Chapter 12 - Speech Language Impairments (Communication Disorders)

Definition under IDEA of Speech and Language Impairments

Under IDEA, a Speech or Language Impairment is defined as:
*a communication disorder, such as stuttering, impaired articulation, language impairment, or a voice impairment that adversely affects a student's educational performance.*

Overview of Speech and Language Impairments

Students with communication disorders have deficits in their ability to exchange information with others. A communication disorder may occur in the realm of language, speech and/or hearing. Language difficulties include spoken language, reading and/or writing difficulties. Speech encompasses such areas as articulation and phonology (the ability to speak clearly and be intelligible), fluency (stuttering), and voice. Hearing difficulties may also encompass speech problems (e.g., articulation or voice) and/or language problems. Hearing impairments include deafness and hearing loss, which can result from a conductive loss, a sensorineural loss, a mixed loss, or a central hearing loss.

Communication disorders may result from many different conditions. For example, language-based learning disabilities are the result of a difference in brain structure present at birth. This particular difficulty may be genetically based. Other communication disorders stem from oral-motor difficulties (e.g., an apraxia or dysarthria of speech), aphasias (difficulties resulting from a stroke which may involve motor, speech and/or language problems), traumatic brain injuries, and stuttering, which is now believed to be a neurological deficit. The most common conditions that affect students' communication include language-based learning disabilities, attention deficit disorder, attention deficit hyperactive disorder, cerebral palsy, mental disabilities, cleft lip or palate, and autism spectrum disorders.

The functions, skills, and abilities of voice, speech, and language are related. Some dictionaries and textbooks use the terms almost interchangeably. But for scientists and medical professionals, it is important to distinguish among them.
Voice

Voice (or vocalization) is the sound produced by humans and other vertebrates using the lungs and the vocal folds in the larynx, or voice box. Voice is not always produced as speech, however. Infants babble and coo; animals bark, moo, whinny, growl, and meow; and adult humans laugh, sing, and cry. Voice is generated by airflow from the lungs as the vocal folds are brought close together. When air is pushed past the vocal folds with sufficient pressure, the vocal folds vibrate. If the vocal folds in the larynx did not vibrate normally, speech could only be produced as a whisper. Your voice is as unique as your fingerprint. It helps define your personality, mood, and health.

Approximately 7.5 million people in the United States have trouble using their voices. Disorders of the voice involve problems with pitch, loudness, and quality. Pitch is the highness or lowness of a sound based on the frequency of the sound waves. Loudness is the perceived volume (or amplitude) of the sound, while quality refers to the character or distinctive attributes of a sound. Many people who have normal speaking skills have great difficulty communicating when their vocal apparatus fails. This can occur if the nerves controlling the larynx are impaired because of an accident, a surgical procedure, a viral infection, or cancer.

Speech

Humans express thoughts, feelings, and ideas orally to one another through a series of complex movements that alter and mold the basic tone created by voice into specific, decodable sounds. Speech is produced by precisely coordinated muscle actions in the head, neck, chest, and abdomen. Speech development is a gradual process that requires years of practice. During this process, a student learns how to regulate these muscles to produce understandable speech.

However, by the first grade, roughly 5 percent of students have noticeable speech disorders; the majority of these speech disorders have no known cause. One category of speech disorder is fluency disorder, or stuttering, which is characterized by a disruption in the flow of speech. It includes repetitions of speech sounds, hesitations before and during speaking, and the prolonged emphasis of speech sounds. More than 15 million individuals in the world stutter, most of whom began stuttering at a very early age. The majority of speech sound disorders in the preschool years occur in students who are developing normally in all other areas. Speech disorders also may occur in students who have developmental disabilities.

Language

Language is the expression of human communication through which knowledge, belief, and behavior can be experienced, explained, and shared. This sharing is based on systematic, conventionally used signs, sounds, gestures, or marks that convey understood meanings within a group or community. Recent research identifies "windows of opportunity" for acquiring language--written, spoken, or signed--that exist within the first few years of life.
Prevalence of Speech and Language Impairments

According to the U.S. Department of Education, Speech and Language Impairments represent approximately 21.0 percent of all students having a classification in special education. This estimate does not include students who have speech/language problems secondary to other conditions such as intellectual disability, traumatic brain injury, autism, cerebral palsy and deafness (Friend).

