

Informational Paper #3

Introduction to Nonverbal Learning Disorders



MINNESOTA DEPARTMENT OF

*Children
Families &
Learning*

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This informational paper was a collaborative effort by committee, composed of selected members of the SLD Leadership group, state level disability consultants and representatives from the field with specific expertise in NVLD

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Purpose Statement

The purpose of this document is to assist the field of special education and Minnesota families to:

- *define nonverbal learning disorders (NVLD) in children;*
- *differentiate between NVLD and other learning, social/emotional and attentional problems in children;*
- *describe the evaluation process in determining eligibility for special education when nonverbal learning disorders are present;*
- *identify the role of the neurologist or clinician and other team members in the evaluation process;*
- *offer some effective educational management and intervention strategies for children who exhibit behaviors and characteristics of NVLD; and*
- *promote the understanding of the impact of social and emotional deficits of students with NVLD.*

The development of this document occurred in response to the increase in awareness, interest, questions and referrals regarding NVLD. Profiles of students will be presented to describe the range of severity of nonverbal learning disorders by the symptoms presented and specific instructional strategies designed to remediate those problems.

Although nonverbal learning disorder is a clinical diagnosis, there are no standardized medical criteria to define it. However, it is the responsibility of educational teams to seriously consider clinical diagnoses such as nonverbal learning disorders. When making special education eligibility determinations, teams must follow existing state eligibility criteria. Generally, students with the presenting problems of NVLD or a clinical diagnosis of NVLD display severe social, emotional, visual-spatial, motor and academic problems.

Please note that for the purposes of this document NVLD will be used as an acronym for nonverbal learning disorders. "Nonverbal learning disorders" are also referred to as "nonverbal learning disabilities." NLD is used to identify this disorder, as well.

Definition of Nonverbal Learning Disorders

A nonverbal learning disorder (NVLD) is a neurological condition affecting the functioning of the right hemisphere of the brain. The four major areas of functioning impacted by this condition are:

- Social functioning
 - lack of ability to comprehend non-verbal communication
 - difficulties adjusting to transitions or novel situations
 - deficits in social judgment and social interaction
- Academic functioning
 - deficits in math calculations and reading comprehension
 - difficulty with reasoning
 - trouble with specific aspects of written language (handwriting)
- Visual, spatial, organizational functioning
 - lack of image
 - poor visual recall
 - faulty spatial perceptions
 - difficulties with spatial relations
- Motor functioning
 - lack of coordination
 - severe balance problems
 - difficulties with fine graphomotor skills

NVLD is often misdiagnosed or not diagnosed until late elementary or middle school. It persists into adulthood and is often accompanied by anxiety, depression, social isolation, and relationships and employment difficulties. It can co-occur with other disabilities or conditions. (Thompson, S.C., 1997).

Nonverbal Communication and Nonverbal Learning Disorders

Nonverbal communications are critical to a student's functioning in school and in life since more than two-thirds of all messages are nonverbal in nature. Nonverbal communication includes such elements as body language, gestures, proxemics, vocal tone, volume, and recognition and acknowledgement of conversational partners. Teachers may perceive a student's inappropriate nonverbal communication as showing a lack of cooperation, confusion, defiance or symptoms of an emotional or behavioral disorder. Certainly, behavioral problems may arise as a consequence of breakdowns in communication, resulting in a frustration on the part of the student and teacher when trying to communicate effectively.

Nonverbal communication may be divided into two general categories: (1) body language, and (2) voice. Care needs to be taken when inferring a student has a problem with nonverbal communication since much nonverbal communication is culturally determined. For example, facial expressions, posture, gestures, mannerisms, movement, and certain behavior that indicates a student is straining to use the senses (looking too closely, straining to hear, etc.) may, in fact, be culturally determined. Sattler (1998) warns that the following behaviors may not have the same interpretation across cultural groups: staring, tight lips, shaking head from side to side, slouching in chairs, turning away from the speaker, trembling, fidgety hands, whispering, and being silent or nonresponsive.

NVLD by comparison is a cluster of symptoms associated with nonverbal learning and includes issues in nonverbal communication as well as other areas. However, nonverbal communication issues should not be confused with a diagnosis of a nonverbal learning disorder.

