

Acknowledgements

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Silvana Watson, Ph.D.

Associate Professor in Special Education
Old Dominion University
(primary author)

**Virginia Council of Administrators for Special
Education (VCASE)
Board Members and Teachers**

Jim Gallagher

Amherst County Public Schools
President, VCASE

Wyllys VanDerwerker

Lynchburg City Schools

Shelia Bailey, Ph.D.

Hopewell City Schools

Rachel Jenner

Rockingham County Schools

Virginia Department of Education

John Eisenberg, M.Ed.

Assistant Superintendent for
Special Education and Student Services

Patricia Haymes, J.D.

Director, Office of Dispute Resolution and
Administrative Services

Patricia Abrams, Ed.D.

Director, Special Education Instructional Services

Deborah Johnson, Ed.S.

Specialist, Special Education Instructional Services

Marie Ireland, M.Ed.

Specialist, Special education Instructional Services

Teresa Lee, Ed.D.

Specialist, Special Education Instructional Services

Wayne Barry, Ed.D.

Specialist, Student Services

Mary Stowe, M.Ed.

The College of William and Mary
Training and Technical Center

Guidelines for Educating Students with Specific Learning Disabilities (SLD)

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Introduction

This guidelines document is designed to be a resource for teachers and administrators as they address the educational needs of students with a Specific Learning Disability (SLD) in Virginia. Parents of children with SLD may find this document useful as well. These guidelines offer an overview of best practices for educating individuals with SLD and should be used in conjunction with the Virginia Department of Education (VDOE) *Regulations Governing Special Education Program for Children with Disabilities in Virginia* as well as other VDOE guidance documents. The guidelines are informational and are not mandated. Also, the location and/or content of the Web site links may have changed since the publication of this document. Additional information and resources may be found on the VDOE Web site at: www.doe.virginia.gov or by contacting the VDOE at:

Virginia Department of Education
Division of Special Education and Student Services
P.O. Box 2120
Richmond, VA 23218-2120
1-800-422-2083
Text Users Dial: 711(Relay)

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Guidelines for Educating Students with Specific Learning Disabilities

Foundational Competencies

Introduction to a Specific Learning Disability (SLD)

Specific Learning Disabilities Defined

Specific learning disabilities represent a heterogeneous set of neurobiological disorders that include difficulties in several academic and social domains.

IDEA Definition

According to the Individuals with Disabilities Educational Improvement Act (IDEA) and Virginia Regulations at 8VAC-20-81-10, a “Specific Learning Disability means a disorder in one or more basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, dyslexia, or developmental aphasia.”

“Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities; of intellectual disabilities; of emotional disabilities; of environmental, cultural, or economic disadvantage. (§ 22.1-213 of the Code of Virginia; 34 CFR 300.8(c)(10)).”

Explanation of Definition

“ . . . a disorder . . . basic psychological processes”: There is an assumption that some type of disorder of perception, language, or cognition (e.g., memory) prevents the student from learning.

“ . . . involved in understanding or in using language, spoken or written”: A Specific Learning Disability is a language-based disability, meaning that the disability has to do with difficulty with words and rules of sounds that make up words and words to make up sentences. It includes deficient skills in oral expression and listening comprehension.

“ . . . that may manifest itself in an imperfect ability to . . . read . . . or do mathematical calculations . . .”: Specific learning disabilities affect the academic performance of the student.

“ . . . does not include learning problems that are primarily the result of visual, hearing. . .”: The exclusion component asserts that the specific learning disability is not caused by these factors. However, the word ‘primarily’ suggests that learning disabilities can coexist with those conditions.

Types of Specific Learning Disabilities

SLD occurs regardless of such factors as an individual’s culture, race, language, gender, or socioeconomic status. In March 2011, the National Joint Committee on Learning Disabilities pointed out that SLD persist in various forms across the life span, with precursor – most often language delays or language deficits in early childhood – appearing before schooling begins into adulthood (NJCLD, 2008). Furthermore, various types of SLD have been recognized in the research. The most common types are addressed below.

Dyslexia: Virginia’s regulations define dyslexia as distinguished from other learning disabilities due to its weakness occurring at the phonological level. Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge. 8VAC 20-81-10

In other words, dyslexia is a reading, decoding and spelling problem. Assessment of decoding problems includes reading lists of real words with or without context clues and pseudowords (pronounceable words that do not have meaning but sound like English words, such as *tat*). Students with dyslexia do not usually have problems with listening comprehension or verbal reasoning. Some students, however, may have significant oral language problems, including listening and reading comprehension.

It is important to note that not all reading difficulties are the result of dyslexia. Other disorders may cause reading and writing problems (Berninger & Wolf, 2009). Some students with dyslexia may also have dysgraphia (handwriting subtype).

The literature indicates that learning to read requires linguistic awareness. Linguistic awareness can be defined as the ability to hold words in mind and reflect on their parts. There are three kinds of linguistic awareness: phonological awareness, orthographic awareness, and morphological awareness.

- **Phonological Awareness** is the understanding and awareness that spoken words consist of individual sounds (i.e., phonemes) and combinations of speech sounds (i.e., syllables and onset-rime units such as *ight*, *right*, *tight*). Two important phonological awareness activities are blending (i.e., combine phonemes to form words) and segmentation (i.e., break spoken word into its separate phonemes).
- **Orthographic Awareness** refers to sensitivity to constraints on how the letters are organized to form words (e.g., *tap* vs. *tpa*).
- **Morphological Awareness** refers to the ability to identify word parts (i.e., morphemes) that signal meaning and grammar (e.g., *talked*, *undo*).

Research suggests that teaching reading should include “explicit and systematic instruction of (1) phonological awareness, (2) applying phonics (alphabetic principle) and morphology to decoding, (3) applying background knowledge already learned to unfamiliar words or concepts in material to be read (activating prior knowledge), (4) both oral reading and silent reading with appropriate instructional materials, (5) activities to develop reading fluency, and (6) reading comprehension.” (Berninger & Wolf, 2009, pp-49-50)

Dysgraphia/Agraphia: Dysgraphia is a disorder of writing caused by neurological damage. Dysgraphia affects the student’s ability to write which requires motor and linguistic skills. Dysgraphia can lead to difficulties in handwriting, spelling, and written expression. It is partially the result of visual-spatial and language processing difficulties (Berninger & Wolf, 2009; National Center for Learning Disabilities, 2012; Papathanasiou, Coppens, Potagas, 2013; Rapcsak & Beeson, 2000).

Dysgraphia interferes with the student’s ability to write a composition. Students may forget what they planned to write because they are trying to remember how to form the letters. They may write more slowly and their handwriting may be so illegible that the reader cannot decipher the message. Thus, handwriting affects the thinking ability, knowledge, and ideas of students with dysgraphia.

Teaching methods including explicit instruction in transcription (e.g., handwriting, keyboarding) rather than instructional accommodations only should be considered. The key to handwriting and spelling instruction is to “draw students’ attention to the orthographic word form in written words and the constituent letters” (Berninger & Wolf, 2009, p. 133). Researchers, such as Berninger and colleagues, suggest that many students with handwriting difficulties benefit from direct, explicit, multisensory instruction and opportunities to practice. Observations, analysis of student work and writing assessments may be used to determine the appropriate instructional method.

Dyscalculia: Dyscalculia is the inability to understand and remember mathematics concepts, rules, formulas, basic computation skills, and sequence of operations. Students with dyscalculia have poor understanding of number concept and the number system and skills that are the foundation of higher order mathematical skills. Dyscalculia interferes with academic achievement and daily living skills requiring mathematical ability (Jordan, Glutting, & Ramineni, 2010; Lago & DiPerna, 2010; Lyons & Beilock, 2011; Nieder & Dehane, 2009).

Mathematics difficulties range from mild to severe and students may demonstrate specific weaknesses and manifest different types of deficits in mathematics. For example, some students have difficulty memorizing computational facts while others struggle with conceptual knowledge.

According to the National Center for Learning Disabilities (NCLD), instructional practices that are systematic, explicit, provide feedback, repeated reinforcement and practice are beneficial to students with dyscalculia. Unfortunately, research on mathematics learning disabilities is still not well validated; thus, there is still much to learn about mathematics disabilities.

Developmental Aphasia: Aphasia is a language disorder that affects the student's ability to understand and express linguistic messages. Aphasia is a disorder of language form, structure, verbal elaboration, or the communicative intention resulting from dysfunction of the central nervous system (Nadeau, Rothi, & Crosson, 2000; Paphanasiou, Coppens, & Potagas, 2013; PubMed, 2012). Aphasic language problems are distinct from speech disorders.

Characteristics of students with Specific Learning Disabilities

Although students with SLD by definition do not have an intellectual disability, they may have cognitive deficits in the following areas.

- **Perception:** Students may have perceptual problems or difficulties recognizing, discriminating, and interpreting sensation, especially visual and auditory stimuli (Mammarella & Pazzaglia, 2010; Mercer & Pullen, 2009).
- **Attention:** Students may exhibit attention problems. They may have difficulty selecting and focusing attention on the most relevant stimuli, which is an essential component for learning (Obrzut & Mahoney, 2011; Sinclair, Guthrie, & Forness, 1984, Smith, 2004). If a student cannot control his/her attention, interfering information will adversely affect the student's learning (Screievasan & Jha, 2007).
- **Memory:** Students may have deficits in memory, especially working memory. Working memory is the ability to temporarily hold and manipulate information for cognitive tasks performed on a daily basis. Many authorities associate deficits in working memory with reading (Berninger et al., 2010; Swanson, 2011), mathematics (Alloway & Passolunghi, 2011; Berg & Hutchinson, 2010), and written language disorders (Alamargot, Caporossi, Chesnet, & Ros, 2011; Bourke & Adams, 2010). Working memory capacity is a good predictor of a student's ability to retrieve information which is important for learning to occur.
- **Processing Speed:** Some students do not process information effectively and efficiently. Information processing speed distinguishes students with SLD from their peers without disabilities. Students with SLD have deficits in both the speed and the capacity of visual and auditory information processing (Geary, Hoard, & Bailey, 2012; Kail, 1994; Weleir, Forbes,

Kirkwood, & Waber, 2003). Naming speed is a second core deficit in dyslexia (Vukovic & Siegel, 2006) and it influences mathematical fluency (Donlam, 2007).