Characteristics of Students with Speech and Language Impairments

A student with a communication problem may present many different symptoms. These may include difficulty following directions, attending to a conversation, pronouncing words, perceiving what was said, expressing oneself, or being understood because of a stutter or a hoarse voice. A student's communication is considered delayed when the student is noticeably behind his or her peers in the acquisition of speech and/or language skills. Sometimes a student will have greater receptive (understanding) than expressive (speaking) language skills, but this is not always the case.

Speech disorders refer to difficulties producing speech sounds or problems with voice quality. They might be characterized by an interruption in the flow or rhythm of speech, such as stuttering, which is called dysfluency. Speech disorders may be problems with the way sounds are formed, called articulation or phonological disorders, or they may be difficulties with the pitch, volume or quality of the voice. There may be a combination of several problems. People with speech disorders have trouble using some speech sounds, which can also be a symptom of a delay. They may say "see" when they mean "ski" or they may have trouble using other sounds like "l" or "r." Listeners may have trouble understanding what someone with a speech disorder is trying to say. People with voice disorders may have trouble with the way their voices sound.

A language disorder is an impairment in the ability to understand and/or use words in context, both verbally and nonverbally. Some characteristics of language disorders include improper use of words and their meanings, inability to express ideas, inappropriate grammatical patterns, reduced vocabulary and inability to follow directions. One or a combination of these characteristics may occur in students who are affected by language learning disabilities or developmental language delay. Students may hear or see a word but not be able to understand its meaning. They may have trouble getting others to understand what they are trying to communicate.

Problems with language may involve difficulty expressing ideas coherently, learning new vocabulary, understanding questions, following directions, recalling information, understanding and remembering something that has just been said, reading at a satisfactory pace, comprehending spoken or read material, learning the alphabet, identifying sounds that correspond to letters, perceiving the correct order of letters in words, and possibly, spelling. Difficulties with speech may include being unintelligible due to a motor problem or due to poor
learning. Sounding hoarse, breathy or harsh may be due to a voice problem. Stuttering also affects speech intelligibility because the student's flow of speech is interrupted.

**Procedures and Assessment Measures used to diagnose Speech and Language Impairments**

Speech/language impairments are determined through the demonstration of impairments in the areas of language, articulation, voice, and fluency:

Language Impairment – A significant deficiency which is not consistent with the student’s chronological age in one or more of the following areas:

- a deficiency in receptive language skills to gain information
- a deficiency in expressive language skills to communicate information
- a deficiency in processing (auditory perception) skills to organize information.

Articulation Impairment – A significant deficiency in ability to produce sounds in conversational speech which is not consistent with chronological age.

Voice Impairment – An excess or significant deficiency in pitch, intensity, or quality resulting from pathological conditions or inappropriate use of the vocal mechanism.

Fluency Impairment – Abnormal interruption in the flow of speech by repetitions or prolongations of a sound, syllable, or by avoidance and struggle behaviors.

If a student is suspected of having a speech and language impairment, the following procedures and assessment measures should be used:

For a language impairment - a significant deficiency in language shall be determined by:

(1) a minimum of two measures shall be used, including criterion and/or norm-referenced instruments, functional communication analyses, and language samples. At least one standardized comprehensive measure of language ability shall be included in the evaluation process.

Evaluation of language abilities shall include the following:

(a) hearing screening;
(b) reception: vocabulary, syntax, morphology;
(c) expression: mean length of utterance, syntax, semantics, pragmatics, morphology;
(d) auditory perception: selective attention, discrimination, memory, sequencing, association, and integration; and
(e) documentation and assessment of how a language impairment adversely affects educational performance in the classroom or learning environment.
Articulation Impairment – a significant deficiency in articulation shall be determined by Evaluation of articulation abilities shall include the following:

(a) appropriate formal/informal instrument(s)
(b) stimulability probes;
(c) oral peripheral examination;
(d) analysis of phoneme production in conversational speech; and
(e) documentation and assessment of how an articulation impairment adversely affects educational performance in the general education classroom or learning environment.