A chart of behaviors that may actually have a basis in cultural norms rather than as characteristics of a disability, follows on the next page.

Chart of Culturally-Based Academic Behaviors

During testing sessions or other observations, examiners may observe the following behaviors and responses. If appropriate, responses or observations should be examined in a cultural context using the procedures found in the manual, *Reducing Bias in Special Educational Assessment for American Indian and African American Students* (CFL, 1998).

Achievement Area	Culturally-Based Academic Behaviors
Basic Reading Skills	<ul style="list-style-type: none"> • Reluctance to read aloud • Mispronunciation of certain words • Difficulty going from visual cues to auditory or vice versa • Unfamiliarity with certain types of reading materials • Better functioning when family member is present or when in a group • Very slow rate • Better performance when learning is embedded in a game • Poor word attack skills
Reading Comprehension	<ul style="list-style-type: none"> • Trouble with interpretive questions • Trouble with sequencing from beginning to end • Problems separating facts from inferences • Trouble drawing if...then conclusions • Trouble identifying some concepts such as time (before, after, first, second, third) • Trouble understanding language written in formal register • Trouble understanding consequences
Mathematical Calculation	<ul style="list-style-type: none"> • Trouble with math processes requiring drill and practice • Uses visuals to calculate (i.e. Fingers, drawings) • Reluctant to ask questions • Reluctant to volunteer • Overly concerned with being right
Mathematical Reasoning	<ul style="list-style-type: none"> • Excessive dependence on teacher to begin work • No participation in class discussion • Finishing is more important than correct answers • Wants to work with others and not independently • Nonlinear thinking • Difficulty setting up problems • Trouble distinguishing relevant from irrelevant information
Written Expression	<ul style="list-style-type: none"> • Poor spelling • Forgets previously learned grammar structure and rules • Only seems to have casual register of language available • Trouble with organizing thoughts on paper • Writing sequence is difficult • Trouble with new concepts • Difficulty with inductive or deductive reasoning • Trouble finishing work

History of NVLD

The discrete subtyping of developmental learning disorders was described by Johnson and Myklebust in 1967. Included in the various subtypes were those children who showed distinct deficits in social perception. These children had difficulty interpreting the emotional expression of others, while their language abilities were average to above average.

In the mid 1970s, Byron Rourke began intensive research that continues today to better define the syndrome of NVLD. Rourke's research has focused on the neuropsychological profile of children whose deficits produce poor social relatedness. The children he studied had primary deficits in tactile perception, visual perception, complex psychomotor activities and in the ability to process novel material. Secondary deficits (secondary because they were related to the basic deficits) included difficulties in tactile attention, visual attention and exploratory behavior. Tertiary deficits included tactile memory, visual memory, concept formation and problem solving.

Rourke noted when these neuropsychological deficits interact with strengths in auditory perception, simple motor skills and the ability to process rote material, socioemotional or adaptational deficits result (Rourke, B.P., 1989). Children with NVLD often exhibit extreme difficulty in processing new or complex social situations and interpreting facial expressions. They may rely on well rehearsed or rote behaviors, because they excel in these skills. Social interactions with peers may be stilted and lack reciprocity. The following represents a detailed list of NVLD indicators as described by Rourke.

- Bilateral tactile-perceptual deficits
- Bilateral psychomotor coordination deficits
- Acute deficiencies in visual-spatial-organizational abilities
- Deficits in the areas of nonverbal problem solving, concept formation, hypothesis testing
- Difficulty dealing with negative feedback in novel or complex situations
- Difficulties in dealing with cause-effect relationships
- Difficulties in the appreciation of incongruities
- Well-developed rote verbal capacities and rote verbal memory skills
- Over-reliance on prosaic rote, and consequently inappropriate, behaviors in unfamiliar situations
- Relative deficiencies in mechanical arithmetic as compared to proficiencies in reading (word recognition) and spelling
- Rote and repetitive verbosity
- Content disorders of language
- Poor psycholinguistic pragmatics (cocktail party speech)
- Poor speech prosody

- Reliance on language for social relating, information gathering, and relief from anxiety
- Misspelling almost exclusively of the phonetically accurate variety
- Significant deficits in social perception, social judgment, and social interaction skills
- Marked tendency for social withdrawal and isolation as age increases
- High risk for social-emotional disturbance if no appropriate intervention is undertaken (Rourke, B.P. 1995; Rourke, B.P. & Tsatsanis, K.D. 1996).