- **Metacognition:** Metacognition is the ability to adjust behavioral and environmental functioning in response to changing academic demands (Zimmerman, 1986). It is one's knowledge of one's own cognitive processes and the understanding of the products related to them; it is "thinking about thinking." Metacognition also includes knowledge of the relationship between a task and strategy and when, where, and why to use the strategy (Reid & Lienemann, 2007). Students with SLD demonstrate inadequate metacognitive awareness and are less likely to use task-appropriate metacognitive strategies. Instructional approaches that facilitate the use of metacognitive learning should be considered.

Metacognitive strategies include a systematic rehearsal of steps or conscious selection among strategies to complete a task. They are used to monitor and evaluate progress during task execution. Metacognition is vital to academic success (Rosenzweig, Kravec, & Montague, 2011; Sideridis, Morgan, Botsas, Padeliadu, & Fuchs, 2006).

- **Language:** Language delay and inappropriate use of language are problems some students with SLD may have. Students may have problems in phonology (sounds), semantics (vocabulary), syntax (grammar), morphology (prefixes and suffixes), and pragmatics (social language). These language problems may adversely affect academic areas (Berninger & May, 2011; Morin & Franks, 2010; Steele & Watkins, 2010).
- **Academic:** Academic deficits for children with SLD are outlined in the definition of SLD and will be addressed in more detail throughout the guidance documents.
- **Social:** Some students with SLD have deficits in the area of social competence that are exhibited in a variety of social skill difficulties.

These students may misread social cues, be unaware of how their behaviors impact others and misinterpret the feeling of others. These deficits in social competence may affect both the student's social and academic achievement. Social deficits may increase the possibility of potential unfavorable consequences such as school dropout. (Elbaum & Vaughn, 2003; Elksnin & Elksnin, 2004; Elias, 2004; Kavale & Forness, 1996; Lane & Menzies, 2010).

It is important to note that students with SLD are a heterogeneous group and not all students with SLD will exhibit all of these characteristics.

Comorbid Disorders and SLD

There are several disorders that may be comorbid or associated conditions that tend to occur together with SLD and should be considered during the evaluation process. However, it is incumbent upon eligibility teams to determine whether the SLD is the primary disability or not based on eligibility requirements outlined in the regulations.¹ The comorbid disorders include:

- **Attention Deficit Hyperactivity Disorder (ADHD):** ADHD is a problem with inattentiveness, over-activity, impulsivity, or a combination of these problems (Barkley, 2006; PubMed Health, 2012). Students with ADHD are a heterogeneous group of students who display variation in the degree of symptoms, in the age of onset, in the cross-situational pervasiveness of those symptoms, and in the extent to which other disorders occur with ADHD (Barkley, 2006; Dietz & Montague, 2006). Approximately 20 percent of students with SLD have ADHD (Karande et al., 2007), but ADHD is not the primary cause of the learning difficulties. Resources to address issues related to ADHD are available at <http://www.ed.gov/rschstat/research/pubs/adhd/adhd-identifying.html>.

¹ *The Regulations Governing Special Education Programs for Children with Disabilities in Virginia* define the specific disabilities and the eligibility criteria. The document is available at http://www.doe.virginia.gov/special_ed/regulations/state/regs_speced_disability_va.pdf.

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- **Emotional Disabilities:** Some students with SLD may also have emotional and behavioral concerns. However, emotional and behavior concerns should not be the primary cause of the learning difficulties. The Interagency Committee on Learning Disabilities (ICLD), other LD organizations (e.g., NCLD, ACLD) and researchers acknowledge that students with SLD may have difficulties in social skills, self-concept, emotions, and social information processing. If the emotional and behavior concerns exist over a long period of time and to a marked degree that adversely affects a child's educational performance, the regulations require that the eligibility team consider a determination of an emotional disability.
- **Speech and Language Impairments:** Some students with SLD have significant difficulties with syntax, phonological and morphological

skills, as well as associated deficits in semantics and pragmatics. There is a close relationship between oral language and units of written language. Poor academic performance can be the result of the interplay between language and academic deficits. The role of language problems in reading and other academic areas is well documented in the literature (Benner, Mattison, Nelson, & Ralston, 2009; Goran & Gage, 2011; Kaderavek, 2011; Miller & McCardle, 2011; Troia, 2011).

The guidance document, *Speech-Language Pathology Services in the Schools: Guidelines for Best Practice*, is available at http://www.doe.virginia.gov/special_ed/disabilities/speech_language_impairment/speech_lang_pathology_services.pdf. It is an additional resource that may be useful in understanding and addressing speech and language related issues for students with SLD.

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The Special Education Process

Referral

A referral is the first step in the identification process for special education. Anyone, including the parent or legal guardian, who suspects a student has a disability that may require special education can make a referral for an evaluation. The referral must be made to the special education administrator or designee. The designee might be an individual at the local school or at the local education agency (LEA) central office. The administrator or designee records the date the referral was made and reason for the referral, as well as the name(s) of the person or agency making the referral. Once a request has been made, a multidisciplinary team consisting of the parent or guardian and professionals from various disciplines convene for a school-based team meeting.

The team discusses the student's needs and decides whether it suspects that the student has a disability. If the team does suspect a disability, it then determines the necessary components of the evaluation. The evaluation and eligibility determination must be completed no later than 65 business days from the date of the referral. (See Guidance on Evaluation and Eligibility for the Special Education Process at http://www.doe.virginia.gov/special_ed/tech_asst_prof_dev/topic_specific_resources/index.shtml and Regulations Governing Special Education Programs for Children with Disabilities in Virginia (PDF) http://www.doe.virginia.gov/special_ed/regulations/state/regs_speced_disability_va.pdf for additional information.)

Evaluation and Eligibility Process

Evaluation is the process of determining whether a student has a disability and the nature and extent of the special education and related services that the student needs.

The evaluation must include a variety of assessment tools and strategies. If an evaluation is needed, informed written consent from the parent or

guardian must be obtained. Once the components of the evaluation are completed, the eligibility team convenes and determines whether the student is eligible for special education and related services, as well as the student's educational needs. The group must draw from a variety of sources in making this determination. If there is a disagreement between the school and the parent, due process is available. (See http://www.doe.virginia.gov/special_ed/disabilities/guidance_evaluation_eligibility.docx for more information on dispute resolution process.)

SLD Identification Methods

The regulations provide three options that may be used when determining whether a student meets the criteria as a student with an SLD. In Virginia, school divisions have the option of using the **Severe Discrepancy Process** model, the **Response to Intervention (RtI)** model or the **Alternative Research Practice** model for evaluation of a student's needs for possible special education services.

Severe Discrepancy Process Model

The severe discrepancy model is based on the difference between a student's ability to learn (IQ) and his/her present academic achievement scores. This is commonly based on the administration of a norm-referenced intelligence test and academic achievement tests. Generally, if a severe discrepancy between ability and achievement is evident, a processing deficit discovered in the cognitive testing is the suspected cause of this discrepancy, and as a result, in most cases, the student would be identified as a student with an SLD.

Controversy exists over the use of the severe discrepancy model as the sole way to identify students with SLD (Aaron, Joshi, Gooden, & Bentum, 2008; Fletcher, Denton, & Francis, 2005; Lerner & Johns, 2012; Peterson & Shinn, 2002; Proctor & Prevatt, 2003). Some of the concerns about the discrepancy model include the following:

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- (1) It fails to differentiate between children with learning disabilities and those who have academic achievement problems due to poor instruction, lack of experience and other related factors.
- (2) The use of IQ tests is often perceived as unreliable due to the potential to discriminate against certain groups of students (students outside of mainstream culture and students who are in the upper and lower ranges of intellectual abilities).
- (3) Students who are poor achievers have similar characteristics, whether they have high IQ scores or low IQ scores.
- (4) The discrepancy formulas vary from state to state (Lerner & Johns, 2012).

Response to Intervention (RtI) Model

The RtI model consists of a multi-tiered approach to intervention that includes scientifically-based instruction, tiered intervention and support, student progress monitoring, and fidelity of implementation. RtI data is useful in helping to determine if more evaluation data are needed. These data used in the evaluation process document that the student's lack of academic progress is not the result of inappropriate instruction or other factors, such as cultural and linguistic diversity. However, a concern with RtI includes the fact that it is a subjective process with no clear guidelines or objective means to determine what are or are not considered appropriate forms or levels of intervention.

The RtI process does not take the place of a comprehensive evaluation of a student for special education services; RtI is one component of the evaluation procedure (Finch, 2012; Hoover, 2010; Vaughn et al., 2010; Vanderheyden, 2011; Virginia Department of Education, 2009; Wanzek & Vaughn, 2008). The Virginia Department of Education has developed a resource document, RtI and the Special Education Eligibility Process: Frequently Asked Questions, to assist schools with the development of local special education policies and practices on the use

of RtI and the eligibility process. This document can be found at http://www.doe.virginia.gov/instruction/virginia_tiered_system_supports/response_intervention/special_ed_eligibility_faq.pdf

Alternative Research-Based Approach

(or third-method)

In this approach, student performance is evaluated with the goal of identifying strengths and weaknesses in the areas consistent with the definition of SLD. For a student to be eligible, the data on the student's performance should indicate those specific academic and basic psychological process deficits included in the IDEA's definition of SLD. IDEA lists eight specific areas of academic deficiency (34CFR 300.309). This approach is based on the concept of "unexpected underachievement." Inherent in this approach is the idea that the student has at least an average level of general intelligence (Flanagan, Fiorello, & Ortiz, 2010 a, b; Flanagan, Ortiz, Alfonso, & Dynda, 2006). This method of identification is supported by IDEA in the statement, "... the child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, State approved grade-level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability, using appropriate assessments, consistent with 34 CFR 300.304 and 300.305; . . ."

Determination of Eligibility

Along with the identification options, the regulations include specific eligibility criteria for each disability category including SLD. In order to find a student eligible for special education and related services, the specific criteria must be satisfied. According to the regulations, SLD do not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of intellectual disabilities, or of emotional disabilities. However, it is possible for a team to conclude that SLD is the primary disability, even if the child has exclusionary disability, such as a visual impairment or other health impairment. The regulations state that the exclusionary factors cannot be the primary cause of the disability (8 VAC 20-81-80.T.2.c).

When determining special education eligibility and if the student is found eligible, the IEP team should consider and address educational needs that significantly impact the child's progress in the general education curriculum. For more information, see the document State Regulations, Laws and Policies at http://www.doe.virginia.gov/special_ed/regulations/index.shtml.