Voice impairment – evaluation of vocal characteristics shall include the following:

1. hearing screening;
2. examination by an otolaryngologist;
3. oral peripheral examination; and
4. documentation and assessment of how a voice impairment adversely affects educational performance in the general education classroom or learning environment.

Fluency impairment – evaluation of fluency shall include the following:

1. hearing screening;
2. information obtained from parent/guardians, students, and teacher(s) regarding non-fluent behaviors/attitudes across communication situations;
3. oral peripheral examination; and
4. documentation and assessment of how a fluency impairment adversely affects educational performance in the general education classroom or learning environment.

Besides these assessment measures, the following should be considered:

If a student is suspected of having a speech and language impairment under the definition set forth in IDEA, the following assessment measures should also be considered:

- An observation by a team member other than the student’s general education teacher of the student’s academic performance in a general classroom setting; or in the case of a student less than school age or out of school, an observation by a team member conducted in an age-appropriate environment
- A developmental history, if needed
- An assessment of intellectual ability
- Other assessments of the characteristics of speech and language impairments if the student exhibits impairments in any one or more of the following areas: cognition, fine motor, perceptual motor, communication, social or emotional, and perception or memory. These assessments shall be completed by specialists knowledgeable in the specific characteristics being assessed
- A review of cumulative records, previous individualized education programs or individualized family service plans and teacher collected work samples
If deemed necessary, a medical statement or health assessment statement indicating whether there are any physical factors that may be affecting the student’s educational performance;
Assessments to determine the impact of the suspected disability

On the student’s educational performance when the student is at the age of eligibility for kindergarten through age 21
On the student’s developmental progress when the student is age three through the age of eligibility for kindergarten; Additional evaluations or assessments necessary to identify the student’s educational needs.

**Eligibility for a Diagnosis of Speech and Language Impairment**

Four types of speech or language impairments are generally recognized:

(1) Fluency disorder means the intrusion or repetition of sounds, syllables, and words; prolongation of sounds; avoidance of words; silent blocks; or inappropriate inhalation, exhalation, or phonation patterns. These patterns may also be accompanied by facial and body movements associated with the effort to speak

(2) Voice disorder means the absence of voice or presence of abnormal quality, pitch, resonance, loudness, or duration

(3) Articulation disorder means the absence of or incorrect production of speech sounds or phonological processes that are developmentally appropriate (e.g. lisp, difficulty articulating certain sounds, such as l or r)

(4) Language disorder means a breakdown in communication as characterized by problems in expressing needs, ideas, or information that may be accompanied by problems in understanding.

There are two ways in which many States identify students with one of these four types of speech and language impairments. We will give both options.

**Determination of Eligibility--Method 1**

In order to identify and be determined as eligible for special education services as a student with a Speech and Language Impairment, the IEP Committee shall document that the following standards have been met. Based on the results of the assessment:
1. **Determine that the student meets one or more of the following criteria (a-d):**

   **a. For a voice impairment, determine whether**
   
   - the student demonstrates chronic vocal characteristics that deviate in at least one of the areas of pitch, quality, intensity or resonance; **AND**
   - the student’s voice disorder impairs communication or intelligibility; **AND**
   - the student’s voice disorder is rated as moderate to severe on a voice assessment scale.

   **b. For a fluency impairment, determine whether**
   
   - the student demonstrates an interruption in the rhythm or rate of speech which is characterized by hesitations, repetitions or prolongations of sounds, syllables, words or phrases; **AND**
   - the student’s fluency disorder interferes with communication and calls attention to itself across two or more settings; **AND**
   - the student demonstrates moderate to severe vocal dysfluencies or the student evidences associated secondary behaviors such as struggling or avoidance, as measured by a standardized measure.

   **c. For a phonological or articulation impairment, determine whether**
   
   - the student’s phonology or articulation is rated significantly discrepant as measured by a standardized test; **AND**
   - the disorder is substantiated by a language sample or other evaluation(s).

   **d. For a syntax, morphology, pragmatic, or semantic impairment, determine whether**
   
   - the student’s language in the area of syntax, morphology, pragmatics, or semantics is significantly discrepant as measured by standardized test(s); **AND**
   - the disorder is substantiated by a language sample or other evaluation(s); **AND**
   - the disorder is not the result of another disability.