In addition to describing the signs and symptoms of NVLD, Rourke also hypothesized that NVLD is caused by right hemisphere dysfunction and or white matter dysfunction. This neuroanatomical focus was based on previous adult research indicating that the right hemisphere of the brain is responsible for much of the processing of visually based information. Further, adults with destruction of white matter tracts in the brain often have difficulty with visual processing (Rourke, B.P. & Dotto, J.E., 1989; Rourke, B.P. 1995).

While Rourke's contribution to our understanding of NVLD is important, his conception of NVLD as encompassing multiple layers of signs and symptoms culminating in children with significant social skills deficits has been controversial. Another viewpoint is expressed by researchers Martha Denkla and Elsa Shapiro, who have commented that one can have deficits in visual processing without a social skill deficit. Even within the context of a clinical neuropsychological practice, children who meet the diagnostic criteria posited by Rourke are rare (Pelletier, P.M., Amad, S., & Rourke, B.P., 2000).

A diagnosis of a child with a nonverbal learning disorder must include the criteria of a Verbal IQ-Performance IQ split of typically greater than 15 points with the performance IQ the lower of the two. Secondly, a social skills deficit, typically related to the understanding of nonverbal information, must be identified. Multiple other characteristics in the domains of motor, academic, visual/spatial and social/emotional may also be identified by an evaluation. Over the years the definition of NVLD has expanded, and signs and symptoms may overlap with such neurodevelopmental disorders such as Albright's Syndrome, William's Syndrome and Turner's Syndrome. Children who demonstrate the full spectrum of primary, secondary, and tertiary deficits based on Rourke's conceptualization are rare. However, many children can have various configurations of deficits and weaknesses that would still fall in the NVLD spectrum.

The developmental profile of a student with nonverbal learning disorders can be similar to that of a student with SLD, EBD, OHD, and ASD. How the symptoms of NVLD are manifested in a particular child will determine the eligibility criteria for which the student may be eligible. For example, if the NVLD manifests in acute behavioral issues, eligibility may be in EBD, in academics, SLD, in motor areas, OHD, and social issues, ASD.

Common Characteristics of Nonverbal Learning Disorders

Characteristics of NVLD are grouped four general areas: visual/spatial, motor, social/emotional and academic. Specific behavioral characteristics of children with NVLD are found under each heading.

1. Visual/Spatial – A child with NVLD may have a lack of image, poor visual recall, faulty spatial perception and difficulty with spatial retention in the school setting

- Difficulty with spatial perceptions
- Difficulty with recognition and organization of visual-spatial information
- Difficulty with visual memory and visualization
- Problems with visual-spatial confusion
- Verbally labels everything
- Difficulty with visual form constancy
- Does not form visual images or revisualization
- Difficulty with big picture concepts
- Spatial reference is neglected
- Not drawn to building or construction toys
- Difficulty placing written responses
- Difficulty maneuvering through space
- Talks himself-herself through space
- Difficulty remembering shapes
- Difficulty remembering sequence
- Difficulty copying from chalkboard



2. Motor – A child with NVLD may display motor difficulties: coordination, balance and fine motor skills.

- Poor psycho-motor coordination
- Different between dominant and non-dominant sides of body
- Problems on left side of body
- Avoids crossing midline
- Hesitant to explore motorically
- Extreme vacillations with balance
- Cognitively secures equilibrium
- Does not automatically resume balance
- Learning to ride a bike takes years
- Difficulty remaining seated in chair
- Prefers to eat and work on floor
- Simple athletic skills are not mastered
- Difficulty with fine motor skills
- Resists eating with a spoon or fork
- Difficulty learning to tie shoes
- Talks self through motor tasks
- Difficulty using scissors
- Difficulty holding a pencil correctly
- Presses very deeply to control writing



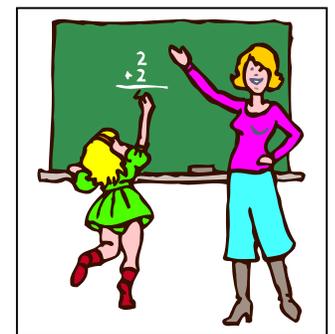
3. Social/Emotional – A child with NVLD may have a lack of ability to comprehend nonverbal communication, difficulties adjusting to transition and new situations and significant deficits in social judgment and interaction. More specifically, socially inappropriate behaviors may include:

- Inability to discern nonverbal cues
- Social blunders are incessant and tenacious
- Difficulty interpreting gestures
- Difficulty deciphering postural clues
- Difficulty reading facial expressions
- Does not notice changes in tone of voice
- Does not alter expression in speech
- Terse or curt responses
- “Binds” through continuous dialogue
- Very literal interpretations
- Continuous social misjudgments and misinterpretation
- Prefers predictable situations
- Naively trusting
- Does not understand deceit, cunning or manipulation
- Takes everyone at face value
- Concrete outlook on the world
- Hidden meanings in language and social interaction are not detected
- Behaviors labeled “annoying” or “attention-getting” by adults and peers
- Seen as ill-mannered, discourteous or rude



4. Academic – A child with NVLD may have difficulties with reading, math and written expression as demonstrated by:

- Performance IQ significantly lower than verbal IQ
- Early speech and vocabulary development
- Difficulty building a hierarchy of skills
- Remarkable rote memory skills
- Poor skills in mathematics and problem solving
- Uses counting, labeling, recounting
- Overly attentive to details
- Early reading skills development, excellent spelling skills
- Poor reading comprehension skills
- Verbally expresses himself eloquently
- Writing tasks are slow and arduous
- Difficulty with gestalt impressions (i.e. cannot understand whole to part)
- Difficulty with concept formation (Thompson, S. 1997).



Nonverbal Learning Disorders (NVLD) Screening for Children

Adapted from Children's Nonverbal Learning Disabilities Scale
www.nldontheweb.org
Excerpted from Developmental Screening and Referral Inventory (DRSI)
David B. Goldstein, PhD, 1999 with permission, October 2002

Directions: Please answer all of the following questions.

Name of child _____

Date of birth _____ Age _____ Sex _____

Grade _____ School _____

Handedness: right _____ left _____ both _____

Screening completed by _____ Relationship _____

Directions: The symptoms of Nonverbal Learning Disorders (NVLD) are grouped into four general areas that may be either strengths or weaknesses: visual/spatial, social, motor, and academic. Please answer each item by checking Never/rarely, Sometimes, Often/always, or Not Certain. Think carefully about your child's pattern of behavior over time.

Area 1: Visual/Spatial Skills

1. My child is easily disoriented, lost, or confused when entering a new space or situation.

Never ____ Sometimes ____ Often/always ____ Not certain ____

2. My child is slow to become familiar with new spaces and continues to be disoriented or confused despite repeated exposure.

Never ____ Sometimes ____ Often/always ____ Not certain ____

3. My child loses things or forgets where they are located.

Never ____ Sometimes ____ Often/always ____ Not certain ____

4. My child has difficulty remembering the faces of people he or she has met.

Never ____ Sometimes ____ Often/always ____ Not certain ____

5. My child has difficulty remembering, organizing, or comprehending visual/spatial information (such as lining up numbers or words, copying from the board, "reading" tables, charts, or maps).

Never ____ Sometimes ____ Often/always ____ Not certain ____

Area 2: Social Skills

6. My child does not get the humor in a joke or sarcasm because he or she interprets everything so literally.

Never ____ Sometimes ____ Often/always ____ Not certain ____

7. My child has difficulty "reading" people's non-verbal cues such as their facial expression, tone of voice, or body language.

Never ____ Sometimes ____ Often/always ____ Not certain ____

8. My child interrupts conversations frequently in spite of ignoring or correction.

Never ____ Sometimes ____ Often/always ____ Not certain ____

9. My child has a very difficult time dealing with changes in routines or transitioning between one activity and another.

Never ____ Sometimes ____ Often/always ____ Not certain ____

10. My child does not adapt easily to new or novel situations and does not seem to transfer what he or she has learned from similar situations.

Never ____ Sometimes ____ Often/always ____ Not certain ____

Area 3: Motor Skills

11. My child has difficulty with small motor skills such as learning to tie shoes, buttoning or snapping clothes, cutting with scissors, coloring, drawing, or pasting.