If the student is not eligible for special education services, the local education agency might want to consider eligibility under Section 504 of the Rehabilitation Act of 1973 (See http://www.doe.virginia.gov/federal_programs/civil_rights/index.shtml for more information).

Instructional Planning: The Individualized Education Program (IEP) Development

The IDEA, 2004 requires that each student who receives special education and related services have an Individualized Education Program (IEP). The IEP specifies the student's individual educational needs and the special education and related services necessary to meet those needs. The components of an IEP include the following:

Present Level of Academic and Functional Performance (PLOP)

The PLOP is a narrative description of the student's present levels of academic achievement and functional performance. A statement of how the disability affects the student's participation and progress in the general curriculum and other activities must be included in the narrative. The PLOP is based on current information about the student and it must provide enough detail to allow the development of goals and the consideration of objectives/benchmarks for the individual student. The PLOP lays the foundation for the IEP. More information on how to write an IEP can be found at http://www.doe.virginia.gov/special_ed/iep_instruct_svcs/iep/index.shtml.

Goals

The goals serve as a road map for the upcoming year. They should be achievable in one year. Goals must be meaningful and measurable. They must reflect the areas of needs of the student.

When developing a Standards-Based IEP, the PLOP and some of the annual goals are aligned with and based on the state's grade-level Standards of Learning (SOL), such as the standards for mathematics and English. Other goals might address the student's functional performance and behavioral needs. For the guidance document on developing a standards-based IEP, training modules, sample goal and sample IEPs, see the Web site: http://www.doe.virginia.gov/special_ed/iep_instruct_svcs/stds-based_iep/index.shtml.

For assistance in the development of annual goals based on the state's Standards of Learning and to access other curriculum-based resources, go to: http://www.doe.virginia.gov/testing/sol/standards_docs/index.shtml.

Progress Reports

A student's progress on each IEP goal must be monitored and regularly reported to the parents.

- **Monitor:** The IEP team chooses the most appropriate way to measure and monitor student progress. Measures that allow frequent data collection are preferred because they provide a better representation of the student's true progress. Some examples of measures of progress monitoring tools are: teacher-made tests, rubrics, observations, curriculum-based measurements, and Standards of Learning practice tests.
- **Reporting:** The Virginia Regulations require that progress reports on IEP goals must be provided as often as general education students receive progress reports including report cards and interims.

Special Education, Related Services and Supplementary Aids and Services

The IEP team must list the special education related services and supplementary aids and services that will be provided to the student. The projected dates for the beginning of services and the anticipated frequency, location, and duration of those services must be included in the IEP.

Related services are defined as services the student needs to benefit from special education. Common examples include speech and language pathology, occupational therapy, interpreting services and psychological services.

Supplementary aids and services are additional supports or services (other than special education and related services) that a child needs to be educated with nondisabled children to the maximum extent appropriate. The supplementary aids and services could include modifications to the curriculum or classroom supports and accommodations. The IEP team determines the accommodations and/or modifications the student will need to make progress towards the annual goals.

Accommodations

While accommodations are not defined in the state or federal regulations, accommodations are considered to be “changes to the delivery of instruction, method of student performance, or method of assessment that do not significantly change the content or conceptual difficulty level of the curriculum” (Miller, 2009, p. 458).

Examples of accommodations for students with SLD include:

- **Presentation:** review prerequisite skills before introducing new material, use of mnemonics strategy, cooperative learning groups, modeling procedures, screen reading software, and word processors
- **Setting:** Provide preferential seating, provide special lighting or acoustics

- **Response:** provide plenty of space for answers, list multiple choice options in vertical rather than horizontal format, oral verses written response, voice input and output software
- **Schedule:** Administer a test in several timed sessions or over several days, provide a day planner

When determining accommodations, assistive technology (AT) must be considered. This is especially important for students with print disabilities. These students may need access to instructional materials in alternate formats such as digital text.

When considering whether AT is required, the IEP team may refer to the [Virginia Assistive Technology Resource Guide](#) to facilitate the discussions about goals and objectives, areas of difficulty, and whether AT devices or services or accessible instructional materials in alternate formats are needed. The Virginia Accessible Instructional Materials Center (AIM-VA) will produce and deliver accessible instructional materials for Local Educational Agencies (LEAs) in Virginia who have students with an IEP qualifying for the AIM-VA services. For information concerning AIM-VA eligibility requirements and options for those who need assistive technology, but do not qualify, contact <http://kihd.gmu.edu/aim/>. Additional information on AT is provided in the AT section of this document.

Modifications

The term “modification” is also not defined in state and federal regulations. However, modifications are generally understood to be adaptations that “involve changes to the curricular content, changes to the conceptual difficulty level of the curriculum, or changes to the objectives and methodology. Adaptations typically involve more significant changes or modifications to the instructional process, than do accommodations” (Miller, 2009, p. 466).

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Examples of modifications include:

- *change in what is being taught:* textbooks will be based upon the 8th-grade curriculum but at his/her independent reading level (4th grade), ability-determined reading groups, and
- *change in what is expected from the student.* Making an assignment easier so the student is not doing the same level of work, curriculum overlapping (e.g., class learning addition and individual student counting blocks), differentiated lesson plans, tiered assignments (e.g., write a story versus write sentences)

Accommodations and modifications are procedures, services, techniques that minimize the student's disability to meet the demands of the curriculum. It is not assumed that the curriculum is watered down in any way. Thus, accommodations and modifications are adjustments to help the student bypass the difficulties that impede his/her learning and performance. Accommodations and modifications "level the playing field" for students with SLD. (Cohen, Gregg, & Deng, 2005; Elbaum, 2007; Fuchs, Fuchs, Capizzi, 2005; Gregg & Nelson, 2010; Lee, Wehmeyer, Soukup, & Palmer, 2010; Lindstrom, 2007; Meloy, Deville, & Frisbie, 2002; Miller, 2009; Steele, 2002; Stenhoff & Davey, 2008; Wise, 2010).

Participation in State and District Accountability System

All students, including those with disabilities, are required to participate in the state accountability system. The IEP team must determine which state and divisionwide assessments provide the best opportunities for students to demonstrate what they know and are able to do. This decision is based on a number of factors, including the type of instruction the student has received and his/her response to instruction, the student's instructional level compared to the instructional level of typically developing peers, and the time it takes for the student to make progress toward grade-level content standards. A statement of any

accommodations or modifications necessary for the student to participate in the assessments must be included in the IEP. Please see the document, Procedures for Participation of Students with Disabilities in Virginia's Accountability Systems, at: http://www.doe.virginia.gov/testing/participation/participation_va_accountability_system.pdf.

If the IEP team determines that the student must take an alternate assessment, a statement of (1) why the student cannot participate in the regular assessment; (2) why the alternate selected is appropriate; and (3) how the student's nonparticipation in the assessment will affect the student's course of studies and graduation must be included in the IEP. For more information see the Website: http://www.doe.virginia.gov/testing/alternative_assessments/index.shtml

Placement and the Least Restrictive Environment

Where, or the location in which, a student with disabilities receives his or her education is the individual's placement. This placement for the delivery of special education services is determined based on the needs of the student as defined by the present levels of performance, IEP goals and services needed for the student to make educational progress. School divisions must offer a continuum of placement options starting from least restrictive to most restrictive. The continuum includes:

- General education classroom (inclusion)²
- Special classes
- A combination of general and special classes
- Special schools
- Home instruction
- Instruction in hospitals and institutions

² Inclusion: The concept of inclusion is based on the philosophy that all students, regardless of ability and other differences should be educated with age-appropriate peers and have access to the general curriculum.

Guidelines for Educating Students with Specific Learning Disabilities (SLD)

IDEA mandates that students with disabilities should only be served in separate classrooms when their educational needs cannot be addressed satisfactorily in the general education classroom with supplementary aids and services, due to the nature of severity of the disability. In some cases, students with SLD may need specialized instruction that cannot be provided in the general education classroom and the student may need to receive those services in a separate setting.

A student with SLD may also receive services in one or more environments. For example, a student may be placed in the general education classroom for mathematics, but may receive special education services in a separate classroom for reading. Research indicates that students with SLD can make significant gains when provided with high quality instruction in part-time, separate settings (Gersten et al., 2009; McLeskey & Waldron, 2011; Vellutino, Scanlon, Small, & Fanuele, 2006). Thus, the extent that a student with SLD should be placed in general education classrooms will depend on his/her individual needs as delineated by the IEP.

Guidelines for Educating Students with Specific Learning Disabilities

Providing an Effective Education

Goals of Education and Intervention

The goal of education is to provide students with opportunities to acquire knowledge, skills, and competencies that lead to a student's independence and success in life. Education is the key that unlocks the potential of a student and prepares him/her to successfully live in a diverse society. The IDEA ensures that all students with disabilities have this opportunity. To accomplish the goal of education, interventions used to instruct students with SLD must be based on assessment results and research-based instruction. In the following sections, assessment types and research-based practices are discussed.³

Assessment

Assessment for intervention must include data-based documentation of a student's performance. To obtain more efficient and useful information, multiple measures should be used. It is important that assessments are sensitive to the student's culture and linguistic background. Assessment allows teachers the ability to differentiate instruction so it is more responsive to a student's needs. Assessment for intervention must include diagnosis, progress monitoring and summative outcome.

- **Diagnostic Assessments** (formative assessment) help identify a student's specific strengths and weaknesses for the purpose of planning instruction and identifying appropriate interventions (e.g., universal screener).
- **Progress Monitoring Assessment** refers to data gathering during instruction to determine the effectiveness of that instruction as evidenced by student progress and to help the teacher make changes if necessary.

- **Summative Assessment** refers to data gathered at the end of the year to determine the appropriateness of instruction and student year-end performance.

Types of Assessment Instruments

Standardized Tests

Standardized tests are formal measures that compare a student's performance to that of others or to a specific mastery criterion. Standardized tests require strict procedures in administration, scoring, and interpretation. Information from these tests is useful because it compares the individual student's skills with peers from the same grade and age and it identifies the student's strengths and weaknesses. They can be used as summative measures of a student's performance (Mercer & Pullen, 2009).

