affect attitudes toward the speaker. Teachers can respond to cultural differences in several ways. These suggestions are adapted from Walker (1993) and should be helpful for teachers who want to enhance both overall achievement and communication skills with students who are culturally or linguistically different:

■ Try to involve community resources, including churches and neighbourhood organizations, in school activities.
■ Invite parents to visit your classroom in order to learn more about students’ families and encourage parent participation in classroom and school activities.
■ Allow flexible hours for conferences.
■ Question your own assumptions about human behaviour, values, biases, personal limitations, and so on.
■ Try to understand the world from the student’s perspective.
■ Ask yourself questions about an individual student’s behaviour in light of cultural values, motivation, and world views, and how these relate to his or her learning experiences.
■ Remind yourself and your students to celebrate and value cultural and linguistic differences among individuals in their school and community.
■ Consult with a speech-language pathologist to understand how to differentiate between students who have language differences and students who have language disorders.

FURTHER READING

Multicultural Considerations in Assessment

Assessment in the area of communication disorders is often complicated, just as it is for students with other exceptionalities. Linguistic differences are a contributing factor. The number of students in our classrooms who are linguistically different and who require services in learning to understand and speak English is increasing. Language differences can affect a student’s oral and written communication. Therefore, teachers should consult with personnel in special education, English as a second language (ESL), speech and language services, and bilingual education to obtain appropriate evaluation and programming services for these students. Observation is an important form of assessment, particularly when assessing students who are linguistically different. The Diversity Forum feature provides some suggestions for observing these children.

There are many considerations for assessment personnel who work with students with cultural or linguistic differences. The following suggestions may be useful for classroom teachers who suspect that students may have communication disorders:

■ When screening with tests, always select tests that have the most valid items for the skills to be assessed.
■ Consider procedural modifications, such as lengthening the time limit.
■ Try to assess whether the child has had access to the information.
■ Consider scoring the test in two ways, first as the manual indicates, then allowing credit for items that may be considered correct in the child’s language system or experiences. (Record and report both ways, and indicate the adjustments.)
■ Focus on what the child does well rather than on what he or she cannot do. (Toliver-Weddington & Erickson, 1992)

Because of the increasing number of students in public schools from cultural and linguistic minority groups, teachers are recognizing the need for information related to learning and communication styles as well as modifications to curriculum and instruction.

FURTHER READING


TEACHING TIP

Remember the basic tenets of nondiscriminatory assessment when evaluating students with diverse cultural backgrounds or when reviewing assessment data that have already been collected (refer to “Multicultural Considerations in Assessment”).

Diversity Forum

Considerations for Observing Linguistically Different Students

1. Identify exactly what is to be observed. Be specific and know what you are watching as a part of the ongoing behaviour stream in classroom settings.
2. Record the time, date, and duration of your observation.
3. Number your observations of the same children across days. Important here is a systematic context and an easy, readily available reminder that this is, for example, the third observation of Juan, Tom, Hector, and Zoraida.
4. Make notes of what you are observing in a descriptive, specific form that tells exactly what occurred. Also, jot down any unexpected events that happened during your observation. However, when taking notes of these occurrences, it is helpful to jot down that they were “unexpected.”
5. Keep notes of your interpretations of what happened.

Although many of these children will never be identified as having a communication disorder, teachers in general education must be aware that differences in language and culture may often affect a student’s apparent proficiency in both oral and written communication.

**Augmentative and Alternative Communication (AAC)**

According to ASHA (2004a), “Augmentative and alternative communication (AAC) refers to ways (other than speech) that are used to send a message from one person to another.” The term augmentative communication denotes techniques that supplement or enhance communication by complementing whatever vocal skills the individual already has, such as gestures, facial expressions, and writing (ASHA, 2004a). Research has demonstrated that the use of communication devices does not inhibit the development of natural speech. Other individuals (e.g., those who are severely neurologically impaired and cannot speak) must use other techniques in place of speech—in other words, alternative communication (e.g., communication boards).