Never ____ Sometimes ____ Often/always ____ Not certain ____

12. My child has difficulty using utensils (fork, spoon, or knife) while eating.

Never ____ Sometimes ____ Often/always ____ Not certain ____

1. My child has problems with balance (difficulty learning to ride a bike, fear of going up ladders, prefers to work on the floor).

Never ____ Sometimes ____ Often/always ____ Not certain ____

2. My child seems unusually clumsy when compared to his/her same age peers in activities involving large motor skills (group games or sports).

Never ____ Sometimes ____ Often/always ____ Not certain ____

3. My child has problems writing or writes very slowly and with great effort.

Never ____ Sometimes ____ Often/always ____ Not certain ____

Area 4: Academic Skills

4. My child shows well-developed verbal or speaking skills for his or her age.

Never ____ Sometimes ____ Often/always ____ Not certain ____

5. My child asks many questions throughout the day and loves to talk.

Never ____ Sometimes ____ Often/always ____ Not certain ____

6. My child easily memorizes information he or she hears repeatedly.

Never ____ Sometimes ____ Often/always ____ Not certain ____

7. In spite of excellent word reading and spelling skills, my child has difficulty with comprehension of reading material.

Never ____ Sometimes ____ Often/always ____ Not certain ____

20. My child has difficulty with mechanical arithmetic, understanding mathematical concepts (time, money, measurement), and problem-solving.

Never ____ Sometimes ____ Often/always ____ Not certain ____

Scoring Guidelines:

Referral to a neuropsychologist should be considered if the parent responds “sometimes” or “often/always” to over half (ten or more) of the items. This indicates that the child is having significant difficulty in the areas of deficit characteristic of a Nonverbal Learning Disorder. These deficit areas can greatly impact social, emotional, academic, and vocational development in children and youth. Some of these symptoms are similar to those described for other disorders. A complete evaluation by a neuropsychologist can assist in determining the differential diagnosis (Rourke 1994).

Reference:

Rourke, B.P. (1994). Neuropsychological Assessment of Children with Learning Disabilities: Measurement Issues. In G. Reid Lyons (ed.), *Frames of Reference for the Assessment of Learning Disabilities: New Views on Measurement Issues*, Baltimore, MD: Paul H. Brooks.

Assessment Tools for Screening and Evaluation

A variety of evaluation procedures are used to determine an NVLD. There is no single list of tests for NVLD since the evaluation procedures are individualized. Still, some standardized assessment procedures commonly used in psychoeducational evaluations give school psychologists and special educators a significant opportunity to document and quantify weaknesses and deficits in visual processing, motor, social skills, and academic achievement often observed in children with NVLD. The following instruments are often used in special education evaluations in schools and are useful to diagnosticians when making a determination of NVLD.

Visual Processing (Perception, Spatial, Organization, Reasoning & Motor Integration)

- *Wechsler Intelligence Scale for Children (WISC-III)*
Performance Scale subtests
- *Woodcock–Johnson Tests of Cognitive Abilities (WJ-III)*
Spatial Relations, Concept Formation, Visual Matching, Analysis and Synthesis
- *Stanford-Binet Test of Intelligence*
Visual and Quantitative Reasoning Clusters
- *Berry & Bucktenica Developmental Test of Visual Motor Integration (VMI)*

Visual Memory

- *Woodcock–Johnson Tests of Cognitive Abilities (WJ-III)*
Picture Recognition
- *Stanford-Binet Test of Intelligence*
Bead Memory subtest

Visual Attention

- *Test of Variables of Attention (TOVA)*
- *Continuous Performance Test (CPT) – Conner’s*

Pragmatic Language

- *Comprehensive Assessment of Spoken Language (CASL)*
- *Test of Language Competence (TLC)*