There are also disadvantages to formal standardized tests. For example, they lack the specificity needed for planning daily instruction and test results may be influenced by the temperament of the student and the examiner and may not be a true measure of the student achievement. These tests are not useful as pre- and post-tests or for planning instructions and interventions. In most cases, standardized assessments are used in the eligibility process.

The following are examples of standardized assessment tools often used with students with SLD:

- **Woodcock-Johnson-III Tests of Achievement (WJ-III):** These tests assess five areas of the curriculum: oral language, reading, mathematics, written language, and academic knowledge.
- **Woodcock-Johnson III Diagnostic Reading Battery:** This is an individual test used to pinpoint strengths and weaknesses in reading skills (for ages 5-0 to 75+).

³ Disclaimer: The identification of any products of private vendors or links to Web sites in these *Guidelines* are only for the purpose of providing examples and information and does not constitute the Department's endorsement of such products or practices. Selection of products and implementation of practices should be based on student needs, local regulations and policies.

- **Wechsler Intelligence Scale for Children, 4th edition (WISC-IV):** It is the individual test most used to assess general intellectual performance of children, ages 6-0 to 16-11.
- **Comprehensive Test of Phonological Processing (CTOPP):** It assesses three types of phonological abilities: phonological awareness, phonological memory, and rapid naming. It is designed for students ages 5-0 to 24-11.
- **Clinical Evaluation of Language Fundamentals–Revised (CELF-R):** This test evaluates oral language skills of students in grades K-12.
- **Test of Written Language–3 (TOWL-3):** This test assesses written language skills in ages 7-0 to 18-0.
- **Kaufman Test of Educational Achievement–Normative Upgrade:** It is an individual achievement test that measures students’ strengths and weaknesses in oral language, reading, mathematics, and written language.

This list contains some of the commonly used assessment instruments and is not intended to be all inclusive. A variety of other useful assessment instruments are available, and according to the regulations should be selected and administered by trained and knowledgeable personnel in accordance with the instruction provided by the producer of the assessments to ensure validity and reliability.

Non-standardized Assessment

Non-standardized assessments include any informal method of gathering data about a student. Non-standardized informal tools measure a student’s achievement on ordinary materials and activities related to the curriculum. These assessment tools better reflect the skills of the student because they provide an accurate and authentic assessment of a student’s ability across various settings. They are related directly to the classroom. Informal

measures can be frequently given to monitor student progress and to obtain a summative evaluation of a student’s achievement. These measures can be used to document progress towards mastery of goals and objectives. Examples of informal measures:

- Portfolio assessment
- Curriculum-based assessment (CBA)
- Curriculum-based measurement (CBM)
- Informal arithmetic tests
- Informal Reading Inventory
- Criterion-referenced tests
- Direct observation
- Analysis of mathematical errors
- Dynamic assessment
- Work samples (writing samples, projects)

Research-Based Instruction *(Evidence-Based Practices)⁴*

Teachers of students with an SLD must be knowledgeable of effective, evidence-based instructional practices. Evidence-based practices are defined by many researchers as strategies, processes, and curricula for which information exists to support adoption and sustained use. In order for an educational practice or instructional practice to be evidence based, it must be evaluated using scientifically-based research.

According to the regulations, scientifically-based research is a method for conducting research that ensures the application of rigorous, systematic and objective procedures are used to obtain valid knowledge relevant to instruction. Scientifically-

⁴ In this document, the terms research-based, evidence-based and scientifically-based will be used interchangeably.

based instruction must be derived from research that relies on measurements or observational methods that provide reliable and valid data across evaluators and observers, across multiple measurements and observations, and across studies by the same or different investigators.

To give educators and researchers fair and useful information about the strength of the evidence supporting a variety of programs available for students in grades K-12, free Web sites are listed below.

- The Best Evidence Encyclopedia at www.bestevidence.org is a free Web site created by the Johns Hopkins University School of Education's Center for Data-Driven Reform in Education (CDDRE) under funding from the Institute of Education Sciences, U.S. Department of Education provides summaries of scientific reviews produced by many authors and organizations, as well as links to the full texts of each review.
- What Works Clearinghouse at <http://ies.ed.gov/ncee/wwc/topics.aspx>, also sponsored by the Institute of Education Sciences, provides a review of a wide range of different programs, products, practices, and policies in education for effectiveness of interventions.
- The Promising Practices Network Web site, (<http://www.promisingpractices.net>) highlights programs and practices that credible research indicates are effective in improving outcomes for children, youth, and families.

Research-Based Instructional Strategies for Students with SLD

READING STRATEGIES

Learning to read is one of the most important academic achievements for students with and without SLD. Educators agree that effective reading instruction should include elements that teach five critical areas of literacy: (a) phonemic awareness, (b) phonics, (c) fluency, (d) vocabulary, and (e) text comprehension (Reading Panel, 2000). These skills are also aligned with the state's Standards of Learning and should be addressed in the general education curriculum. Most experts agree that reading skills instruction should be systematic and explicit (Reading Panel, 2000; Ritchey, 2011; Vaughn & Linan-Thompson, 2003).

Systematic and explicit instruction is a process in which the teacher:

- tells students specifically what strategies they are going to learn,
- tells them why it is important for them to learn the strategies,
- models how to use the strategies by thinking aloud with a text,
- provides guided practice with feedback so that students have opportunities to practice using the strategies,
- provides independent practice using the strategies,
- discusses with students when and where they should apply the strategies when they read, and
- shares with the students, the importance of having the will to use the strategies along with the skill. (Kamil, 2008)

In this section, scientifically-based/evidence-based instruction will be presented on three reading components: decoding/word identification, fluency, and comprehension. In the identification of SLD, the reading areas of concern include basic reading skills, decoding, reading comprehension and reading fluency. Students with SLD may have a deficit in one or more of these areas. Each area is addressed below.

Basic Reading Skills

Decoding and Word Recognition: There is evidence that the primary deficit of struggling readers is in the area of phonological processing skills. These deficits can be corrected (or at least improved) with intense, systematic, explicit instruction (Lyon, Shaywitz, & Shaywitz, 2003; Vellutino, Fletcher, Snowling, & Scanlon, 2004).

Research-based approaches to teaching decoding skills to students with SLD include the systematic explicit instruction of linguistic awareness (i.e., phonological, orthographic, and morphological awareness) and phonics skills (Berninger & Wolf, 2009; Calhoun, 2005; Calhoun, Sandow, & Hunter, 2010; Torgesen, Wagner, Rashotte, Herron, & Lindamood, 2010). It is important that the student understands the alphabetic principle (i.e., phonics) to be able to acquire proficiency in phonological decoding (Vellutino et al., 2004).

Phonological awareness can be taught and its explicit teaching is important to beginning reading and spelling (Berninger & Wolf, 2009). To help students hear the sounds in words, teachers and parents can say the words very slowly (stretched segmenting), holding each sound for about one second, plus using hand and body cues to make sounds in words more concrete (O'Connor, 2007).

The following is a suggested sequence for intervention in phonological awareness training: (1) rhyming tasks, (2) syllable identification tasks, (3) segmenting and blending tasks, and (4) phoneme manipulation tasks (e.g., add or delete sounds such as in spit, split, and spilt).

In addition to phonological awareness, students must have knowledge of letter sound correspondence (i.e., phonics). Explicit phonics instruction, an organized program in which letter sound correspondence is taught systematically, is crucial in learning to read and spell in alphabetic languages. Although the literature has not identified the “best” phonics program, researchers have pointed to the advantages of systematic phonics instruction. The following are recommendations for the teaching of phonics based on current evidence (Berninger & Wolf, 2009; O’Connors, 2007):

- (1) Avoid alphabetical order and separate the most confusable pair of letters (e.g., b and d);
- (2) Teach the short vowel sounds first before long vowels to reduce confusability and to demonstrate the rule-based nature of long vowels (e.g., sit – site – sight);
- (3) Start teaching letter sounds as soon as possible;
- (4) Teach students to blend letter sounds to decode words; and
- (5) Use the following sequence organized by the level of difficulty in teaching decoding: CVC (cat), the CVCC (hand), CCVC (clap), CCVCC (craft), CCCVC (splat).

Instruction should start with simple unambiguous words with short vowels and move to phonograms, diphthongs (two vowels = one new sound), vowel digraphs (two vowels = sound corresponds to one vowel in letter combination) or two consonant digraphs (e.g., ch) to two-syllable words with two consonants in the middle position and then to one consonant in the medial position.

Decoding practice must be provided in many different ways (e.g., decoding of a list of words and of text) to help students transfer their skills to different situations to become good readers. Students with SLD also benefit from learning to recognize syllable patterns (e.g., closed syllables), spelling patterns, and affixes (prefixes and suffixes) to decode written words

accurately and quickly. Research supports the need to teach students with and without SLD orthographic (how the letters are organized to form words) and morphological (word parts that signal meaning and grammar) awareness as skills relevant to learning to read (Berninger & Wolf, 2009).

The International Dyslexia Association (IDA) has created a matrix of programs that include structured, explicit, and systematic instruction in the areas of phonological skills, phonics, word recognition and other areas of spoken and written language. These programs have strong evidence-based success. The Matrix of Multisensory Structured Language Programs can be found at <http://www.interdys.org/ewebeditpro5/upload/MSL2007finalR1.pdf>. Additional reading resources are located on the VDOE Web site at <http://www.doe.virginia.gov/instruction/english/index.shtml>.

Reading Fluency

Successful readers identify most of the words in a text automatically, allowing them to focus on comprehension and other higher order processes (e.g., inference). Students with reading disabilities read more slowly, with effort and with less fluency (National Reading Panel, 2000; Roberts, Torgesen, Boardman, & Scammacca, 2008). Fluency is the rate of words read per minute (e.g., 150 words read per minute). Oral reading fluency is the ability to read with accuracy, appropriate expression (i.e., intonation, stress, and pause), and rate. Fluency is important because it provides a link between word recognition and comprehension. Fluent readers are able to focus more on comprehension rather than on decoding, and are therefore better able to analyze, interpret, and draw conclusion from text. The most effective method to increase fluency is repeated readings (Berninger & Wolf, 2009). The followings are evidence-based fluency interventions:

- Repeated readings of the same passage
- Vocabulary instruction (Words that are useful to know and are likely to appear in a variety of settings may have the widest impact.)