2. **Determine whether the student’s disability has an adverse impact on educational performance**

   The student’s disability must have an adverse impact on educational performance when the student is at the age of eligibility for kindergarten through age 21, or has an adverse impact on the student’s developmental progress when the student is age three through kindergarten; and

   2. **Determine that the eligibility is not due to a lack of instruction in reading, math or due to limited English proficiency.**
   3. **Determine whether the student needs special education services.**
Determination of Eligibility--Method 2

A speech or language impairment shall be demonstrated by significant deficits in listening comprehension or oral expression. The IEP Committee shall obtain an opinion from a licensed speech-language pathologist as to the existence of a speech or language impairment and its effect on the student's ability to function. The determination of a speech or language impairment shall be based on the following criteria:

1. **Determine whether a deficit exists in listening comprehension.**
   A significant deficit in listening comprehension exists when a student demonstrates a significant deficit from the test mean on one or more measures of auditory processing or comprehension of connected speech. Auditory processing or comprehension include:
   - Semantics
   - Syntax
   - Phonology
   - Recalling information
   - Following directions
   - Pragmatics

2. **Determine whether a deficit exists in oral expression.**
   For purposes of determination of a speech and language impairment, a significant deficit in oral expression exists when a student demonstrates one or more of the following conditions:
   
   (i) Voice. A significant deficit in voice exists when both of the following are present:
   - Documentation by an otolaryngologist that treatment is indicated for a vocal pathology or speech related medical condition
   - Abnormal vocal characteristics in pitch, quality, nasality, volume or breath support, which persist for at least one month.

   (ii) Fluency. A significant deficit in fluency exists when the student exhibits one or more of the following behaviors:
   - Part word repetitions or sound prolongations occur on at least 5% of the words spoken in two or more speech samples, or
   - Sound or silent prolongations exceed one second in two or more speech samples, or
   - Secondary symptoms or signs of tension or struggle during speech which are so severe as to interfere with the flow of communication.

   (iii) Articulation. A significant deficit in articulation attributed to an organic or functional disorder exists when a student is unable to articulate two or more of the unrelated phonemes in connected speech, and it is not attributed to dialect or second language difficulties.
(iv) Oral Discourse. A significant deficit exists when a student demonstrates a deficit of at least 2 standard deviations from the test mean on one or more measures of oral discourse. Oral discourse includes:

- Syntax
- Semantics
- Phonology
- Pragmatics.

3. **Determine whether the student’s disability has an adverse impact on educational performance**

   The student’s disability must have an adverse impact on educational performance when the student is at the age of eligibility for kindergarten through age 21, or has an adverse impact on the student’s developmental progress when the student is age three through kindergarten; and

4. **Determine that the eligibility is not due to a lack of instruction in reading, math or due to limited English proficiency.**

5. **Determine whether the student needs special education services.**

**Final Thoughts**

It is important to note that The IEP Committee may not identify a student who exhibits any of the following as having a speech or language impairment:

- Mild, transitory or developmentally appropriate speech or language difficulties that students experience at various times and to various degrees.
- Speech or language performance that is consistent with developmental levels as documented by formal and informal assessment data unless the student requires speech or language services in order to benefit from his or her educational programs in school, home, and community environments.
- Speech or language difficulties resulting from dialectical differences or from learning English as a second language, unless the student has a language impairment in his or her native language.
- Difficulties with auditory processing without a concomitant documented oral speech or language impairment.
- A tongue thrust which exists in the absence of a concomitant impairment in speech sound production.
- Elective or selective mutism or school phobia without a documented oral speech or language impairment.
Finally, a strong relationship exists between communication and academic achievement. Language and communication proficiency, along with academic success, depend on whether students can match their communications to the learning-teaching style of the classroom. Students with communication disorders are capable of high academic success if they learn the classroom's social, language, and learning patterns. Teachers and speech-language pathologists should focus their attention on classroom interactions and the language and communications used within the school in order to help students learn to communicate in these environments. Explicit language and communication planning as well as nondeliberate language use (e.g., unconscious choice of language) are important features of the school and class environments that provide opportunities for teaching and learning.