Social Skills Development

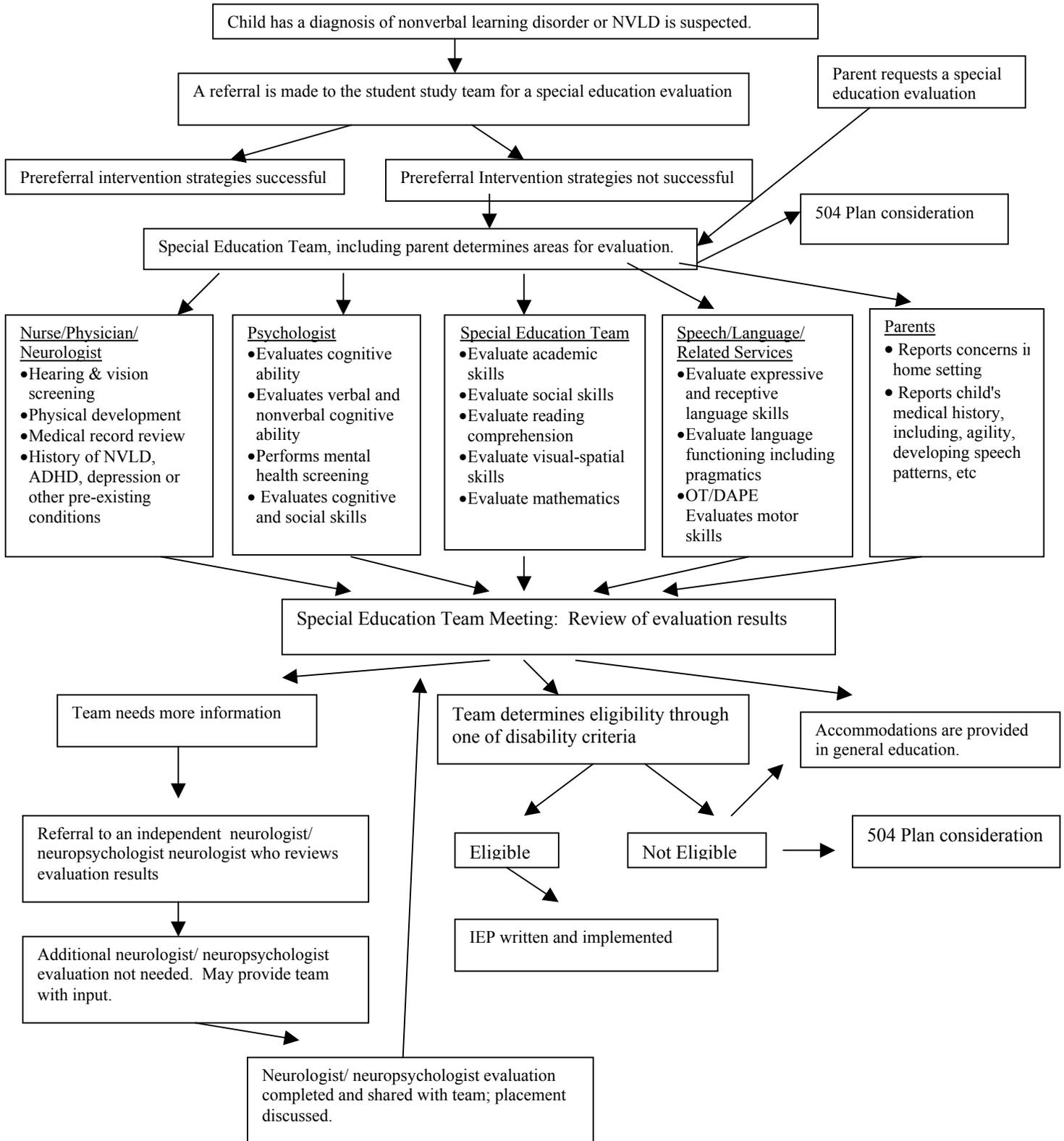
- *Social Skills Rating Scale*
- *Behavioral Assessment System for Children (BASC)*
- *Child Behavioral Checklist (CBCL)*
- *Personality Inventory for Children (PIC)*
- *Vineland Adaptive Rating Scale*
- *Scales of Independent Behavior – Revised (SIB-R)*

Academic Achievement (Math & Written Language)

- *Woodcock–Johnson Tests of Achievement – III*

- *Wechsler Individual Achievement Test – II*

Nonverbal Learning Disorders Referral Procedure



Special Education Evaluation Process

Prereferral

Possible Outcomes:

1. General education teacher provides interventions or accommodations in the classroom and the child **is successful** in the educational environment
2. General education teacher provides interventions or accommodations in the classroom and the child **is not successful** in the educational environment;
 - The Special Education Team requests additional interventions in the general educational setting OR
 - Special Education Team may proceed with a special education evaluation or 504 consideration. The Team determines if additional evaluation information is necessary based on the student's presenting needs.