- Choral reading
- Partner reading
- Tape-assisted reading
- Readers' theater

For more information on reading fluency, visit the following Web sites:

- http://reading.uoregon.edu/big_ideas/flu/flu_teach.php
- <http://www.auburn.edu/~murraba/fluency.html>
- <http://www.fluentreader.org/index.html>
- <http://www.k12reader.com/reading-fluency-and-instruction/>
- <http://www.fcrr.org/for-educators/sca.asp>

Reading Comprehension

The ability to excerpt and create meaning from text is the purpose of reading. Reading comprehension requires prior knowledge and the reader's connection with the text. It involves a range of language and cognitive processes and skills. Some students with SLD struggle to construct meaning from text, make inferences, monitor their reading, draw conclusions, recall and summarize information (Roberts et al., 2008; Watson et al., 2012). Scientifically-based strategies for reading comprehension include the following:

Direct instruction on Background Knowledge:

Activating prior knowledge helps the student make connections between what he/she already knows and what he/she is reading. Previewing headings or key concepts with the student can help make these connections.

Graphic Organizers: Graphic organizers are visual and spatial displays that facilitate teaching and learning by organizing key concepts. Graphic organizers help students create an organized schema and connect their prior knowledge to the text they are reading. Graphic organizers include semantic and concept maps, Venn diagrams, and story maps.

- **Concept maps** are usually used to represent concepts or ideas connected by lines showing the semantic relationship of concepts. As an instructional tool, concept maps help engage students in the learning process and show an organized connection among ideas and concepts (Caldwell & Leslie, 2005; Gurlitt & Renkl, 2010; Jitendra & Garjria, 2011).
- **Venn diagrams** help view independent and interrelated aspects of concepts. It is a widely used graphic organizer for compare/contrast assignments. Differences are written down in the outer parts of the Venn circles while similarities are recorded in the overlapping sections (Dean & Grierson, 2005; Hadaway & Young, 1994; Huber, 2005).
- **Story Mapping** is a graphic organizer with story elements as headings. Knowledge of story structure facilitates comprehension of narratives (i.e., stories) because it helps the student understand who, where, what, when, and why in a story (Idol, 1987; Stagliano, & Boon, 2009; Stetter & Hughes, 2010; Trabasso & Bouchard, 2002).

Text Structure: Text Structure is the organization of text. Knowledge of ways in which text is organized helps comprehension and retrieval of information. Explicit instruction of text structure benefits students' comprehension of both narrative and expository texts (Trabasso & Bouchard, 2002; Westby, Culatt, Lawrence, & Hall-Kenyon, 2010; Williams, 2005; Williams et al., 2007).

Finding the Main Idea: The main idea is the "gist" of a text. It is the central point the author tries to make. When students are able to identify the main idea, they are more likely to draw inferences, to read critically, to summarize information, and to remember what they read (Watson et al., 2012). One scientifically-based/evidence-based strategy is the Paraphrasing Strategy, developed by Schumaker, Denton, and Deshler (1994) for use with expository text. Paraphrasing requires the student to use his/her own words to translate the main idea. For more information on the Paraphrasing Strategy see the

Web sites <http://kucrl.org/sim/> and <http://www.ttaonline.org/>.

Summarization: Summarization is the ability to tell what the text is about in a concise manner. Summarization requires students to make inferences and then synthesize the information. Summarizing is the ability to tell a lot of information using a few words (Schumaker, Knight, & Deshler, 2007).

The National Institute for Literacy (2007) lists four steps for rule-governed summarizing strategy:

- Identify and/or formulate main ideas,
- Connect the main ideas,
- Identify and delete redundancies, and
- Restate the main ideas and connections using different words and phrasings (p. 23).

Other strategies that address the specific needs of students with reading comprehension deficits include:

Question-Answer Relationships Strategy (QARs)

(**Raphael, 1986**): The QARs Strategy teaches students the types of questions that are asked and how to use this information to guide them in answering questions. It helps students become aware of the importance of considering both the text and their prior knowledge when answering questions.

There are four categories of questions:

1. Right there (textually explicit): The answer is in the text.
2. Think and search (textually implicit): The answer is in the story – answer comes from different parts of the story.
3. The author and me: The answer is not in the story. Connect what the author says in text with prior knowledge.

4. On my own (implicit): The answer is not in the story. One can answer the question without reading the story.

For more information, see the Web site http://www.readingrockets.org/strategies/question_answer_relationship/.

Self-Questioning Strategies: Students need to be taught to stop and question themselves before, during, and after reading. One example is the Self-Questioning strategy developed by Schumaker, Deshler, Nolan, and Alley (1994). Students are taught to ask seven types of questions: who, what, when, where, why, which, and how. For more information, visit <http://kucrl.org/sim>.

Reciprocal Teaching: It was developed by Palinscar and Brown (1984). This is a multicomponent strategy that includes four strategies. These strategies are: Predicting, Clarifying, Questioning and Summarizing. To find an overview of how to use reciprocal teaching in the classroom, visit the Reading Rockets site at http://www.readingrockets.org/strategies/reciprocal_teaching/.

Collaborative Strategic Reading (CSR): This is also a multicomponent strategy in which students learn four strategies: Previewing (i.e., brainstorming and predicting), Click and Clunk (i.e., comprehension monitoring and clarifying), Getting the gist (i.e., summarization), and Wrap-Up (i.e., self-questioning and summarization) (Vaughn & Bos, 2012). A 2011 research study by the Institute of Education Sciences on the use of CSR and its impact on student achievement can be found at http://ies.ed.gov/ncee/edlabs/regions/southwest/pdf/REL_20114001.pdf.

For additional resources to address reading comprehension skills, What Works Clearinghouse (WWC) provides the following practice guides:

- *Improving Reading Comprehension in Kindergarten Through 3rd Grade,*
- *Effective Literacy and English Language Instruction for English Learners in the Elementary Grades,*

- *Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Elementary Grades.*

They can be found at <http://ies.ed.gov/ncee/wwc>.

MATHEMATICS STRATEGIES

Students can be identified as having SLD in two areas of mathematics: computation and problem solving. Students with mathematics learning disabilities have poor understanding of number concept and the number system and skills that are the foundation of higher order mathematical skills. They have difficulty counting, understanding abstract concepts of time, temperature, speed and directions, remembering computation facts, estimating, solving word problems, among other mathematical difficulties (Bryant D., Bryant, & Hammill, 2000; Cawley, Parmar, Lucas-Fusco, Kilian, & Foley, 2007; Geary, 2004; 2007; Mercer & Pullen 2009; Watson & Gable, in press).

Effective instruction for students with SLD in mathematics should include the following principles: (1) type of examples (e.g., real-world problems), (2) explicitness, and (3) parsimony (i. e, economical use of time and resources) (Woodward, 1991). Curriculum should be organized so that instruction of specific skills and concepts are interwoven around critical concepts. Evidence-based instructional strategies for mathematics skills are discussed below.

Computational Skills

Since it takes time and practice for students to master declarative knowledge related to computational skills, teachers should provide conceptual knowledge while the students practice the declarative knowledge of the computational skill. Conceptual knowledge should be taught using the concrete-representational-abstract (CRA) sequence. However, when providing explicit instruction using manipulatives, the numerical representation of the problem should be also presented to the student.

When developing procedural knowledge in computation, cognitive strategies should be used to facilitate the step-by-step process. Strategies include the Four Bs strategy for solving subtraction problems with regrouping, key words serving as cues for the steps of long division problems and mnemonics device such as RENAME used as cues for addition with regrouping (Mercer & Mercer, 2010; Mercer & Pullen, 2009; Miller, Stringfellow, Kaffar, Ferreira, & Manel, 2011).

The following sites provide additional mathematics strategies:

Interventions for Students Struggling in Reading and Mathematics at
<http://www.centeroninstruction.org/>
<http://www.nelson.com/mathfocus/grade3/parent/tryout.html>
<http://www.coedu.usf.edu/main/departments/sped/mathvids/strategies/category.html#teacher>

One of the most effective ways to develop declarative knowledge of computational skills is the use of one-minute probes. Probe sheets usually consist of problems of the same skill and have more problems than the student can answer in the allotted time. The following Web site is helpful when creating computational skills probe sheets:

<http://www.interventioncentral.org>

A recent meta-analysis conducted by Gersten and colleagues (2009) identified five instructional research-based approaches to instruction and/or curriculum design:

1. Explicit instruction: Instruction must be explicit and systematic.
2. Use of heuristics: A method or strategy that exemplifies a generic approach to solve a problem.
3. Student verbalization of their mathematical reasoning: Approaches that encourage verbalization are effective for students with LD.

4. Using visual representations while solving mathematical problems: Visual representations of mathematical relationships are consistently recommended in the literature.
5. Range and sequence of examples: The selection of examples is very important when teaching concepts.

Problem Solving

Solving word problems involves several skills including reading comprehension, higher order thinking skills and calculation which are often areas of weakness for many students with SLD. Problem solving is one of the areas targeted by the National Council of Teachers of Mathematics. Strategies to address problem-solving weaknesses vary and may include the following:

Schema-Broadening Instruction: One of the approaches to word-problem solving is schema-broadening instruction, a cognitive approach. It is intermediate in generality between key word and general heuristic methods. Students are taught to recognize problems as belonging to problem types. They learn to apply solution strategies that match those schemas for the type of problem (e.g., Change schema) (Fuchs et al., 2006; Fuchs et al., 2009; Jitendra & Star, 2011; Jitendra, Star, Rodriguez, Lindell, & Someki, 2011; Montague & Jitendra, 2006). The major function of schema-based instruction is pattern or schema recognition. It uses a graphic representational technique.

Example of Vary Schema (proportion):

If it takes one gallon of gasoline to drive 42 miles, how many gallons does it take to drive 534 miles?

This type of problem, Vary Problem, involves situations that could be described as involving “IF... THEN” relationships. If one amount varies, the amount of the second thing changes in a fixed way (Jitendra & Star, 2011).

Solve It!: A second research-based cognitive strategy is the Solve It! It incorporates self-instruction, self-monitoring, and self-questioning. Solve It! is a comprehensive strategic routine that includes seven cognitive processes (read, paraphrase, visualize, hypothesize, estimate, compute, and check) and self-regulation strategies (e.g., self-instruction) (Montague, Enders, & Dietz, 2011). More information on the Solve It! strategy can be found at:

<http://sites.education.miami.edu/solveit/>

Other Mathematics Areas

Other mathematical skills students with SLD must acquire and that are aligned with Virginia's Standards of Learning are algebra and measurement skills.