AAC is a multimodal system consisting of four components (symbols, aids, techniques, and strategies) that can be utilized in various combinations to enhance communication. Communication techniques used in AAC are usually divided into either aided or unaided forms. Unaided techniques include nonverbal methods that are used in typical communication and that do not require any physical object or entity in order to express information (e.g., speech, manual signs or gestures, facial communication). Aided communication techniques require a physical object or device to enable the individual to communicate (e.g., communication boards, charts, and mechanical or electrical devices). There are substantial numbers of individuals who lack functional speech because of intellectual disabilities, traumatic brain injury, deafness, neurological disorders, or other causes. Therefore, in recent years there has been an increased demand for augmentative and alternative communication. A student’s communication skills and needs will change over time, as will the types of technology and methods available to support communication. Thus, the educational team should continually monitor and regularly re-evaluate the usefulness of each AAC approach used by their students. This can be particularly challenging for speech-language pathologists and educators because of the rapid technological advances being made in recent years for individuals with communication difficulties (Baxter, Enderby, Evans, & Judge, 2012; Bradshaw, 2013). For example, Baxter, Enderby, Evans, and Judge (2012) conducted a systematic review and qualitative synthesis of research looking at the barriers and facilitators of using high-technology augmentative and alternative communication devices to explore concerns that newly developed technology may have limited functional use. They highlighted

the range of factors that can impact on provision and use of high technology AAC, which practitioners should consider and address as appropriate in the intervention process. These include: ease of use of the device; reliability; availability of technical support; voice/language of the device; decision-making process; time taken to generate a message; family perceptions and support; communication partner responses; service provision; and knowledge and skills of staff. (p. 115)
These authors concluded that practitioners need to be conscious of the facilitators of and barriers to using high-technology devices when making recommendations for their use with an individual with communication difficulties. These decisions must be made on an individual basis taking into consideration the strengths and areas of need of not only the individual with communication difficulties but also his or her family and the professionals working to provide support. The Technology Today feature lists some of the approaches and facilitating strategies for developing an effective team approach to serve students using AAC in the classroom.

Students who are unable to use spoken language to communicate might use a basic nonautomated communication device with no electronic parts; for example, a communication board or communication book containing symbols, words, and letters. Typically, this kind of device will contain common words, phrases, or numbers that can be arranged in either an alphabetic or a nonalphabetic format. Nonautomated communication devices are easy to construct and can be modified to fit the student’s vocabulary. Therefore, these devices are very useful in communicating with teachers, family members, and peers. There are several commercially available sets of symbols, including The Picture Communication Symbols (Mayer-Johnson, 2004), The Oakland Picture Dictionary (Kirsten, 1981), and the graphic database Boardmaker (Mayer-Johnson, 2004).

Electronic communication aids encompass a wide variety of capabilities, from simple to complex. Aids that produce voice are known as voice output communication aids or VOCAS. There are a large number of voice output communication aids available that vary greatly in their level of sophistication and complexity (e.g., aids that speak on message, aids with keyboards). The voice output might be amplified or digitized, or use
### Technology Today

