Practice Parameters for the Assessment and Treatment of Children and Adolescents With Language and Learning Disorders

ABSTRACT

These parameters describe the aims and approach to diagnosis, treatment, and monitoring of children and adolescents with language and learning disorders (LLDs). LLDs are among the most common developmental disorders the clinician is likely to encounter. About 50% of children with an LLD also have a comorbid Axis I psychiatric disorder. The diagnosis of an LLD requires a discrepancy, based on age and intelligence, between potential and achievement. The clinician collaborates with parents and school personnel to clarify the diagnosis, implement appropriate treatment and remediation, and monitor progress. The clinician is instrumental in identifying and treating comorbid conditions, including determining the appropriateness of medication. Long-term prognosis depends on the type and severity of the LLD, the availability of remediation, and the presence of a supportive family and school environment. *J. Am. Acad. Child Adolesc. Psychiatry,* 1998, 37(10 Supplement):46S–62S. **Key Words:** language, learning, disorders, disabilities, diagnosis, treatment, children, adolescents, practice parameters, guidelines.

Language and learning disorders (LLDs) are among the most common of the psychiatric and developmental disorders that a clinician is likely to encounter (Cantwell and Baker, 1987; Forness and Kavale, 1989). Many children who are referred for evaluation because of behavioral difficulties at school or conflicts around completing homework have unrecognized language or learning difficulties (Gresham, 1988; Kauffman, 1997; Little, 1993; Pearl and Bryan, 1994). Indeed, some studies have shown that as many as one third of children referred to mental health centers have undiagnosed speech and language problems (Cohen et al., 1993).

Children with documented LLDs may be referred for emotional or behavioral problems associated or comorbid with those disorders. Performance anxiety, poor peer relationships, family conflicts, and decreased self-esteem are common concomitants of LLDs, even if criteria for an Axis I disorder are not met (Falik, 1995). For at least some of these children, parents and teachers may not recognize the importance of the LLDs in the emotional or behavioral problems. These problems are more likely to emerge as children mature and academic tasks become more complex and peer interactions become more important.

The clinician can be pivotal in helping the child and family address the social, emotional, behavioral, and family problems that are common among children with LLDs. Clinicians should be familiar with the Individuals With Disabilities Education Act (IDEA) (Public Law 94-142) (U.S. Department of Education, 1995; Yell and Shriner, 1997), which defines the level of disability necessary for a child or adolescent to be eligible for special education services in public schools and mandates the development and implementation of an Individual Education Plan (IEP) (Council of Administrators of Special Education, 1992; Yell and Shriner, 1997; Zirkel, 1995).

LITERATURE REVIEW

Eight books and two special issues of a learning disabilities journal were evaluated in depth. Computerized searches were conducted using *Medline*, *PsychInfo*, and *ERIC* for the period 1980 through 1995 using the key words *aphasia*, *language disorders*, *speech disorders*, *communication disorders*, *academic disorders*, *learning disabilities*, and *learning disorders*. These and secondary literature citations yielded more than 1,000 pertinent abstracts. Of these, 225 abstracts were selected and

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82 articles from these and other secondary sources were reviewed. In addition, following feedback from expert reviewers, new articles and recent seminal contributions were selected for examination and inclusion as appropriate.

Definitions

There has been controversy about the inclusion of LLDs in classifications of mental disorders, such as *DSM-IV* (American Psychiatric Association, 1994). LLDs do fit the definition of mental disorder in *DSM-IV*: "a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that is associated with present distress . . . or disability . . . or with a significantly increased risk of suffering . . . ." (p xxi).

Disorders of language and learning are similar in a variety of ways, including the essential and associated features, risk factors, prevalence in epidemiological samples, and possible etiological factors. Similarities also are found in the assessment techniques that are needed, outcomes, and natural history. The central clinical feature of a language or learning disorder is the lack of normal development of a particular developmental skill, either cognitive or linguistic. The nature of the skill differs with each disorder. Developmental expressive language disorder, for example, is an impairment in the acquisition of language production ability. Developmental reading disorder, on the other hand, is a significant impairment in reading acquisition that is not due to a physical, neurological, or environmental cause. Moreover, LLDs range in type and severity from subtle to marked impairment. Some LLDs are easily observable on clinical assessment, while others are diagnosable only through standardized testing (Hynd and Semrud-Clikeman, 1989; Obrzut and Boliek, 1991; Peterson and Marquardt, 1990).

The definition of language disorders, and particularly learning disorders, is still a controversial topic that has been discussed by several authors (Beitchman and Young, 1997; Cantwell and Baker, 1987, 1991; Hammill, 1990; Kavale et al., 1991; Kavale and Forness, 1995; Shaw et al., 1995). Among the most important definitions is that included in the current IDEA, which stresses that learning disabilities are processing disorders that result in a significant discrepancy between potential and acquisition of various academic or language skills. The extent of discrepancy in an individual child, and the point at which a clinical cutoff is reached, is open to considerable interpretation (Algozzine et al., 1982; Clarizio and Phillips, 1989; Evans, 1990; Hallahan and Kauffman, 1997; Kavale et al., 1994; Shaywitz et al., 1992a,b; Wong, 1989). It also should be noted that each state is free to interpret clinical cutoff points for discrepancy and for processing disorders, such that considerable variability exists from state to state (Chalfant, 1987; Coutinho, 1995; Frankenberger and Fronzaglio, 1991; Mercer et al., 1990). In addition, the emphasis on processing is unfortunate, since measurement of so-called "processing" disorders is notoriously difficult (Felton and Wood, 1989; Kavale and Forness, 1995; Kirby et al., 1996; Swanson, 1987, 1988).

The *DSM-IV* requires delays in expressive or receptive language, not due to sensory or motor deficit or environmental deprivation, in excess of that based on scores of nonverbal intelligence. This definition of language disorders is sometimes referred to as specific language impairment. However, there are few empirical data to support this definition, and Bishop (1994) concludes that there may be no fundamental difference between children with language impairments who have a large discrepancy between IQ and verbal functioning and those who do not. Since currently there is insufficient empirical information to demonstrate where the boundaries defining language disorders should be drawn, it seems preferable to consider all children who show evidence of age-discrepant language skills as in need of assessment and possible intervention. Future studies should clarify the distinctions and relative merits of the different definitions of language impairment.

The *DSM-IV* definition of learning disorders also requires an IQ–achievement discrepancy. Effectively this defines two groups of poor readers, those who read poorly in comparison to their IQ and those who read poorly in comparison to their age, irrespective of their IQ. Rutter and Yule (1975) have shown that reading achievement falls on a bimodal continuum. The majority of readers fall along a bell-shaped normal distribution, but a second distribution, appearing as a "hump" at the bottom of the normal distribution, reflects the excess of children who read more poorly than would be expected on the basis of their IQ scores, i.e., the so-called IQ–achievement discrepancy definition group.

Research during the past 10 years has challenged the IQ–achievement discrepancy definition of learning disabilities (see Fletcher et al., 1994; Shaywitz, 1996; Shaywitz et al., 1992a, 1996; and Stanovich, 1991, for further discussion). In brief, research has failed to demonstrate valid differences between groups of children defined with or without an IQ–achievement discrepancy–based definition. Instead, accumulated evidence from numerous studies indicates that in most cases, children with a reading disability have a deficit in phonological-processing skills. These skills are necessary for detecting and manipulating individual speech sounds or phonemes (the smallest sound segment of language that can change the meaning of a word) and are thought to be the main source of impaired word recognition and difficulty decoding or "sounding out" unfamiliar words (Love and Webb, 1992; Shaywitz, 1996; Torgesen et al., 1994). According to this viewpoint, reading disability represents the lower tail of the normal distribution of reading ability, and the same processes that are involved in reading also are involved in reading disability.