Referral for Special Education Evaluation

Parent requests a special education evaluation in writing. Evaluation is completed by appropriately licensed team members. The team must include parents, general education teacher, special education teacher, and a representative from the school district. It may include a psychologist, learning disabilities teacher, speech-language clinician, nurse, or other special education, teachers. Advocates and clinic representatives may also be included as part of the team.

Comprehensive evaluation

The purpose of a comprehensive evaluation is to determine if a disability exists AND if special education and related services are needed. The evaluation must reflect the student's present level of performance and is the basis for later educational planning. An evaluation must be conducted when a student's academic, behavioral, emotional, social, physical, communication, or functional skill acquisition in the present educational placement meets eligibility criteria **and** a need for a special educational programs or services.

An evaluation may be conducted if the student or other agency requests, and must be conducted if the parent or student over age 18 requests. The evaluation must be conducted by a multidisciplinary team in accordance with Minnesota Rule part 3525.1100 with an evaluation plan developed as part of the referral review. The team shall conduct a comprehensive assessment in those areas of suspected disability using technically adequate instruments and procedures.

**Minn. R. 3525.2750, subp. 1 (A), (C)-(E).*

At the team meeting, the team reports findings and determines eligibility for special education based on Minnesota state criteria. The team may also refer the student for consideration for a 504 Plan.

Program Determination

Possible options based on the evaluation results:

1. Student **does not meet** state criteria for special education;
 - 504 plan may be implemented,
 - or
 - accommodations may be made in general education.
2. Student **does meet** eligibility criteria for special education through Other Health Disabilities, Autism Spectrum Disorders, Emotional and Behavioral Disorders, Specific Learning Disabilities or another category of disability;
 - an IEP is written and implemented.

Team Responsibility When a NVLD is Suspected

When a team has conducted an evaluation for special education, eligibility decisions are made based on state and federal criteria. If a team has conducted an evaluation for special education and suspects that a student has a nonverbal learning disorder, information about the disorder should be provided to parents and an evaluation should be encouraged.

NVLD, like other disorders, is not diagnosed in schools; it is diagnosed in clinics. Specialized personnel are involved in the diagnostic process. Sometimes important information about the effects of the disorder over time as well as possible approaches to enhancing the opportunities for success in the educational setting are provided by clinics.

The Role of the Neurologist and/or Neuropsychologist

Establishing a pattern of student strengths and areas of concern is the responsibility of the evaluation team. If NVLD is suspected, a neurologist may be consulted. The neurologist may suggest a screening protocol, review student records, or consider a battery of tests. If, during the team meetings, it is determined that additional information regarding nonverbal learning disorders is required, a neurologist or neuropsychologist may be consulted.

Team Override on Eligibility Decisions

Special education teams may use an override of state criteria in eligibility determination when the presence of a disability is suspected but the data do not match the requirements. In the case of a student who is diagnosed with a nonverbal learning disorder who is referred for a special education evaluation, and who does not meet

Minnesota criteria for a particular disability, a team may choose to override Minnesota eligibility criteria. When an override decision is made, the team is making a determination that "...the pupil has a disability and needs special instruction even though the pupil does not meet the specific requirements..." MN Rule 3525.1354 (the complete rule may be found at <http://www.revisor.leg.state.mn.us/arule/3525/1354>).

For an override, certain documentation must be gathered about the following:

- why the standards and procedures used with the majority of pupils resulted in invalid findings for this pupil;
- what objective data were used to conclude that the student has a disability and is in need of special instruction and related services;
- which data had the greatest relative importance in making the decision; and
- the signature of team members and whether they agree or disagree with the override is required.

Specific examples of the documentation necessary for an override may be found in <http://www.revisor.leg.state.mn.us/arule/3525/1354>.

Sample of an Override (V-P Split)

The reason for this section is to help guide the team in writing an override for students who have NVLD or who are suspected of having NVLD and are not determined to meet the eligibility criteria for special education. This is a sample of Section III of an Evaluation Summary Report of an override for a specific learning disability. This is a student who exhibits many of the symptoms of NVLD.