#### Developing an Effective Team Approach to Serve Students Using AAC in the Classroom

<table>
<thead>
<tr>
<th>Approach</th>
<th>Facilitating Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative teaming</td>
<td>Regularly scheduled team meetings</td>
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<tr>
<td></td>
<td>Clearly defined roles and responsibilities of team members</td>
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<td></td>
<td>Mutual respect among team members</td>
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<td></td>
<td>Effective communication among team members and a proactive approach</td>
</tr>
<tr>
<td></td>
<td>Flexible interpretation of traditional roles of team members</td>
</tr>
<tr>
<td>Access to the curriculum</td>
<td>Working knowledge of the curriculum by all team members</td>
</tr>
<tr>
<td></td>
<td>Assessment of the student’s learning style by each member of the team</td>
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<tr>
<td></td>
<td>Provision of vocabulary and support for use of the device across all classroom activities and school events</td>
</tr>
<tr>
<td>Cultivation of social supports</td>
<td>Facilitation of social interactions between the student and his or her peers</td>
</tr>
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<td></td>
<td>Identification and use of natural supports in the classroom</td>
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<td></td>
<td>Training of peers as communication partners</td>
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<td></td>
<td>Fostering the independence and autonomy of the student</td>
</tr>
<tr>
<td>Maintenance and operation of AAC system</td>
<td>Familiarity with the basic maintenance, operation, and elements of the AAC device</td>
</tr>
<tr>
<td></td>
<td>Knowledge of how to access help and additional resources as necessary</td>
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<tr>
<td></td>
<td>Familiarity with the device and how to provide communication support</td>
</tr>
<tr>
<td>Building of a supportive classroom community</td>
<td>Use of co-operative learning strategies</td>
</tr>
<tr>
<td></td>
<td>Team teaching between general and special education personnel</td>
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<td></td>
<td>Working together to support all students in the classroom</td>
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<td></td>
<td>Promoting appreciation of differences within the classroom</td>
</tr>
</tbody>
</table>

Adapted from “Professional Skills for Serving Students Who Use AAC in General Education Classrooms: A Team Perspective” (pp. 51–56), by G. Soto et al., 2001, Language, Speech, and Hearing Services in the Schools, 32.

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Synthetic speech. Often, a voice synthesizer is used to produce speech output, while written output is produced on printers or displays. Software, which is becoming increasingly sophisticated, can accommodate the many different needs of individuals who cannot produce spoken and/or written language. Some examples of electronic communication aids and their key features are shown in Table 3.4. Researchers are starting to explore the uses of newer technological programs and devices in the fields of health and education. For example, Bradshaw (2013) set out to give an overview of communication applications or apps that can be used to support augmentative and alternative communication (AAC) with devices such as tablets and smart phones. In her review, Bradshaw (2013) pointed out “these devices and apps clearly have a role within the spectrum of AAC devices currently available. They may have some distinct advantages in cost, ease of use and acceptability but more research into their use is needed” (p. 31). That is, a body of evidence...
is needed to support the benefits of using specific applications across environments for individuals with a variety of communication levels and needs.

### Enhancing Inclusive Classrooms for Students with Communication Disorders

The traditional service delivery model for speech and language intervention involved regular pull-out sessions in which speech-language pathologists worked with students in a setting outside the regular classroom. However, a combination of intervention

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**TABLE 3.4** Electronic Communication Aids and Their Key Features

<table>
<thead>
<tr>
<th>Device</th>
<th>Features</th>
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</thead>
<tbody>
<tr>
<td>BigMack</td>
<td>A large, colourful, single message digitizer. Record and re-record a message, song, sound, storyline, or choice of up to 20 seconds. A picture or label can easily be stuck to the large button. Can be accessed by pressing anywhere on the large button or by a separate switch. Can be used as a switch to control other devices, toys, or appliances.</td>
</tr>
<tr>
<td>Lightwriter SL35</td>
<td>A compact, portable keyboard will speak what is typed into it. Text messages are displayed on the two-way screen, and synthesized speech is used. Can be customized for people with more complex needs. Add-ons, such as key guards, can be purchased, and a range of models are available. Keystrokes are reduced by using memory and word prediction.</td>
</tr>
<tr>
<td>ChatPC</td>
<td>Based on a palmtop Windows CE computer. Housed in a durable case to give additional protection and additional amplification. Has a colour touchscreen, and over a hundred pages of messages can be programmed. An onscreen keyboard is available, and this speaks out what is typed into it. 3000+ symbols are supplied and can be supplemented with scanned or digital images. Speech output can be digital or synthetic. Changes can be made on the device or on a computer and then downloaded.</td>
</tr>
<tr>
<td>Dynavox 3100</td>
<td>Touchscreen device offers word layouts, symbol layouts, or a combination of both. Many preprogrammed page sets, suitable for users with a wide range of ability levels. Flexible layout can be thoroughly customized. Symbol-supported word prediction encourages literacy. DecTalk speech synthesis offers nine different voices. Can be accessed via touchscreen, mouse, joystick, or switches. Auditory and visual scanning modes are possible. Built-in infrared for environmental controls and computer access.</td>
</tr>
</tbody>
</table>
Personal Spotlight