Algebra

Algebra is considered a gateway to abstract thinking. One way to help students understand abstract concepts is to transform them into concrete manipulations and pictorial representations. The concrete-representational-abstraction approach has been validated in the research as an effective strategy for promoting abstract concepts. The use of manipulatives encourages the development of conceptual understanding and procedural fluency (Beaudoin & Johnston, 2011; Strickland & Maccini, 2010; Witzel, Mercer, & Miller, 2003). For example, Beaudoin and Johnston (2011) used a multisensory approach by having students cut out and physically move a parabola to demonstrate transformations of quadratic functions.

There are also cognitive strategies that take the form of self-instruction. An example of a cognitive strategy is the mnemonics STAR strategy (Maccini & Hughes, 2000). Additional information on the STAR strategy can be found at:

http://wikis.lib.ncsu.edu/index.php?title=S.T.A.R.Strategy_for_Problem_Solving&oldid=47826.

Also, the use of graphic organizers to solve systems of linear equations is a promising strategy for students with SLD who struggle with algebra.

Measurement

Measurement includes weight, distance, quantity, length, money, and time. Measurement can be taught by using applied problems, for example, using real clocks to tell time or using a teaspoon to follow a recipe. Students must learn the vocabulary and concepts for each unit of measurement (e.g., distance) (Butler, Miler, Crehan, Babbitt, & Pierce, 2003; Vaughn & Bos, 2012).

For measurement activities, visit

<http://www.education.com/activity/measurement/>,
<http://www.k-5mathteachingresources.com>, and
<http://www.teachervision.fen.com/measurement/teacher-resources/34507.html>.

Geometry

Geometry resources can be found at

<http://www.mathsisfun.com/geometry/index.html>,
<http://www.321know.com/geo.htm>, and
http://www.education.com/worksheets/geometry/?cid=55000.0093530183&s_kwcid=TC|8363|geometry%20worksheets||S|b|15585359335&gclid=CNeYlf-sOrYCFUdU4AodnlUAcg.

Additional mathematics instructional resources including the standards, curriculum frameworks, enhanced scope and sequence lesson plans, test blueprints and released tests, other instructional resources are located on the VDOE Web site at

<http://www.doe.virginia.gov/instruction/mathematics/index.shtml>.

WRITTEN LANGUAGE STRATEGIES

There are three written language skills: (1) handwriting, (2) spelling, and (3) written expression. Each skill requires specific abilities; however, these skills are interconnected. Although one skill influences the other, students may have problems in one area but not in the others, such as the case of having deficits in handwriting only, but not in spelling or written expression.

Handwriting

Students with dysgraphia have extreme difficulties with handwriting. These are some of the characteristics they may exhibit: poor letter formation; letters that are too large, too small, or inconsistent in size; incorrect use of capital and lower case letters; letters that are crowded and cramped; incorrect or inconsistent slant of cursive letters; lack of fluency in writing; incomplete words or missing words. However, with direct, explicit instruction of letter formation and guided practice, these problems can be improved. The use of a multisensory approach is recommended. Students should make associations among visual letters, auditory sounds or letter names, and kinesthetic touch using a writing tool (Berninger & Wolf, 2009; Vaughn & Bos, 2012).

When to teach manuscript versus cursive will depend on the age of the student and on the school curriculum. The style of printing letters recommended for students with dysgraphia is the one that uses a continuous stroke, because it facilitates writing fluency. It also requires the student to lift the pencil fewer times which reduces confusions and reversals. It also helps prepare the student to cursive.

Handwriting is generally not taught in alphabetic order. Letters should be introduced according to stroke formation. Lower case letters should be taught first. Students with dysgraphia need many opportunities to practice the letters before writing a word, phrase, or sentence. Time should be spent in reviewing the learned letters before introducing new letters. Consistent practice and reinforcements are necessary to the instruction of handwriting (Berninger & Wolf, 2009).⁵

For more information on handwriting, visit

<http://education.jhu.edu/PD/newhorizons/Better/articles/Winter2011.html>

⁵ For students with severe dysgraphia, the IEP team should consider keyboarding and other assistive technology devices

Spelling

Spelling requires knowledge of sound sequences, letter patterns, and morphemes (Base words and affixes – e.g., un-comfort-able). A multisensory approach to spelling and reading remediation is recommended for students with SLD, especially for students with dyslexia. While spelling a word, students should be taught to “repeat the word, listen to the sounds in sequence, think of each vowel sound in the word, associate it with the letter or letters that spell the vowel sound, repeat the word, recall the sounds of words in sequence, and spell the whole word” (Berninger & Wold, 2009, p. 88).

Instruction in spelling should follow the sequence of phonics elements. Regular words, usually short vowel words, for reading and spelling should be taught first. The unambiguous sound-symbol relationships (usually short vowel words) should follow, and then ambiguous words for spelling (not for reading) such as the words pale and pail. Each particular spelling unit (e.g., oo words like foot, look, choose) should be introduced separately. Practice in perception of sounds is needed before student is introduced to another vowel unit, such as oa.

Teaching students spelling using syllable types is also important. For example, in a closed syllable (consonant-vowel-consonant) the vowel will be short. In addition, teach students that vowel sounds and spellings are often dependent on their placement in the word. Example: Use “ck” for /k/, “dge for /j/ and “tch” for /ch/ at the end of a one-syllable word after one short vowel (e.g., sack, edge, and match). The use of spelling rules is also advantageous. For example, the rule that there are only three consistent spelling rules for adding suffixes to one-syllable words: the doubling rule – running, the silent e rule – liked, and the y rule – prettier (Berninger & Wolf, 2009).

See the following Web sites for more resources on spelling rules and syllable patterns:

http://www.dyslexia.org/spelling_rules.shtml

<http://server.riverdale.k12.or.us/~bblack/spelrul.htm>

http://homepage.smc.edu/reading_lab/

[basic_spelling_rules.htm](http://homepage.smc.edu/reading_lab/basic_spelling_rules.htm)

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<http://www.readingrockets.org/article/22366/>
<http://www.wayne.k12.ut.us/webpages/ltorgerson/spelling.cfm?subpage=1182319>
<http://www.fcrr.org/for-educators/sca.asp>
<http://www.fcrr.org/curriculum/PDF/G4-5/45APPartTwo.pdf>
http://readingteachersplanbook.com/images/Syllable_Patterns.pdf
<http://www.readingrockets.org/article/28653/>

The following are examples of approaches to teaching spelling:

The Five-Step Word Study Strategy: Students are required to learn and rehearse the following five steps. They have to practice with the teacher and then alone. The steps are:

1. Say the word.
2. Write and say the word.
3. Check the word.
4. Trace and say the word.
5. Write the word from memory and check.
6. Repeat the first five steps.

Gillingham and Stillman Approach: It is a multisensory approach utilizing the following procedures:

1. **Echo speech:** The teacher says the word very slowly and distinctly and students repeat the word after the teacher.
2. **Oral spelling:** Students are asked what sound is heard first. This process continues with all of the letters of the words.
3. **Written spelling:** The students are asked to locate the letter card with the first letter of the word on it and then to write the letter. They continue finding the letters; place them in order to spell the word. Students read the word.

The procedure for correcting spelling errors in the Gillingham Approach includes:

Students check their own written words and find errors. If the word is read incorrectly, the student should spell what they said and match it with the original word.

If a word is misspelled orally, the teacher writes what the student spelled and asks them to read it, or the teacher may read the original word.

For more information, see Web sites:

http://eps.schoolspecialty.com/downloads/povs/s-og_manual.pdf
http://www.gophonics.com/orton_gillingham.html
<http://ortonacademy.org/approach.php>

Written Expression

Written expression or composing requires the translation of ideas into sentences. Writing is a complex task that requires several cognitive processes (e.g., planning, working memory) and skills. It requires the ability to read, spell, know the meaning of words and understand the syntax of language to compose a written product. In addition, handwriting and spelling influence text generation. Students with SLD require explicit instruction in composition. The following are writing strategies that can enhance the knowledge of students with SLD about the writing process.

Sentence Writing Strategy: Students need to learn to write complete sentences before they can compose stories or write reports. One scientifically-based strategy is the Proficiency in the Sentence Writing Strategy, developed by Schumaker and Sheldon (1985). Students are taught formulas to write four types of sentences: simple, compound, complex, and compound-complex. For more information on the Proficiency in the Sentence Writing Strategy see the Web site <http://kucri.org/sim/>.

Sentence-Combining Strategy: Sentence-combining is a strategy that provides students practice in manipulating and rewriting simple sentences. The exercises can be cued or open, where no clue is given and students can combine many

sentences (Saddler & Asaro-Saddler, 2010; Saddler & Graham, 2005). Examples of a cued exercise:

The ice cream was delicious.
The ice cream was vanilla.
The result would be: The vanilla ice cream was delicious.
The girl fell off the chair.
She lost her balance. (because)
The result would be: The girl fell off the chair because she lost her balance.

Once students master the cued exercises, eliminate the cues.

The Self-Regulated Strategy Development

Model (SRSD): The SRSD is a cognitive writing model designed to improve a student's cognitive skills. Students are explicitly taught planning or revising strategies along with procedures for regulating the use of these strategies. When teaching the strategies, teachers must discuss the strategy and model it for the students. The students must memorize the steps of the strategy and the mnemonics for remembering them. Students should practice using the strategy with teacher support before they can use the writing strategy independently (Graham & Harris, 2005; Harris & Graham, 2005; Reid & Lienemann, 2006).

See Web sites for more information on the SRSD model:

<http://kc.vanderbilt.edu/casl/srsd.html>
<http://www.rti4success.org>
<http://ctl.uoregon.edu/pd/cf10/presentation/1023>
<http://iris.peabody.vanderbilt.edu/srs/cresource.htm>

Additional strategies to address the written expression can be found at the following link: Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High School. Graham & Perin, 2007. <http://www.all4ed.org/files/WritingNext.pdf>

Additional resources to address the written language standards can be found at <http://www.doe.virginia.gov/instruction/english/index.shtml>

SOCIAL STUDIES AND SCIENCE STRATEGIES

A student's specific learning disability may result in an adverse impact in other academic areas. For example, if a student has difficulty decoding words, the student will have problems reading the content area textbook and having the adequate vocabulary. Many of the reading comprehension and writing strategies highlighted in this guidance document are effective in promoting content area learning. Additional strategies to teach content areas are offered below.