IQ–achievement discrepancy definitions tend to overidentify bright children as reading-disabled and underidentify low achievers as not reading-disabled. IQ discrepancy definitions also have been found to identify children with more specific language deficits compared with age discrepancy definitions, though this accounts for little variance on neuropsychological measures (Pennington et al., 1992).

Despite criticisms of the discrepancy-based definitions, a consensus on how learning disabilities should be defined does not yet exist. This lack of consensus is one of the most important issues facing educators, clinicians, parents, and children, because the definition used determines which children, with which level of reading ability, qualify as reading-disabled and thus are eligible for extra resources. Current discrepancy-based definitions exclude large groups of low-achieving children (e.g., children with borderline IQ scores), who often are more impaired than other children who qualify as reading-impaired. Clinicians must be sensitive to these issues to ensure that low-achieving children are not denied assistance because of artificial and perhaps outmoded definitions of LLDs.

Recent research in reading and academic achievement supports domain-specific assessment and remediation for LLDs. The domain-specific approach has implications for early identification and early remediation, in contrast to IQ–achievement discrepancy–based approaches in which a child must fall behind academically before becoming eligible for diagnosis and remediation. The domain-based approach also focuses on cognitive abilities, such as phonological awareness, listening comprehension, and word retrieval, allowing remediation efforts to target directly the areas of deficit.

Etiology

Exact etiologies are unknown for the LLDs, but family, genetic, cognitive, and neuroanatomical factors have been suggested (Hallahan et al., 1996; Love and Webb, 1992; Murdoch, 1991; Rourke, 1989; Swanson, 1987, 1988; Zemlin, 1988). Environmental factors have long been recognized for their role in the development of language and learning. For example, the best single predictor of growth in children's vocabulary during the early stages of language learning is the number of words heard per unit of time from their mothers (Huttenlocher et al., 1991). Positive benefits of reading to children on their vocabulary knowledge and knowledge of the world have been documented, confirming the widespread conclusion that reading to children is beneficial. Nonetheless, only a weak relationship is evident between reading to children and their success at learning to read (Brady and Moats, 1997). Similarly, children with language impairments, compared with controls, have been described as needing a higher threshold of exposure to novel words (i.e., number of times they hear a word) for successful acquisition (Rice et al., 1994). This latter view is consonant with recent research that has questioned the etiological role of environmental factors in the development of language disorders (Bishop et al., 1995; Tomblin and Buckwalter, 1994).

A second line of research suggests that children with language impairments are unable to process rapid, transient stimuli (Tallal et al., 1985), suggesting that auditory temporal processing abilities represent a biological risk marker for language impairment. Deficits in rapid (tens of milliseconds) temporal processing of auditory information may underlie problems in the reception and production of speech information (Fitch et al., 1997). The difficulty in processing quick tonal changes may be responsible for the deficient phonemic discrimination and low phonological awareness associated with poor reading skills and dyslexia (Tallal et al., 1985). Reduced capacity to hold transient mental representations (Johnson, 1994) or a specific deficit in the phonological loop component of working memory (Gathercole and Baddeley, 1990) have been offered as alternative theories.

The strongest evidence to date supports (1) the heritability of language disorders (Hurst et al., 1990; Tomblin and Buckwalter, 1994) and reading disorders (Pennington, 1995) and (2) the role of deficits in phonological awareness as the basic component of reading disability. A recent study of twins with language impairment showed higher concordance rates among monozygotic than dizygotic twins (Bishop et al., 1995). In particular, disorders of expressive language, with and without disorders of articulation, showed strong evidence of heritability. Evidence of the heritability of pure articulation disorders also is found in the studies of Lewis and Thompson (Lewis, 1992; Lewis and Thompson, 1992; Thompson, 1992).

Evidence from family and twin studies also suggests that reading disabilities are familial and heritable and that they are genetically heterogeneous (Pennington, 1995). Across family studies, the familial risk to first-degree relatives has been found to be between 35% and 45%, compared with the population risk of 3% to 10%. The precise mode of transmission is not known, but there is evidence for a single major locus (Pennington et al., 1991), a polygenic or a multifactorial mode of transmission (Pennington, 1995), and a quantitative trait locus (Cardon et al., 1994).

Available data on the genetic transmission of reading skills and disabilities do not clarify whether the same genes are involved in the transmission of reading disabilities and of normal reading variation. Unlike a major gene effect (or a disease gene), a quantitative trait locus is neither necessary nor sufficient to produce the phenotype; the transmitted risk for reading disabilities may be categorical or continuous. A small number of quantitative trait loci may underlie the transmission of both reading disabilities and normal variations in reading skill (Pennington, 1995). More recently,

Grigorenko et al. (1997) have shown linkage between chromosome 6 and phonological awareness (the linguistic precursor to decoding single words), and chromosome 15 and single word reading. These results replicate previous reports of a genetic association between reading disabilities and chromosomes 6 and 15.

Since LLDs are heterogeneous, there is likely to be more than one explanatory model. Furthermore, a genetic and biological basis for a deficit does not mean that it cannot be remedied but does suggest that a theoretically grounded instruction is necessary to remedy or accommodate the deficit.

Onset

All developmental LLDs have onset in early childhood, though reading problems are frequently discovered only after a child enters school. The acquired type of LLDs can have onset at any time. Although there is considerable variability in clinical presentation, a child with an LLD may resemble a normal though younger child. Thus, a child aged 9 years with a reading disorder may exhibit the reading skills of a normal child aged 6 years. Likewise, a child aged 10 years with a language disorder may exhibit the language production skills of a normal child aged 7 years.

EPIDEMIOLOGY

The prevalence of LLDs in the general population varies depending on the samples, diagnostic criteria, and instruments and assessment procedures used (Bernstein and Tiegerman, 1985; Hallahan and Kauffman, 1997; Hallahan et al., 1996; Kavale and Forness, 1995; Murdoch, 1991; Myers and Hammill, 1992). As a group, LLDs comprise a very common set of problems, with estimates that as many as 10% to 20% of children and adolescents have a language and/or learning disorder (Beitchman et al., 1986b).

LLDs make up the two most common disability categories in the public schools, and they account for 2.3% (language disorders) and 5.3% (learning disabilities) of the 10.3% of school-age children in special education (U.S. Department of Education, 1995). These figures refer only to children currently receiving school services for the disorders, and there is evidence that the numbers would be higher if sufficient services were available (Shaywitz et al., 1992a).

From 1% to 13% of the population have either a developmental expressive or receptive language disorder (Cantwell and Baker, 1991; Myers and Hammill, 1992). Some 3% to 5% of children are specified in *DSM-IV* as having a developmental expressive language disorder, the majority of which are the developmental type with a childhood onset. *DSM-IV* suggests that a mixed expressive language disorder may be present in 3% of school-age children. Although both disorders are reported to be more common in boys, these reports have been questioned and the findings on which they are based may represent a referral bias (Beitchman and Young, 1997).

In all epidemiological studies, cultural features may play a role in estimated prevalence and manifestation of disorders. Thus, when intelligence, language, or academic achievement tests are used, they must be used by an examiner familiar with how a particular ethnic or cultural background may influence performance on a test. Tests that are standardized must include in the standardization sample individuals with the important cultural factors that may influence normative data.