Speech-Language Pathologist Judy Meintzer

In over 30 years as a speech-language pathologist, Judy Meintzer has worked as an early childhood/preschool speech-language pathologist, and served in a variety of administrative roles in health settings. She is currently working as the Speech-Language Pathology Professional Practice Lead for Edmonton Zone, Alberta Health Services. In addition, she works as a sessional instructor in the area of early childhood language assessment and intervention in the Department of Speech Pathology and Audiology at the University of Alberta. In her career, Judy has spent a lot of time working with families and their children who have been identified with a variety of communication disorders.

She believes it is important to identify and provide speech and language intervention to children who are experiencing delays and disorders as soon as possible in a child’s life, in order to decrease the potential impact of speech and language difficulties in later years. When working with all learners, Judy feels it is important to use a strength-based approach to build skills that support children’s language development (e.g., social skills, visualizing and verbalizing skills, listening and phonological awareness skills).

We can focus on what a child is interested in and does well to address any skills that are less well developed. For example, the expansion of children’s language skills can be addressed in both structured and unstructured environments (e.g., classroom and home environment) by working with all the individuals who are a part of the child’s life. Parents/caregivers, child-care staff, early intervention workers, educators, and other professionals such as psychologists and social workers can all work together to help expand a child’s speech and language skills. Judy feels it is crucial when working with children and their families to focus on the child’s interests and model age-appropriate language that fits the interest/activity in which the child is engaged. “For example, if the child is stacking as many blocks as possible, language models provided to the child may include up, uh-oh, high, taller, or fall down. If the student is sorting blocks into colours, language models may include same colour, different colour, green like a tree.” We can work as part of a multi-disciplinary team, and encourage all individuals interacting with a child to build on his/ her interests and skills. We can work to provide language models that match his or her level of development so we can better meet the needs of all children in our communities experiencing communication delays and disorders.

Source: Judy Meintzer

TEACHING TIP

The speech-language pathologist should always be consulted when selecting any type of technology for use with students with speech and language difficulties.

approaches can be effective when providing speech and language services to students in public schools (i.e., a combination of individual sessions and classroom consultation). Just as academic services to students with exceptionalities have become more and more integrated into general education programs, speech-language services are following a more inclusive model. This collaboration between the classroom teacher and special education staff might involve having the speech-language pathologist in the classroom to work with individual students, small groups, or the entire class. This could mean having the teacher and speech-language pathologist teach alternate lessons or portions of a lesson, or co-teach the same lesson at the same time. The Personal Spotlight on Judy Meintzer describes how a speech-language pathologist views the importance of early identification and intervention related to speech and language difficulties and disorders.
As schools try to maximize the positive impact of professional collaboration, it is important to recognize and overcome the barriers inherent in the process. The barriers to greater collaboration among speech-language professionals and teachers can include the following:

- **Territorial obstacles** ("This is my job; that is your job.")
- **Time concerns** ("When are general education teachers supposed to find the time to meet, plan, and modify?")
- **Terror** ("I’m afraid this new way won’t work."; Kerrin, 1996)

Fortunately, team members can use the following tips to overcome these obstacles:

- Try to be flexible and creative when scheduling conferences.
- Encourage everyone involved to ask questions.
- Invite speech-language professionals into the classroom.
- Ask for assistance in planning.
- Maintain open, regular communication.
- Keep an open mind, a co-operative spirit, and a sense of humour (Kerrin, 1996).

### Future Trends

Several forces are changing the field of communication disorders in today’s schools. First, general education teachers are likely to see more students with moderate to severe exceptionalities in their classrooms. The movement toward more inclusive environments for students will require classroom teachers to provide more classroom-based interventions for these students. Moreover, recent research suggests a shift away from standardized assessment instruments toward dynamic, authentic, and curriculum-based assessment methods. The observations and input of the classroom teacher play a crucial role in each of these assessment models.