Vocabulary

Preteaching vocabulary before introducing a unit may be helpful to students with SLD by providing them with background knowledge. Using synonyms, easily understood definitions, descriptions, or morphemic analysis (breaking a word into small linguistic units or morphemes) may be effective ways to teach students the vocabulary needed for a particular unit.

The following Web sites provide resources for vocabulary instruction:

http://reading.uoregon.edu/big_ideas/voc/voc_skills_goals.php
<http://www.keystoliteracy.com/resources/articles/>
<http://www.readingrockets.org/article/286/>
<http://www2.ed.gov/programs/readingfirst/support/rmcfinal1.pdf>
<http://www.teachthought.com/teaching/vocabulary-instructional-strategies-marzano-6-step-process/>
<http://www.ldonline.org/article/5759/>

Mnemonics

Another strategy that is highly effective for students with SLD in all content areas is mnemonic (memory enhancing) instruction (use of key word or peg word) (Scruggs & Mastropieri, 1992; Therrien, Taylor, Hosp, Kaldenberg, & Gorsh, 2011).

Other Strategies

When introducing a new lesson, providing students with advance organizers is beneficial. Giving students outlines, semantic webs or a graphic organizer of key information can prepare students for the new concept

to be learned (Lenz, Alley, & Schumaker, 1987; Steele, 2008; Watson & Houtz, 1998, 2002).

Assessing students' prior knowledge is critical in determining how effectively students will understand and retain the information presented. If students do not have prior knowledge, background knowledge must be provided. One example of building prior knowledge is creating semantic maps by using brainstorming about a topic to generate words related to the concept (Reed, 2010; Watson & Houtz, 1998, 2002).

Content Enhancement Routines

Another effective intervention is the use of Content Enhancement Routines, a set of content enhancement tools that can be used to assist students in understanding key concepts and in remembering important information about a unit or lesson (Bulgren, Deshler, & Lenz, 2007; Deshler et al., 2001). Examples of Content Enhancement Routines are the Concept Mastery Routine (Bulgren, Schumaker, & Deshler, 2005), the Concept Comparison Routine (Bulgren, Lenz, Deshler, & Schumaker, 2002) and the Concept Anchoring Routine (Bulgren, Schumaker, & Deshler, 2003). The Cue-Do-Review is the instructional sequence to introduce each content enhancement tool. First, the student's attention is drawn to the enhancement tool, then the student is involved in the process of constructing the diagram, and lastly, the student's understanding and the effectiveness of the process is checked.

For more information on Content Enhancement Routines, see Web site: <http://www.ku-crl.org/sim/content.shtml> and <http://www.kucrl.org/images/presentations/CEoverview2005.pdf>.

Classwide Peer Tutoring (CWPT):

CWPT are peer-assisted, collaborative instructional activities that can support students' learning through peer tutoring. Students have to work together on academic tasks and this collaboration encourages positive peer interactions. CWPT has been validated in elementary and secondary schools with students with and without disabilities (Greenwood & Delquadri, 1995; Kamps et al., 2008).

See http://www.specialconnections.ku.edu/?q=instruction/classwide_peer_tutoring for more information on CWPT.

SOCIAL SKILLS STRATEGIES

Some students with SLD have social skills deficits. Attempts to identify the cause of social deficits are not clear. They vary from poor language and communication skills to cognitive processing and social-emotional problem-solving difficulties. Social skills not only can affect the social domain, but also the academic performance of students with SLD (Bryan, Burstein, & Ergul, 2004; Chen, 2006; Elknins & Elknins, 2004; Kavale & Mostert, 2004; Tur-Kaspa, 2004). A number of social skills trainings have been developed. The programs include features such as direct instruction, modeling, role-play, coaching, rehearsal, shaping, prompting, and reinforcement.

Examples of social skills interventions:

- (1) The Skillstreaming series, (McGinnis & Goldstein, 1997), employs a four-part training approach—modeling, role-playing, performance feedback, and generalization—to teach essential prosocial skills to children and adolescents
- (2) I Can Problem Solve series is a school-based program that focuses on enhancing the interpersonal cognitive processes and problem-solving skills of children ages 4–12 (Shure, 2001), and
- (3) The acronym FAST to assist students in social problem solving developed by McIntoschi, Vaughn, and Bennerson (1995) (Freeze and think about the problem; Alternatives to resolve the problem; Solution (i.e., choose the alternative that will best resolve the problem); Try it) is also available.

Additional information on social skills interventions can be found at:

<http://www.nclld.org/parents-child-disabilities/social-emotional-skills/developing-social-skills-relationships>

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Important Considerations in Educational Programming

Early Intervention

Early identification and intervention for students with SLD are needed to influence the course of a student's development. Several environmental, biological, genetic, and perinatal factors may affect a student's development and place the student at risk for SLD (NJCLD 2006, p. 66).

If a learning problem or delay is identified, then priority should be given to services that can address the individual needs of the student. Services and supports must be scientifically-based, developmentally appropriate, family centered, and sensitive to cultural and linguistic differences. Services settings should be inclusive (i.e., full inclusion or reverse inclusion) because typically developing children can model developmental skills. Inclusive settings are a requirement of IDEA-04.

Early identification and intervention can provide a foundation for later learning and increase the probability of later academic success for children at risk. Early intervention can prevent later reading, writing, and mathematics deficits. Proactive practices can improve the outcomes of children at risk of SLD (O'Shaughnessy, Lane, Gresham & Beebe-Frankenberger, 2003; Steele, 2004).

For more information on LD and young children, see

<http://www.ldonline.org/article/11511/>
<http://www.asha.org/policy/TR2007-00307.htm>
<http://www.nectac.org/~pdfs/pubs/importanceofearlyintervention.pdf>.

Assistive Technology (AT)

Assistive technology device is defined as "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability." According to the Office of Special Education and Rehabilitative Services (OSERS), AT

must be provided by the school division at no cost to the family. If the IEP team decides that AT is needed for home use in order for the child to access FAPE, it must be provided by the school division at no cost to the family as well. To ensure FAPE, the need for AT must be included in the IEP and determined on a case-by-case basis, depending on the need of the student.

Effective integration of technology within the academic areas of instruction may enhance the outcomes of students with SLD and maximize their accessibility to the general education curriculum. For example, some students with SLD in written language can benefit from software that emphasizes word processing, especially from those that combine visual and auditory input. When choosing assistive technology for students with SLD, there is a need to identify the technology that addresses the student's area of identified need, supports the goal of instruction and supports student outcome. They can be compensatory/adaptive, instructional, or a combination of the two (e.g., technology-based graphic organizers and video games) (Allsopp, McHatton, & Farmer, 2010; Englert, Wu, & Zhao, 2005; Marino & Beecher, 2010; Smith & Okolo, 2010).

For more information on AT, please refer to the Virginia Assistive Technology System (VATS) at <http://www.vats.org/> and/or to the Virginia Department of Education http://www.doe.virginia.gov/special_ed/iep_instruct_svcs/assistive_technology/index.shtml.

Classroom Management

Classroom management is one of the many challenges that many teachers face today. Classroom management should be designed to attend to the needs of all students. Students function at different levels of social skills just like they function at different levels of academic achievement. Having a consistent and structured classroom can facilitate the

success of classroom management. For example, rules for the use of technology in the classroom must be in place. Technology devices (e.g., cell phone and IPAD) can become disruptions to the classroom. Teachers and students must have a clear understanding of when and how devices are appropriate. Consequences that are enforceable and reasonable for abuse must exist (Charles, 2012).

Recognizing that some students with SLD may have working memory deficits is important for classroom management. Establishing routines, procedures and structure can reduce students' working memory overload. The use of visual clues, modeling and rehearsal of desired behaviors, breaking tasks into subtasks, and giving short, simple and sequential directions can also address working memory capacity problems (Watson & Gable, 2010). Modifying the classroom environment by defining learning areas, having materials organized, accessible and available can avoid distractions and minimize interruptions which can lessen working memory overload.

Research-Based Behavior Interventions

To assist local school divisions in addressing behavior issues with students statewide, Virginia has implemented the Positive Behavioral Interventions and Supports (PBIS) initiative. The initiative is designed to help create a climate for successful teaching and learning that emphasizes student compliance with expectations and teacher's acknowledgment in ways that are meaningful to students. PBIS is a research-based approach that focuses on positive behavior and learning systems for students, teachers, and administrators.

Please see the following sites for more information:

http://www.doe.virginia.gov/support/student_conduct/monograph.pdf
<http://ttac.odu.edu/pbisva/>
<http://www.pbis.org/>

Classroom-based positive behavior interventions can facilitate the promotion of educational environments that prevent inappropriate classroom behaviors. Contingency behavior management is considered

to be a positive intervention. Two classwide group contingency behavior management strategies are the Good Behavior Game (see Embry, 2002; Donaldson, Vollmer, Krous, Downs, & Berard, 2011) and the Classwide Function-Based Intervention Team (CW-FIT) (see Kamps et al., 2011; Wills et al., 2010). When implementing the behavior management strategies, teachers must recognize and reward students for appropriate behaviors. Research indicates that group contingency interventions decrease inappropriate classroom behaviors and increase prosocial skills. However, prior to the selection and implementation of classroom management interventions, such as group contingency, school and division policy should be followed.

Additional information can be found at:

http://www.mo-case.org/fileadmin/mocase/home/2012_Fall_Conference/Handouts_2012/The_Class-wide_Function-related_Intervention_Team_program_CW-FIT.pdf
<http://www.pbis.org/common/pbisresources/presentations/B1Kamps.pdf>
<http://www.interventioncentral.org/>
<http://www.air.org/focus-area/education/?id=127>

Adolescents with SLD and Transition

Some adolescents with SLD experience difficulties in academic and other areas of their lives (e.g., friendships and mood or affect). A number of studies show that when students with disabilities transition from elementary to middle school, achievement, motivation and attitude decline for many of them. Knowing about the failure history those students have endured, motivation should be a component of intervention for adolescents with SLD along with validated interventions for academic content and transition to adult life. Adolescents with SLD often report low academic self-efficacy, mood, effort, and hope as compared to their peers without disabilities (Deshler, 2005; Forgan & Vaughn, 2000; Lackaye & Margalit, 2008; Lackaye & Margalit, Ziv, & Ziman, 2006; Lane, Carter, Pierson, & Glaeser, 2006; Matinez & Semrud-Clikeman, 2004).