Prevalence rates for reading disorder are estimated at 4% of school-age children, with a range of 2% to 10% (Kavale and Forness, 1995). The prevalence rate of mathematics disorder has not been as well studied; a range of 1% to 6% of grade school–age children is quoted in several studies. Girls may have higher rates of specific disorders of mathematics than boys. Developmental disorder of written expression is thought to occur in from 2% to 8% of grade school–age children, with three boys affected for every one girl.

Disorders of reading, mathematics, and written expression commonly occur together, especially reading disorder and disorder of written expression. Reading disorder is often associated with language and phonological disorder. The prevalence rates of phonological disorder in the general population range from 1% to more than 20%, depending on the diagnostic criteria used.

Children with early language disorder, even if they develop normal language competence later in life, are at risk for learning disorders (Majsterek and Ellenwood, 1995; Torgesen et al., 1994; Wallach and Butler, 1994). Many children with LLDs seem to outgrow their problems. However, many never completely develop a normal skill level in the impaired area. Even in those who do, recovery is often complicated by secondary difficulties such as anxiety, low self-esteem, poor peer relationships, and other problems of daily living.

Indeed, clinical and epidemiological samples suggest that approximately 50% of children with LLDs have a comorbid Axis I *DSM-IV* psychiatric disorder (Beitchman et al., 1986a; Cantwell and Baker, 1991; Maag and Reid, 1994; Stanford and Hynd, 1994; Torgesen, 1990). Moreover, data suggest that the presence of both a language and a learning disorder together raises the likelihood of a clinically significant comorbid Axis I psychiatric disorder. Strong associations are found between LLDs and attention-deficit/hyperactivity disorder (ADHD) (Beitchman et al., 1986a; Hinshaw, 1992). A prior history of speech/language impairment is associated with significantly increased rates of anxiety among girls (Beitchman et al., 1996a). LLDs predispose a child to the later development of an Axis I psychiatric disorder (Cantwell and Baker, 1991). Early presence of a language or learning disorder has been found to predict development of Axis I psychiatric disorders over a 4- to 5-year period in children

who did not have Axis I psychiatric disorders when initially evaluated. In children who have Axis I psychiatric disorders, the presence of a language and/or learning disorder also predicts the continued presence, rather than remission, of the psychiatric disorder.

CLINICAL PRESENTATION

LLDs often go unrecognized (Cohen et al., 1993). Children presenting with school refusal or agoraphobia, for instance, may be so terrified of the potential for humiliation by classmates (e.g., for expressive language difficulties) that they refuse to go to school, or develop somatic symptoms such as headaches and stomachaches, especially on the school days they would be expected to speak in front of the class. Undiagnosed and untreated, these problems increase until the child dislikes school, refuses to do homework, and perhaps develops oppositional defiant symptoms. The fear of humiliation may lead other children to act out in the school setting. Some children may fall so far behind academically that they defend their self-esteem at all costs, becoming verbally abusive and physically provocative to avoid the possibility of exposure and humiliation. Successful intervention with these children requires the diagnosis and treatment of the learning and language problems.

The *DSM-IV* specifies five types of communication disorders: expressive language disorder, mixed receptive-expressive language disorder, phonological disorder, communication disorder not otherwise specified, and stuttering. Stuttering is not discussed in these parameters because it is fundamentally different from the other communication disorders. The *DSM-IV* also specifies four types of learning disorders: reading disorder, disorder of written expression, mathematics disorder, and learning disorder not otherwise specified. The diagnostic criteria for each of these disorders are detailed in *DSM-IV*. Table 1 presents a summary of selected intelligence tests used in diagnosing LLDs.

The diagnostic criteria for expressive language disorder depend on scores obtained from standardized, individually administered measures of expressive language development that are substantially below those obtained from standardized measures of both nonverbal intellectual capacity and receptive language development. Symptoms may include a markedly limited vocabulary, errors in tense, or difficulty recalling words or producing sentences with developmentally appropriate length or complexity. As with learning disorders, the difficulties must interfere with academic or occupational achievement or with social communication. Mixed receptive-expressive language disorder or pervasive developmental disorder must be ruled out. If mental retardation, a speech-motor or sensory deficit, or environmental deprivation is present, the language difficulties must be in excess of those usually associated with these problems.

The diagnosis of mixed receptive-expressive language disorder depends on scores obtained from a battery of standardized individually administered measures of both receptive and expressive language development that are substantially below those obtained from standardized measures of nonverbal intellectual capacity. Symptoms include those for expressive language disorder, as well as difficulty understanding words, sentences, or age-appropriate extended discourse.

The diagnosis of phonological disorder depends on failure to use developmentally expected speech sounds that are appropriate for age and dialect, such as errors in sound production, use, representation, or organization. Errors may include substitution of one sound for another, or omissions of sounds, such as final consonants. The diagnosis also must include interference with school or occupational performance or with social communication and be in excess of other disabilities, if they are present.

TABLE 1
Summary of Selected Intelligence Tests Used in the Diagnosis of Language and Learning Disorders

Measure (Source)	Comment
Wechsler Intelligence Scale for Children (WISC-III) (Wechsler, 1991)	This is considered the standard test of intelligence and is one of the best available. It consists of 13 subtests, grouped into Verbal and Performance scales. This test has the advantage of having comparable versions for preschool children, school-age children, and adolescents aged 16 years and older. Information on subjects' relative strengths and weaknesses can be used in planning treatment.
Stanford-Binet Intelligence Scale, 4th edition (Thorndike et al., 1986)	This consists of 15 subtests grouped into Verbal Comprehension, Nonverbal Reasoning/Visualization, and Memory Factors. Considered one of the best intelligence tests available. Caution is advised in its use because of an uneven range of standard scores. As with the WISC-III, profile analysis of areas of strength and weakness is a useful feature.
Leiter International Performance Scale (Leiter, 1948)	A nonverbal test of intelligence. Norms are considered outdated, but this test is thought to serve as a supplementary measure and a useful measure of ability for children with extremely limited verbal abilities (e.g., autism).
Comprehensive Test of Non-Verbal Intelligence, 3rd edition (Brown et al., 1997)	This "language-free" measure of intelligence can be used with children aged 5 and older in both individual and group formats.

Note: There are other specialized tests for use with specific age groups and for specific purposes (e.g., Bayley Scales of Infant Development, Raven's Progressive Matrices) that are beyond the scope of this article (Sattler, 1988).

The diagnosis of communication disorder not otherwise specified is for disorders in communication that do not meet criteria for any other specific communication disorder. An example might be a voice disorder in which there is an abnormality of vocal pitch, loudness, quality, tone, or resonance.

The diagnosis of reading disorder is established with the use of one or more individually administered standardized tests of reading accuracy or comprehension to establish the level of reading proficiency (Table 2). The tests usually are administered by the child's school district psychologist. Measured achievement must be substantially below that expected given chronological age, measured intelligence, and age-appropriate education. The definition further specifies that the discrepancy in reading ability must significantly interfere with school achievement or activities of daily living that require reading skills and that it must be in excess of any existing sensory deficits, such as visual or hearing disabilities. The diagnostic criteria for disorder in mathematics and written expression are similar, each emphasizing a discrepancy between expected and actual achievement that interferes with school or daily living.