As a result of expanding knowledge and skills among professionals trained in speech-language pathology, the scope of the profession’s practice has been broadening and will continue to do so. In addition to providing services in the more traditional area of oral communication skills, speech-language pathologists now working in schools are often called on to have expertise in swallowing disorders, selecting AAC systems, providing intervention and recommending classroom modifications for children with traumatic brain injuries and other complex neurological disorders, and promoting and enhancing literacy skills. The caseloads of speech-language pathologists are continuing to grow, and there is an ever-increasing demand for services, especially in the area of language disorders. Although pull-out speech-language intervention is typically still offered, many services are delivered in an increasingly collaborative framework, with teachers and speech-language pathologists co-operating and sharing resources. In areas where shortages of qualified speech-language pathologists are particularly acute, schools will need to consider alternative methods of providing services to students with communication disorders. Some methods that might compensate for shortages in specialty personnel include the hiring of speech-language pathology assistants, flexible scheduling, cross-disciplinary service provision, peer tutoring, and increased use of natural supports.
Canada, another alternative method of service delivery being explored to address service delivery in remote areas with large caseloads or shortages of speech-language pathologists is treatment provided via telehealth (e.g., Jessiman, 2003; Kully, 2000).

The social trends that are shaping our society may have a great effect on the provision of speech-language therapy services in schools. These trends include an increasingly multicultural and multilingual society and the changing role of the school in the community.

Another area of change is the expected continuation of technological advances. Some of the improved technology has already been described here; however, it is virtually impossible to keep up with the rapid improvements in this area—improvements that will lead to increased opportunities for students with severe communication disorders to interact with family members, teachers, and peers, perhaps allowing them to participate in activities that would have seemed impossible 10 years ago.

**SUMMARY**

- Most people take the ability to communicate for granted.
- It is estimated that 5 to 10 percent of school-age children have some type of speech or language impairment.
- Communication problems result in difficulties in even simple interactions.
- Speech and language are interrelated skills that we use for communication.
- Speech disorders include impairments of fluency, voice, articulation, and phonology. Articulation and phonological disorders are the most common speech disorders.
- Voice disorders are related to volume, quality, or pitch.
- Language disorders are impairments of comprehension (receptive language) or use of language (expressive language); disorders may be related to the form (phonology, morphology, syntax), content (semantics), or use (pragmatics) of language.
- Language difficulties are integrally linked to a variety of disorders (e.g., autism spectrum disorders, learning disabilities, emotional and behavioural disorders).
- Building a positive classroom environment is an important accommodation for students with speech and language problems.
- Teachers can make numerous accommodations and modifications for students with language disorders.
- Some language difficulties may be due to the cultural or linguistic diversity of students.
- Technology, through augmentative and alternative communication, can greatly facilitate the language use of persons with speech and language problems.

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American Speech-Language-Hearing Association
www.asha.org
This site provides parents and educators with valuable information and resources on communication disorders.

Canadian Association of Speech-Language Pathologists and Audiologists
www.caslpa.ca
This site gives the public information on the practice of speech-language pathology and audiology in Canada, and provides useful links to other websites (e.g., provincial speech-language and hearing associations).

Ontario Association for Families of Children with Communication Disorders (OAFCCD)
www.oafccd.com
The association’s website has a wonderful array of resources, related links, personal stories, supports, and information on children with communication disorders as well as on children’s activities.

Ontario Association for Families of Children with Communication Disorders: Lanark, Leeds, & Grenville Chapter
www.oafccd.com/lanark
This is a particularly effective website with resources, information, chat rooms, inspirational poems, stories, quotes, excellent related links for education and families, and superb kid links. The site has won numerous awards.

Net Connections for Communication Disorders and Sciences
www.mnsu.edu/comdis/kuster2/welcome.html
This website has an excellent list of internet sources related to communication disorders. A teacher will be able to find information and strategies on all communication disorders, from stuttering or fluency disorders to ESL or voice disorders.