According to the regulations, a student with SLD should be involved in transition planning and have an individualized transition plan no later than age 14. Transition is a “coordinated set of activities for a student with a disability that is designed within a results oriented process” (34 CFR 300.43). A student and his/her family plan his/her life after high school by identifying the student’s desired outcomes.

Promoting **self-determination** should be an important element of transition instruction. Teaching self-determining skills is considered best practice for secondary students with SLD. Self-determination includes characteristics such as assertiveness, self-advocacy, and independence. It can enable students to better manage their own lives and advocate for their needs. Factors such as instruction, knowledge, and disposition or belief are likely to predict students’ self-determination more than personal variables; thus the need to teach self-determination to adolescents with SLD (Lee et al., 2012; Madaus, Gerber, & Price, 2008; Price, Gerber, & Mulligan, 2007; Trainor, 2002, 2005).

As part of self-determination, students with SLD should be knowledgeable about the high school diploma requirements, postsecondary education and training opportunities. The impact of accommodations and/or modifications on diploma and graduation options should be discussed during the IEP meeting and be part of the transition plan. Graduation requirements can be accessed at:

<http://www.doe.virginia.gov/instruction/graduation/index.shtml>

Preparing adolescents with SLD for transition from high school to adulthood is one of the goals of instruction. Provisions of the American with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act must be carefully articulated in order for students with SLD to effectively use their rights and prerogatives under these laws upon leaving high school. Students with SLD must understand concepts such as “disability” and “reasonable accommodations” and have knowledge of their own challenges to be able to advocate for their rights and prerogatives. Please see the Virginia Department of Education’s Web sites for more

information on transition services and resources:

http://www.doe.virginia.gov/special_ed/transition_svcs/index.shtml and
http://www.doe.virginia.gov/special_ed/transition_svcs/resources.shtml.

Racial/Ethnic/Cultural/Linguistic/ Socioeconomic Diverse Students with SLD

As schools become more diverse, an increasing number of students from different racial/ethnic/cultural/ linguistic/socioeconomic backgrounds are served in special education programs. The factors that may impact students’ performance are as follows:

- The cultural gap between teachers and students
- The student disengagement due to activities, lesson, materials, techniques and curriculum that do not reflect the students’ cultural backgrounds.
- The minority students’ overrepresentation in special education may be the result of culturally inappropriate assessments. The combination of test bias and examiner cultural incompetence can produce culturally incompetent assessments.

Thus, overrepresentation occurs because of the great challenges of assessing and teaching students from diverse racial/ethnic/cultural/ linguistic/ socioeconomic backgrounds. Teachers must acquire skills and knowledge to better serve students from diverse backgrounds or more and more minority students and students living in poverty will be at risk of experiencing achievement gaps (Perez & Judson, n.d.; Skiba, Knesting, & Bush, 2002; Taylor, 2005).

One group of minority students who are often referred for SLD services is English language learners (ELLs). These students are usually referred for special education before programs are

analyzed to investigate their appropriateness in addressing their needs. Before referring students to special education, teachers should carefully look at instruction to decide if the type of instruction they are providing is culturally, linguistically and pedagogically appropriate to meet the needs of their students. Teachers should consider the number of students who are struggling in their classroom and if struggling students are receiving appropriate support individually or in small groups. Overrepresentation occurs because of the great challenges of assessing and teaching ELL students and because many characteristics of SLD mirror ELLs' characteristics.

Students who are learning a second language are also learning a second culture. Students' working memory and attention capacity are easily overloaded by the need to constantly attend to cultural and language details and nuances. For example, they must learn that "take on," "take off," "can" (verb) and can (as in trashcan) have different meanings; they must learn how to culturally and appropriately communicate with adults and peers (i.e., pragmatic language skills). When addressing issues related to language diversity, the resource, *Speech-Language Pathology Services in the Schools: Guidelines for Best Practice* at http://www.doe.virginia.gov/special_ed/disabilities/speech_language_impairment/speech_lang_pathology_services.pdf is available.

Since ELL students are not fluent in the English language, even if they exit an English as a second language program, they may encounter academic difficulties because they still do not possess the academic language proficiency to succeed in the classroom. The process of second language acquisition is influenced by many factors including, but not limited to, the student's language proficiency in the first language, attitudes towards the first and second language, and socio-cultural environment.

Although overrepresentation of ELL and other minority students in special education occurs, there are ELL and other minority students who struggle academically for reasons beyond second language acquisition or cultural background even when compared to their peers. Those students may

be identified as having SLD. Teachers and parents need to find out if those students were likely to have difficulties in their first language (and culture) and their educational history. Ideally, assessment of ELL students should be comparable in both the student's native and English language; however, this seldom happens. Without a doubt, there are many challenges in the identification of students from diverse backgrounds with specific learning disabilities, but school personnel must be able to identify as accurately as possible the nature of the student's struggles so they can provide appropriate interventions prior to referral to special education.

If a learning disability is identified, instruction for those students who have SLD must be responsive to the student's disability, language and culture. Instruction that can facilitate learning for students from diverse backgrounds with SLD include, but it is not limited to, use of visuals and graphics, repetition and paraphrase, pre-teach vocabulary, audiotape the text, having a word bank for assignments that require short answers, building lessons based on student's prior knowledge and related to the textbook readings, providing written directions along with oral directions, use more pauses within a lesson, brainstorming, "think-pair-share", and peer tutoring (Brice, Miller, & Brice, 2006; Garcia & Tyler, 2010; Klingner & Artiles, 2006; Lesaux & Harris, 2013; Reiss, 2001; Wagner, Francis, & Morris, 2005). The Virginia Department of Education's *Handbook for Educators of Students Who are English Language Learners with Suspected Disabilities* can be found at http://www.doe.virginia.gov/instruction/esl/resources/handbook_educators.pdf.

The Twice-Exceptional Students

Twice-exceptional students are those learners who meet criteria for being identified as both gifted and having a specific learning disability. These students exhibit superior intellectual abilities as well as a significant discrepancy between their level of performance in a particular area such as reading, spelling, mathematics, or written expression (King, 2005). Because they simultaneously show certain academic abilities and specific academic difficulties,

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twice-exceptional students are often referred as lazy and/or underachievers (Assouline, Nicpon, & Whiteman, 2010). These students struggle academically, not withstanding their intellectual strengths, which may lead to the development of low self-esteem and difficulties with social skills (Assouline et al., 2010; King, 2005).

It is difficult to identify students who are gifted and have a learning disability, because there is not a particular federal definition that describes how these two exceptionalities are manifested in one child. It is recommended that a comprehensive assessment be conducted that includes cognitive ability tests in the identification of twice-exceptional students. Their giftedness may mask their SLD and vice versa and may interfere with their identification. Students' academic, intellectual, and psychosocial profile must be developed to better understand their strengths and weaknesses. The description of a profile is necessary not only for identification purposes, but also for an intervention that aims at addressing their SLD, while developing the unique gifts of twice-exceptional students. Thus, these students must have access to challenges and accelerated curricula to meet their giftedness potential and to interventions that address their disability. Teachers

must consider the students' strengths (e.g., problem solving, metacognition) and problem areas (e.g., basic skills, organization). Twice-exceptional students need teachers who will provide them with emotional support, effective instruction, accommodations (e.g., calculators, spell-checkers), and skills for self-advocacy (Assouline et al., 2010; Council for Exceptional Children, 2007; Nicpon, Allmon, Sieck, & Stinson, 2011; Schultz, 2012).

For more information see the Virginia Department of Education's resource document on the identification and achievement of the twice-exceptional student at http://www.doe.virginia.gov/instruction/gifted_ed/twice_exceptional.pdf and the Colorado Department of Education's resource book, *Twice-Exceptional Students Gifted Students with Disabilities Level 1: An Introductory Resource Book* (2nd edition) that can be found at <http://www.cde.state.co.us/sites/default/files/documents/gt/download/pdf/twiceexceptionalresourcehandbook.pdf>

Other Web sites include

<http://www.learnnc.org/lp/pages/6960> and
http://www.sde.idaho.gov/site/gifted_talented/twice-exceptional/docs/2E%20Manual.pdf

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Web sites of SLD Organizations and Related SLD Areas:

About Learning Disabilities:

<http://learningdisabilities.about.com/>

Center for Development and Learning:

<http://www.cdl.org/resource-library/articles/strategies.php>

Children and Adults with Attention Deficit/
Hyperactivity Disorder:

<http://www.chadd.org/>

Council for Exceptional Children:

<http://www.cec.sped.org/>

Council for Learning Disabilities:

<http://www.cldinternational.org/>

Division for Learning Disabilities:

<http://teachingld.org/>

Kitty Petty ADD-LD Institute:

<http://www.kpinst.org>

KU Center for Research on Learning:

<http://www.kucri.org/>

Learning Ally: <https://www.learningally.org>

Learning Disabilities Association of America:

<http://www.ldanatl.org/>

LD Online: <http://www.ldonline.org/>

LD Pride Online: <http://www.ldpride.net>

Literate Nation: www.LiterateNation.org

National Center for Learning Disabilities:

<http://www.nclld.org/>

National Dissemination Center for Children with
Disabilities:

<http://nichcy.org/disability/specific/ld>

National Resource Center on ADHD:

<http://www.help4adhd.org/>

NLDline-Nonverbal Learning Disabilities:

<http://www.nldline.com>

Reading Rockets:

http://www.readingrockets.org/atoz/learning_disabilities/

Schwab Foundation for Learning:

<http://www.schwablearning.org>

Teens Health:

http://kidshealth.org/teen/diseases_conditions/learning/learning_disabilities.html

The Florida Center for Reading Research:

<http://www.fcrr.org/>

The International Dyslexia Association:

<http://www.interdys.org/>

The Meadows Center - Mathematics Institute for
Learning Disabilities and Difficulties:

<http://www.meadowscenter.org/institutes/mathematics>

U.S. Department of Education: <http://idea.ed.gov/>

U. S. Department of Education: IDEA 2004:

<http://idea.ed.gov/explore/home>

Virginia Department of Education:

http://www.doe.virginia.gov/teaching/career_resources/stepping_stones2.pdf

Virginia Council for Learning Disabilities:

<http://www.vclld.org/>

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