There is recognition of a nonverbal type of disability associated most strongly with problems in arithmetic. This subtype is associated with a pattern of deficits in neurocognitive and adaptive functions most often attributed to the brain's right hemisphere, including problems in spatial cognition, visuoperceptual information processing, and socioemotional functioning. Children with these disabilities may have problems recognizing or producing shapes, or they may have problems with eye–hand coordination (e.g., difficulty catching a ball). These disabilities often are referred to as right hemisphere or nonverbal learning disabilities (Rourke and Finlayson, 1978). Nonverbal learning disabilities have been shown to persist into adulthood and even to worsen over time. They may be limited to mathematics or writing, or when more extensive, they may be classified as learning disorders not otherwise specified.

There is also a category for learning disorders not otherwise specified in which the disorders in learning do not meet criteria for any specific learning disorder. This category might include problems in all three areas (reading, mathematics, and written expression) that together significantly interfere with academic achievement even though performance on tests measuring each individual skill is not substantially discrepant from expectations.

TABLE 2
Summary of Selected Academic Achievement Tests Used in the Diagnosis of Language and Learning Disorders

Measure (Source)	Comment
Kaufman Test of Educational Achievement (Kaufman and Kaufman, 1985)	Contains Reading Decoding, Reading Comprehension, Mathematics Applications, Mathematics Computation, and Spelling subtests. Recognized as a useful screening test of achievement.
Wide Range Achievement Test, 3rd edition (Wilkinson, 1993)	A widely used and well-standardized test of core skills in reading, spelling, and arithmetic for children aged 5 years and older. While a detailed diagnostic assessment may require additional measures, this test is efficient in terms of administration time and has alternate forms to accommodate repeated testing.
Woodcock-Johnson Psycho-Educational Battery, Revised (Woodcock and Johnson, 1989)	This test is designed to measure various cognitive and academic achievement abilities for children aged 2 years and older. It consists of a standard battery for both the cognitive and achievement sections and additional tests for supplemental testing. It is considered a significant contribution to norm-referenced psychoeducational assessment. Tables are included to aid in evaluation of aptitude–achievement discrepancies.
Wechsler Individual Achievement Test (Psychological Corporation, 1992)	A companion to the Wechsler tests of intelligence for children between the ages of 5 years and 19 years, 11 months. This test provides composite scores in reading, mathematics, language, and writing and can be used for screening or as a comprehensive battery. This test was co-normed with the WISC-III, thereby facilitating estimates of ability–achievement discrepancies.
KeyMath Diagnostic Arithmetic Test (Connolly et al., 1971)	This test measures three areas of arithmetic ability: content, function, and applications. Used for children in school grades 1 through 6. Useful for assessing arithmetic abilities of school-age children.

Note: For additional information, see Sattler (1988).

COMORBIDITY AND ASSOCIATED PROBLEMS

Data from clinical and epidemiological samples show that the various types of developmental LLDs often co-occur (Cantwell and Baker, 1987; Hallahan et al., 1996; Wallach and Butler, 1994). There also is abundant evidence that LLDs often are comorbid with Axis I psychiatric syndromes (Cantwell and Baker, 1991; Forness, 1988; Forness et al., 1993; McKinney, 1989; Torgesen, 1990). These data are based on studies of children referred for special education who had high rates of both psychiatric and developmental disorders. Also included are data from studies of children referred for psychiatric evaluations who have been found to have high rates of LLDs and studies of children referred for evaluation of LLDs who were found to have high rates of comorbid Axis I psychiatric disorders. Children with LLDs who do not have an Axis I psychiatric disorder may have other problems, such as social skills deficits, low self-esteem,

demoralization, and depression (Kauffman, 1997; Kavale and Forness, 1995). Children with LLDs drop out of school at a rate 50% greater than the average (U.S. Department of Education, 1995). Persistence of LLDs into adult life may cause difficulty in the workplace (Roffman et al., 1994).

Follow-up studies indicate a subgroup of children with language disorders who develop problems in social communication (Cantwell and Baker, 1991), do not pick up on the nuances of social interaction, seem socially awkward, and are out of step with their peers. Children with LLDs may have underlying cognitive processing disabilities (Felton and Wood, 1989; Harnadek and Rourke, 1994; McKinney and Feagans, 1984; Pintrich et al., 1994; Reynolds, 1992; Swanson, 1987, 1988; Swanson and Keogh, 1990; Torgesen, 1990) with auditory comprehension, memory, attention, visual perception, or some combination. These underlying cognitive processing problems may precede the emergence of the language or learning disorder. It should be noted that standard tests to measure these underlying processes are less reliable and valid than tests to measure standardized academic achievement or standardized language development (Kavale and Forness, 1985a,b).

NATURAL COURSE

Each of the LLDs may be found with a wide range of severity of functional impairment as well as a wide range of outcomes (Beitchman et al., 1996b; Kavale and Forness, 1996). Outcome is affected by the nature and severity of the LLDs, comorbidity, and the presence of other risk factors. Early recognition and remediation may affect outcome in all the LLDs (Badian, 1988; Blachman, 1984; Felton, 1993; Hurford et al., 1994; MacDonald and Cornwall, 1995). The more pervasive and severe forms of expressive language disorder can be recognized in toddlerhood. Milder forms may not become apparent until late in academic development when the underlying language disorder may cause significant academic impairment (Stanovich, 1988). Table 3 presents a summary of selected speech and language tests used in diagnosing LLDs. It is estimated that 50% of children with developmental expressive language disorder eventually obtain normal expressive language development. The other 50% continue to have some degree of difficulty, including subtle deficits that are associated with the presence of learning disorders and/or other Axis I psychiatric disorders (Cantwell and Baker, 1987).

The short-term outcome for developmental mixed expressive-receptive language disorder is not as good. Language development is very slow, and children with the disorder fall farther and farther behind in language development. Cantwell and Baker (1987, 1991) have shown that with treatment, 25% of children with developmental mixed receptive-expressive language disorder demonstrate some improvement over a 4-year period. An equal number of children, however, are worse off than at initial evaluation and fall behind normal children of the same age. Children with mixed receptive-expressive language disorder have been shown to have significantly worse outcomes than children with pure expressive language disorder, not only in their language outcomes, but in the greater likelihood of learning disorders and psychiatric disorders.

The long-term prognosis is variable (Kavale and Forness, 1995, 1996; Spreen, 1988). Seventy-two percent of a community sample of children aged 5 years with speech and language impairment showed evidence of speech and language impairment when reassessed 7 years later. In addition, children with more pervasive impairments in speech and language, or in expressive and receptive language, were associated with poorer outcomes than those with less pervasive impairments (Beitchman et al., 1994). Children who have milder forms of impairment often present with normal or

TABLE 3
Summary of Selected Speech and Language Tests Used in the Diagnosis of Language and Learning Disorders

Measure (Source)	Comment
Peabody Picture Vocabulary Test-III (Dunn et al., 1997)	This test is a nonverbal, multiple-choice test of receptive vocabulary for children aged 2 years and older. Useful as a screening measure of vocabulary, especially with children who have expressive difficulties. This test should not be used as a substitute for an intelligence test.
Test of Auditory Comprehension of Language-Revised (Carrow-Woolfolk, 1985)	This test, for children between the ages of 3 years and 9 years, 11 months, is a moderately useful diagnostic measure of auditory comprehension and of single words, grammatical features, and sentence structures.
Token Test for Children (DiSimoni, 1978)	This test, for children between the ages of 3 years and 12 years, 5 months, uses oral instructions to direct the subject to manipulate tokens that vary in color, shape, and size. Useful in identifying mild receptive disturbances.
Clinical Evaluation of Language-III (Semel et al., 1995)	This widely used test is for children aged 5 years and older and is used to assess various aspects of receptive and expressive language.
Test of Language Development, Versions 2P and 2I (Newcomer and Hammill, 1988)	These tests provide a comprehensive profile of a subject's expressive and receptive syntax, semantics, and phonology. Version 2P is for children aged 4 years to 8 years, 11 months. Version 2I is for children aged 8 years, 6 months, to 12 years, 11 months. Version 2I does not include a test of phonology.

Note: For additional information, see Sattler (1988).

nearly normal language abilities in adolescence. Children with more severe forms of impairment, however, do not develop in the same fashion and may have problems in reading and writing throughout adulthood. Children with phonological disorders have a variable outcome, with severe types having persistent speech and academic difficulties (Cantwell and Baker, 1987). The outcome is more severe when problems with articulation are associated with physical or cognitive difficulties. Spontaneous recovery rarely occurs after age 8 years, but children with milder forms often recover without intervention.

Of all the LLDs, the course and outcome of developmental reading disorder has been the most extensively studied (Beitchman and Young, 1997; Kavale and Forness, 1985a; Torgesen, 1986; Wong, 1988). Adults who as children received this diagnosis demonstrate a wide range of reading abilities and reading problems (Hallahan et al., 1996). Complete inability to read in adult life is extremely rare, but many if not all adults with a history of developmental reading disorder have some residual reading problems. Better outcome is found in those children who have less severe disorders, are diagnosed earlier (controlling for severity), get appropriate treatment, have higher IQs, come from higher socioeconomic status, and lack comorbid psychiatric disorders (Kavale and Forness, 1995).

There are some data to suggest that spelling problems are more persistent than reading problems (Rutter and Yule, 1975). Much less is known about the outcome of children who have a developmental mathematics disorder or developmental disorder of written expression (Hallahan et al., 1996). Among individuals with developmental mathematics disorder, there are case reports to suggest lifelong problems in some, partial recovery in others, and completely normal development of mathematical skills in still others. Whether the variation is due to severity levels, different subtypes of mathematical disorders, or differences in treatment quality is unknown. For developmental disorder of written expression, a diagnosis is generally made later in life than for the other two developmental learning disorders. At about fifth grade in the mainstream curriculum, writing assignments shift from narrative to expository text, becoming more complex; the child must be able to explain ideas and situations in addition to reporting his or her own experience. Children with developmental disorders of written expression find this transition difficult. Developmental disorder of written expression is thought to have less of an impact on outcome than problems with reading. However, problems with written expression should always be suspected in the school-age child who has difficulty settling down to do written work. Educational opportunity and therapeutic intervention are thought to influence outcome, but there are no systematic studies to support this belief.

ASSESSMENT

The diagnostic procedure for language or learning disabilities should begin with a thorough description of the child's symptoms and areas of difficulty. A detailed history is necessary to establish the chronology of the symptoms and to identify the age at onset and any possible precipitants. The developmental history may be contributory and, if positive, helps support a diagnosis of language or learning disorder. A positive family history of language or learning problems also can help support a diagnosis. Negative findings in both these instances do not rule out the possibility of a language or learning disorder. The key clinical finding is the presence of language forms that are no longer developmentally appropriate.

Expressive language difficulties are most apparent among children whose parents report a history of delayed speech and language development (e.g., beyond 12 to 14 months in speaking in single words, or beyond 3 years in using three- to four-word phrases in connected speech). Immature or unusual forms of grammar not due to dialect or culture should alert the clinician to possible language difficulties (e.g., a rising intonation at the end of a sentence to indicate the interrogative "Have cookie please" instead of the age-appropriate "Can I have a cookie please?"). The language form may be short, incomplete, and ungrammatical (e.g., "Her go now" instead of the age-appropriate "She is going now"). Other forms of expressive language disorder can be found in children who have difficulty finding words to name objects, referring to the object as "You know," "It," or "Stuff." In older children, expressive language difficulties are most apparent as speech that is poorly organized and difficult to follow in connected discourse, such as when telling stories or relating past events, and may at times incorrectly be assumed to be an example of thought disorder. In prepubertal children, it is important to rule out a language disorder before inferences regarding the presence of thought disorder are made.

Children with phonemic difficulties may show problems with articulation, for example, by omitting initial or final consonants (e.g., "ello" for yellow, "oran" for orange) or substituting sounds in the initial position (e.g., "wabbit" for rabbit). Other common processes include repeating a syllable to make a multisyllabic word (e.g., "bahbah" for bottle), omitting a syllable that is not stressed (e.g., "tefon" for telephone), or using a sound similar to one that occurs in a word (e.g., "tat" for "cat"). These forms may be considered developmentally appropriate in children younger than age 5 years, but in older children they should be considered grounds for a referral for evaluation by a speech and language pathologist.

Problems with comprehension are typically more subtle and difficult to recognize than problems with expressive language. The clinician should be alert to possible language and language-based learning disabilities with children who

ask "What?" frequently, seem to misinterpret what is being said, or appear forgetful. Receptive language difficulties may occur in the comprehension of single words, sentences, or larger units of discourse and may arise for different reasons. The child may not be able to discriminate among different speech sounds or phonemes at an age-appropriate level (e.g., misunderstanding tea party as "tarpee"); the child's vocabulary may not be up to age level; or the child may have a poor auditory working memory and fail to encode what has been said, making it difficult to follow anything but short, simple sentences. For some children with receptive language difficulties, their experience with oral language is akin to hearing a foreign language. Individual words are difficult to decipher and words blend seamlessly into one another.

Parents may report that their child is forgetful when given more than a two-step direction. For example, when told "Go to the kitchen and get Mom her red shoes and black hand bag," the child may go to the kitchen, but once there, will have forgotten what he or she was supposed to do. Children with language disorders are sometimes misdiagnosed with ADHD because they seem distracted and noncompliant when in fact they cannot follow more than a simple two-step oral command. Some children have both ADHD and a language disorder.

Information by history or in the clinical interview that the child makes comments that are out of place or out of keeping with the content being discussed should alert the clinician to the possibility of receptive language difficulties.

Review of preschool and school records can be helpful for establishing the onset of school-based problems. Direct or phone interviews with teachers or other school professionals also can help establish onset of problems, clarify their nature, identify emotional or behavioral difficulties (including disciplinary actions) at school, and determine the appropriateness of previous assessments and response to prior interventions.

The child diagnostic interview represents an opportunity to enlist the child as a partner in the assessment process and to help in the implementation and monitoring of the child's IEP, if one is in place. In addition, the interview should address the child's perceptions of his or her problems, potential conflict with parents or others regarding school and academics, attitude toward peers, social stigma, and possible concerns with self-esteem. Some children with a reading disorder deny and minimize their reading difficulties, but most worry about whether they will ever be able to read adequately. When interviewing the child with a language disorder for comorbid Axis I disorders, the clinician must be aware that the child may have difficulty with oral expression and language comprehension and should adjust the interview process accordingly. Findings from recent pediatric examinations are critical for ruling out physical or sensory causes of poor school or language performance. For instance, the child's visual acuity and hearing should be checked to ensure that they are within normal limits.

As an aid in deciding whether further language, cognitive, or academic testing is required, or to better understand the child's or adolescent's communication skills, office-based clinical assessments of cognitive skills can be helpful. For example, the Denver Developmental Screening Test for infants, toddlers, and preschool children can be helpful (Frankenburg et al., 1990, 1992). For children and adolescents, the Symbol Language and Communication Battery (Weinberg and McLean, 1986), an office-based clinical evaluation of higher brain functions, can be used. Ten basic symbol and verbal skills are assessed, including reading, spelling, arithmetic, drawing, writing, listening comprehension, and spatial orientation, among others (Weinberg et al., 1995).

If a language or learning disorder is suspected after the initial examination, psychoeducational testing is essential. Test results may be available from the child's school or may be conducted by personnel at the child's school. If the test results are controversial, the school can be asked to defray the costs of additional testing. At a minimum, current or recent testing should include individually administered tests of IQ, academic achievement, and speech or language screening. More in-depth assessments or referral to a speech or language pathologist may be indicated depending on findings from screening measures.

Because practice effects may artificially raise IQ test results, IQ testing usually should not be repeated within 1 year of previous testing. If special circumstances (e.g., a head injury) require more current IQ test results, alternative tests or alternative forms of the same tests may be suitable. In contrast to the prevailing practice with IQ testing, academic and speech and language testing can be repeated at yearly intervals to monitor progress in these areas.

On the basis of the history, presentation, clinical evaluation, and available test results, the clinician should determine whether a language or learning disorder is present or further psychoeducational or speech and language testing is required. In addition, the clinician should identify issues that may require therapeutic intervention, such as conflicts with parents regarding homework, and parental beliefs or accusations that the child is lazy, unmotivated, or slow. To minimize future conflict and the potential for secondary psychiatric problems, it is critical to help the child, the parents, and the school establish realistic academic goals and to ensure that each has a modern understanding of language or learning disorders.

Testing procedures for LLDs should reflect the individual's ethnic or cultural background. The language of the assessor and of the assessment instruments should be the same as that of the child. Where this is not the case, results may not be valid and should be interpreted with great caution. In bilingual populations, the child's performance on standardized tests

of language and academic performance may be a poor reflection of true competence. For this reason, a thorough assessment of bilingual children should be done in both languages whenever possible.

DIFFERENTIAL DIAGNOSIS

The diagnosis of language or learning disorders depends on careful review of data from all sources, including information from parents and school personnel. The clinician should explore a range of possible causes for the child's academic problems, such as significant physical or sensory deficits, concurrent emotional or behavioral disorders, or environmental factors, such as impoverished or disorganized home, abuse or neglect, excessive school absence, frequent school changes, or lack of opportunity for instruction.

Psychiatric disorders may artificially lower IQ performance or academic achievement. Consequently, the presence or absence of an IQ–achievement discrepancy must be examined in light of the possibility that the IQ and/or achievement results do not accurately reflect the child's performance when well. An individual with ADHD, for example, may perform poorly in certain IQ subtests, thus artificially lowering his or her overall IQ and making it less possible to obtain a significant discrepancy between IQ and achievement. Review of IQ subtests may prove helpful in this regard.

Though controversial, the diagnosis of learning disorders in some jurisdictions and according to the *DSM-IV* rests on a discrepancy between potential ability and current performance. The former is determined by IQ test results and history or observations in areas unrelated to language or academic learning. The latter is determined by results of achievement testing along with current functioning or observations in these areas.

Careful consideration should be given to differential diagnoses, such as mental retardation, motor skills disorders, medical or neurological disorders, and primary psychiatric disorders. If a significant discrepancy exists between potential and performance that is not better accounted for by other factors, and if developmental and school histories are consistent with current poor performance, then a diagnosis of language or learning disorders may be made.

TREATMENT

The treatment needs of children with developmental LLDs are often complex (Forness and Kavale, 1996; Hallahan et al., 1996; Hammill, 1990; Hedge, 1996; Myers and Hammill, 1992; Swanson, 1991). It is generally accepted that a multimodal treatment approach, including education and consultation, is necessary. The clinician may not be involved in providing direct treatment for the LLD. Direct treatment may be provided, however, for concurrent psychiatric and other secondary emotional, behavioral, and relationship problems. The clinician should determine the need for and provide psychotherapy, other psychosocial interventions, and medication therapy as indicated for associated psychiatric diagnoses and secondary problems. Individual and/or group psychotherapy may be recommended for peer problems and low self-esteem that may result from chronic underachievement. Children with poor peer relationships may benefit from social skills groups or individual interventions. Associated psychiatric disorders, such as ADHD, may need to be treated with medication. When psychotropic medication is prescribed to a child with an LLD, special attention must be given to the therapeutic effects and the side effects that may influence cognitive function, attention, learning, and memory. There are no known medications specifically indicated for the treatment of LLDs.

Psychotherapy for social, behavioral, and psychiatric symptoms should be tailored to the child's specific language and cognitive deficits. Children with LLDs may have problems expressing themselves orally or have problems with comprehension and usually find verbal therapies difficult. Interventions that include nonverbal approaches, such as games, activities, art materials, and computers, are more likely to result in responsive patients than those exclusively language-based. Individual treatment of the child should address goals of minimizing disability and maximizing potential through problem-solving, social support, study habits, encouragement in extracurricular athletic or other activities, and help with further educational and career decisions. Referral to appropriate support groups for children with speech, language, and learning disorders may also be an appropriate intervention (Falik, 1995).

Parent support, consultation, and management training may be needed to help the family develop a supportive home environment and a consistent home/school reinforcement program. Parents and teachers also may need help to understand the child's problem and its possible biological and or genetic basis, so that the child is not viewed as simply stubborn, lazy, oppositional, or slow. An important corollary for successful treatment when there are comorbid behavioral or emotional difficulties is to help the parents and teachers appreciate the connection between the LLD and the behavioral and emotional problems.

For the speech, language, and learning disorders themselves, the clinician should have an educational and monitoring role (Forness and Kavale, 1989). The clinician, in collaboration with school personnel and other professionals, should educate parents, other relevant caregivers, and the children themselves about the nature of speech, language, or learning disorders. This would include description of the symptoms, prognosis, and treatment approaches that might be necessary. Counseling parents or caregivers about their role

in collaborative interventions is useful. Collaborating with school system personnel around school-related problems is an appropriate intervention (Roberts and Mather, 1995). Clinicians may consult with the parents and the school on IEP planning, appropriate school intervention, and placement within public or private schools. *Informed Instruction for Reading Success: Foundations for Teacher Preparation* (Brady and Moats, 1997) summarizes the conceptual foundations of reading acquisition and the sources of reading difficulty and can serve as a useful reference for parents and professionals regarding the nature of reading disabilities and the requirements for success at reading. This document can be especially helpful in consulting with parents on unproven but highly touted treatments for LLDs.

The clinician should ensure that parents understand their child's rights under the IDEA and help prepare them for an IEP meeting. The state department of education or local school district can provide the parents with information about the IDEA. With parental consent, the clinician can be optimally involved in the IEP meeting by facilitating collaboration between the school personnel and the parents, and when appropriate, the child. The clinician can present psychiatric or related psychosocial findings to assist or advocate for the parents during the IEP process. Children may remain in regular classrooms with special assistance, but others may need special settings for all or part of their school day (Learning Disabilities Association of America, 1993).

The parents (or the clinician on the parents' behalf) should inform the school in writing of the child's need for special education services. Once so informed, IDEA requires the school to construct a plan to take into account the child's learning and behavioral needs. In addition, in cases in which the child might not qualify for formal special education service under IDEA, Section 504 of the Rehabilitation Act requires the school to provide classroom accommodation or intervention for the child's learning or behavioral problems (Council of Administrators of Special Education, 1992; Voltz et al., 1995; Zirkel, 1995) (Table 4).

Programs are offered in a variety of special education categories, including programs for children with language impairment, learning disabilities, emotional or behavioral disorders, and others for which the child should receive appropriate services (Forness and Kavale, 1989; Kavale and Forness, 1998). Though largely a decision of school administrative personnel, the clinician also should help monitor appropriate school or class placement and, in collaboration with school personnel, the appropriateness of educational and school interventions. Some children may require private speech or language therapy or tutoring in academic subjects. Clinicians can assist the family in finding and assessing the relevance of various interventions. School-based interventions may include individual and/or group therapy and consultation with teachers and parents regarding direct treatment of the speech, language, or learning disorders (Cantwell and Baker, 1991; Hallahan et al., 1996). The clinician can monitor the efficacy of interventions in reducing concurrent or secondary emotional or behavioral problems, family difficulties, and peer problems. In collaboration with school personnel, the clinician also should monitor the child's growth and development, progress in acquiring appropriate speech and language skills, academic proficiency, and progress in peer and social relationships. Changes in self-esteem, family interactions, use of leisure time, and extracurricular school activities also should be monitored. The clinician must evaluate the therapeutic response and side effects of any medication.

TABLE 4
Variations in School or Classroom Placement as Specified in Individual Education Plans

- Regular class placement, with special education consultation to general education teacher on remedial or treatment methods and materials if speech, language, or learning disorder is relatively circumscribed and/or mild
- Regular class placement, with pull-out placement in special resource room or in speech or language therapy for one or more periods per day if need for special methods or materials is intensive or disruptive of regular class routine
- Special class placement if severity of speech, language, or learning disorders and/or concurrent psychiatric diagnoses require especially intensive interventions
- Special school or speech and language clinic placement (private schools can sometimes be funded at public school expense) if special circumstances warrant (e.g., lack of appropriate program in local school, or especially complex concurrent diagnoses)
- Private speech or language therapy or private individual tutoring in reading or mathematics if the child does not qualify for special education services in the public sector, or school personnel are unable to provide necessary therapy or instruction, or school services need to be supplemented with more intense intervention

For adolescents, it is important to be aware of coexisting disruptive behavior disorders, mood and anxiety disorders, and substance use disorders that may lead to school dropout, truancy, and delinquency. Prevocational and vocational skill development may be needed. The clinician should help the family evaluate the need and/or potential for postsecondary education (Scott, 1994).

The clinician should be available to assist the parents in interpreting the testimonials given for unusual treatments, without demonstrated efficacy, for speech, language, or learning disorders (Beitchman and Young, 1997; Kavale and Forness, 1985b). These would include patterning exercises, perceptual motor training, biofeedback, diet regimens, and megavitamin therapies.

CONFLICT OF INTEREST

As a matter of policy, some of the authors to these practice parameters are in active clinical practice and may have received

income related to treatments discussed in these parameters. Some authors may be involved primarily in research or other academic endeavors and also may have received income related to treatments discussed in these parameters. To minimize the potential for these parameters to contain biased recommendations due to conflict of interest, the parameters were reviewed extensively by Work Group members, consultants, and Academy members; authors and reviewers were asked to base their recommendations on an objective evaluation of the available evidence; and authors and reviewers who believed that they might have a conflict of interest that would bias, or appear to bias, their work on these parameters were asked to notify the Academy.

SCIENTIFIC DATA AND CLINICAL CONSENSUS

Practice parameters are strategies for patient management, developed to assist clinicians in psychiatric decision-making. These parameters, based on evaluation of the scientific literature and relevant clinical consensus, describe generally accepted approaches to assess and treat specific disorders or to perform specific medical procedures. The validity of scientific findings was judged by design, sample selection and size, inclusion of comparison groups, generalizability, and agreement with other studies. Clinical consensus was determined through extensive review by the members of the Work Group on Quality Issues, child and adolescent psychiatry consultants with expertise in the content area, the entire Academy membership, and the Academy Assembly and Council.

These parameters are not intended to define the standard of care, nor should they be deemed inclusive of all proper methods of care or exclusive of other methods of care directed at obtaining the desired results. The ultimate judgment regarding the care of a particular patient must be made by the clinician in light of all the circumstances presented by the patient and his or her family, the diagnostic and treatment options available, and available resources. Given inevitable changes in scientific information and technology, these parameters will be reviewed periodically and updated when appropriate.

OUTLINE OF PRACTICE PARAMETERS FOR THE ASSESSMENT AND TREATMENT OF CHILDREN AND ADOLESCENTS WITH LANGUAGE AND LEARNING DISORDERS

Children Aged 6 to 12 Years

I. Purpose and aims of the clinical diagnostic assessment.
  A. The purposes of the assessment.
    1. To determine whether speech, language, or learning disorders are present and if so, to establish a differential diagnosis and tentative diagnostic formulation.
    2. To develop treatment or medical recommendations and plans.
    3. To communicate findings in an appropriate fashion to the parents, child, and school.
    4. To facilitate child, family, and school cooperation and engagement in treatment or remediation.
  B. The aims of the assessment process.
    1. To identify the stated reasons and factors leading to the referral.
    2. To assess the nature and severity of the child's difficulties.
      a. Speech, language, learning, or associated behavioral difficulties.
      b. Functional impairment.
      c. Subjective distress.
    3. To identify individual, family, environmental, and school factors that may account for, influence, or ameliorate the child's difficulties.

II. Diagnostic assessment.
  A. Interview with parent(s).
    1. Obtain child's history.
      a. Developmental history and *DSM-IV* target symptoms.
      b. Development of symptoms including speech difficulties, language delay, or school learning and behavioral problems.
      c. Parents' view of the nature of child's speech, language, or learning difficulties and their expectations for future progress, treatment, or remediation.
      d. Medical history and releases.
    2. Obtain family history.
      a. Learning, communication, and developmental disorders.
      b. Attention-deficit/hyperactivity disorder (ADHD), conduct disorder, oppositional defiant disorder, depression, dysthymia, and anxiety in family members.
      c. School dropout, juvenile delinquency, or poor work adjustment.
      d. Family coping style and resources.
  B. School information.
    1. Obtain information about school/preschool functioning from contact (in person, by phone, or through written reports) with appropriate staff, such as principal, teacher, school psychologist, and/or counselor if release of information is granted by parent.
    2. Review information for excessive absences; child–teacher conflict; repeating grades; onset of

speech, language, learning, or behavioral problems; previous school evaluations or interventions; disciplinary referrals; and/or special education.

3. With parental consent and the consent of the child, share information with school personnel that is relevant to the child's progress academically and behaviorally at school.

C. Child diagnostic interview. Child's perception of his or her speech, language, or school problems may be critical, including attitude toward school, peer relationships, social stigma, and possible conflict with parents regarding school and academics.

D. Physical evaluation of the child.
   1. Pediatric examination within 12 months as indicated.
   2. Contact and collaboration with family doctor/pediatrician or other health care providers.
   3. Vision and hearing check as indicated.
   4. Evaluation of other medical and neurological conditions as indicated.

E. Psychoeducational testing in IQ; achievement in reading, mathematics, and language, including precursor skills in phonological awareness; cognitive processing in attention and memory; and auditory and visual processing may be required. The psychological and academic domains to be tested and the choice of psychoeducational instruments is best decided as a collaborative process involving the clinician, family, and school personnel. Prior or concurrent assessment results should be reviewed, and additional testing requested when indicated.
   1. Identify presence of *DSM-IV* target symptoms from preceding information.
   2. Consider the following.
      a. Appropriateness of tests used in assessment (i.e., IQ tests reflective of child's cultural or linguistic background; diagnostic rather than screening tests of speech, language, or academic achievement).
      b. Extent of discrepancy between age or IQ expectations and actual performance or achievement. The discrepancy may be sufficient for a diagnosis of speech, language, or learning disorders, but eligibility for the speech or language impairment and/or the learning disability category in public schools in some states may require a much larger discrepancy.
      c. Rule out environmental factors, including impoverished or disorganized home, presence of child abuse/neglect, mental illness or related disorders in parents, excessive absences from school, frequent school moves, and culturally consistent speech and language models.
      d. Contribution of the child's primary emotional or behavioral disorders, if any, to low performance on speech, language, or psychoeducational testing (e.g., ADHD, depression, or anxiety may artificially lower IQ test results, making it more difficult to ascertain a discrepancy between IQ and achievement, speech, or language performance).

F. Differential diagnosis. The following diagnoses should be considered because they may be concurrent with or mistaken for speech, language, or learning disorders.
   1. Mental retardation.
   2. Motor skills disorder.
   3. ADHD.
   4. Mood disorder.
   5. Anxiety disorder.
   6. Medical/neurological primary diagnosis, e.g., fetal alcohol syndrome, prenatal substance abuse, fragile X syndrome.

III. Treatment.

A. Education and consultation.
   1. When appropriate, and in collaboration with school personnel and other relevant professionals, educate parents and other significant caregivers about speech, language, or learning disorders (e.g., symptoms, clinical course, prognosis) and counsel parents or caregivers about their role in collaborative interventions. Be certain that they understand LLDs and do not view the child as simply lazy, stubborn, or willful.
   2. Caution parents about unusual or unsubstantiated treatments, such as colored lenses, diet-restriction approaches, megavitamin therapies, optometric visual training, vestibular stimulation diet, and patterning exercises.
   3. In collaboration with school personnel, educate the child about speech, language, or learning disorders in an age-appropriate manner and share observations from assessment results.
   4. Ensure parents understand their rights under the Individuals With Disabilities Education Act (IDEA) to request an Individual Educational Plan (IEP) meeting and stress that this request be documented in writing to ensure their right to a timely process. Schools are required to present parents with a plan for evaluation of their child within 30 days of request. Furthermore, schools are required to complete this evaluation and hold an IEP meeting in a timely fashion (usually within 45 to 60 days of parents' approval of evaluation plan).

5. Assist parents in monitoring this process and providing reports of private evaluations; ensure that school personnel plan to take private speech, language, psychoeducational, psychiatric, or other pertinent evaluations into account.
6. In collaboration with school personnel, prepare parents for participation in the IEP meeting. (For example, inform them of their right to present their assessment of their child's needs and to question test results or findings that they do not understand or with which they disagree. Any decisions about the goals for their child's education, their child's eligibility for special education, placement in special education or regular classrooms, and the proposed means of evaluating future progress are subject to parental approval. The parents also should be informed that public funding may be available for private schools or services in cases in which appropriate public school programs are not available.)
7. Attend the IEP meeting, at the parents' request, to elaborate on psychiatric or related psychoeducational findings and facilitate a collaborative approach with the IEP process.
8. Help ensure that the parents understand and are satisfied with the results of the IEP meeting. Schools are required to provide a mediation conference (or even a fair hearing process if mediation fails) in a timely fashion if parents are not satisfied with their child's IEP. Under IDEA, the parents have a right to obtain copies of school reports or assessments, a right to have their attorney or an advocate present, and other due process rights as might apply. If the IEP, mediation, and due process fail to provide appropriate eligibility or programs, under IDEA, public schools may still be required to provide at least some interventions for the child under Section 504 of the Rehabilitation Act. If the clinician believes there is a disability, with parental consent he or she should inform the school requesting accommodation under Section 504 of the Rehabilitation Act.

B. Treatment of comorbid disorders. Psychotherapies and other psychosocial interventions as indicated for concurrent psychiatric diagnoses and/or secondary problems.
   1. Individual and/or group psychotherapy for poor self-esteem and/or peer problems.
   2. Social skills training for poor peer or social relationships.
   3. Medication for relief of concurrent psychiatric disorders, with special attention to therapeutic side effects that may impact attention, learning, or memory.
   4. Parent support, consultation, and behavior training as appropriate, to develop supportive home environment and/or consistent home–school reinforcement programs.
   5. Support and/or self-help groups with other children or families of children with speech, language, or learning disorders, to assist in coping with disability.
   6. Counseling in minimizing disability and maximizing potential through problem-solving, social support, study habits, choice of extracurricular or athletic activities, and education or career decisions.
   7. When appropriate and with consent, the child's progress should be conveyed to school personnel.

C. Ongoing monitoring of appropriateness of school interventions, in collaboration with the child, family, and school personnel.
   1. Special education eligibility.
   2. Speech or language impairment category if speech or language disorder is not accompanied by other significant diagnoses or complications.
   3. Learning disability category if learning disorder is not accompanied by other significant diagnoses or complications.
   4. Emotional or behavioral disorder category if concurrent psychiatric diagnoses appear to significantly impact schooling.
   5. Other special education categories (e.g., mental retardation, visual or hearing impairments, multiple disabilities) in cases in which other disabilities are primary.
   6. Individual therapy for articulation disorder, voice or fluency problems, or language disorders.
   7. Small-group instruction in language development including phonology, morphology, syntax, semantics, or pragmatic use of language.
   8. Language modeling, corrective feedback, and reinforcement for child's speech or language efforts.
   9. Individual phonics-based instruction in reading with increasing emphasis on contextual or whole-language instruction, as child's reading vocabulary increases in later grades.
   10. Individual tutoring or small-group instruction in listening, following directions, or other supplemental skills.

11. Individual tutoring or small-group instruction in mathematics and/or written language if these disorders are also present.
12. Recommendations for instruction in social studies, science, and other academic areas, including tape-recording of lectures and alternative testing of academic subject content in these areas, especially in higher grade levels.
13. Individual or small-group feedback and/or instruction in conflict resolution, social skills, or problem-solving.
14. Use of behavior modification and corrective feedback in classroom management of behavioral or motivational problems.
15. Monitoring of child's progress in collaboration with the parents and school personnel.
    a. Speech or language development.
    b. Academic progress and school behavior.
    c. Emotional growth and self-esteem.
    d. Peer and social relationships.
    e. Leisure time and extracurricular school activities.
    f. Family support and interactions.
    g. Continued appropriateness of speech, language, special education, or related school interventions.
    h. If the child is receiving medication, monitor therapeutic and/or side effects on attention, learning, or memory.

Children Aged 3 to 5 Years

Same as for children aged 6 to 12 years, except as follows.

I. Unusual delays in development of spoken language skills (in the absence of other psychiatric disorders) or in development of early letter, number, or word recognition skills may be precursors of speech, language, or learning disorders and should be monitored closely for possible early detection.
   A. Since formal instruction in reading or other academic skills does not take place until first grade, learning disorder is usually not diagnosed before age 6 years.
   B. For gifted children (IQ above 130), academic skills should be expected to develop before age 6 years, and speech or language development should be commensurate with advanced intelligence; therefore, speech, language, or learning disorders may be diagnosed much earlier. However, wide disparities between cognitive skills and academic readiness skills or delays in speech and language development may be noted before age 6 years and the appropriate diagnoses would apply.

Adolescents

Same as for children aged 6 to 12 years, except as follows.

I. Evaluate especially for signs of coexisting conduct, mood, and substance abuse disorders.
II. Evaluate for school dropout, truancy, and delinquency.
III. Evaluate need for prevocational and vocational skill development.
IV. Evaluate need and/or potential for postsecondary education.

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