ESR Section III **Interpretation of Evaluation Results and Eligibility Determination:**

Severe Underachievement:

The team concluded that Steve demonstrates severe underachievement in response to usual classroom instruction in the areas of basic reading skills, reading comprehension and written expression. The Woodcock-Johnson Revised Tests of Achievement, Woodcock Reading Mastery and classroom assignments demonstrate severe underachievement compared to his peers. This is also severely below what would be expected from Steve in the areas of basic reading and reading comprehension. Specific skill deficits include the following: decoding, blending, reading fluency and comprehension. Steve is still struggling despite participation in the Title I program, teacher accommodations and modifications in the areas of basic reading skills and comprehension.

Severe Discrepancy:

According to the Minnesota State criteria, the team concluded the Steve did not demonstrate a severe discrepancy between his general intellectual ability standard score of 109 and his achievement standard scores of 98 in basic reading and 94 in reading comprehension based on the Woodcock-Johnson III Tests of Achievement. Steve did, however, demonstrate a split between his verbal and performance IQ on the WISC-III. This split of 26 points is considered significant and unusual. The verbal IQ was 121 and the performance IQ was 95, which led to the full-scale score of 109. The team concluded that the verbal IQ score was a better indicator of Steve's ability. Even using the Verbal IQ score of 121 and comparing it to the Minnesota Regression Table, the cut off score to meet criteria is a standard score of 92. On the Woodcock Johnson III Tests of Achievement, Steve scored a standard score of 98 in basic reading skills and 94 in reading comprehension, which does meet SLD criteria.

Information Processing:

The team concludes that Steve has an information processing condition, which is observable in the areas of expression and manipulation. Teacher and parent interviews as well as observation identify Steve's information processing deficits in these two areas.

Team Override Documentation

1. In most cases a student's full scale IQ score is used to determine overall cognitive ability as well as if there is a discrepancy between ability and achievement. In Steve's case the team determined his full-scale IQ score of 109 was impossible to use as an accurate measure of Steve's general intellectual ability because of a 26 point split between the performance IQ and the verbal IQ. This was considered too unusual and significant. The team determined his verbal IQ score of 121 to be a better indicator of his overall cognitive ability than nonverbal/performance IQ score of 95. Using the verbal IQ score of 121 and comparing that to the standard score of 98 in basic reading and 94 in reading comprehension, Steven demonstrates a discrepancy between his ability and achievement in those areas. A standard score of 92 was required to meet criteria based on the Minnesota Regression Table. The team concluded that the Reading Mastery scores were a better indicator of Steve's reading ability. The standard scores are: readiness 93, basic reading skills 88, and reading comprehension 85, which gave Steve a total standard reading score of 88.
2. Other data that supporting the team decision are the scores that Steve obtained on the Woodcock-Johnson Revised Tests of Achievement in the areas of basic reading skills and reading comprehension. Work products, teacher comments, observations and parent input in the areas of reading skills and comprehension also support the fact that Steve is struggling to develop age appropriate reading skills.

3. The team concluded that the split between Steve's verbal and performance IQ scores had the greatest relative importance in making the decision to do an override. The Woodcock Reading Mastery scores were also an important tool in that decision. The scores on this test as well as the Brigance Diagnostic Inventory of Basic Skills gave a clearer picture of where Steve was actually functioning at in the areas of basic reading skills and reading comprehension.
4. For documentation of team members agreeing to the override, see the last page of this report.

In a complete report, the required SLD Written Report Components would follow this section.

Reevaluation and NVLD

The IEP team must reevaluate a student with an IEP every three years. The complete requirements for conducting a reevaluation may be found in Minnesota Rule 3525.2710, which is accessible at the following web address:

<http://www.revisor.leg.state.mn.us/arule/3525/2710.html>.

At the time of reevaluation, the IEP team and other qualified persons as appropriate, need to determine the following:

- “whether the pupil continues to have a particular category of disability;
- the present levels of performance and educational needs of the pupil;
- whether the pupil needs special education and related services;
- whether any additions or modification to the special education and related services are needed to enable the pupils to meet the measurable annual goals set out in the individual education program of the pupil and to participate, as appropriate, in the general education curriculum.”
(MN Rule 3525.2710 Subp. 4.).

In the case of a reevaluation for a student with a medical or clinical diagnosis of a nonverbal learning disorder, Minnesota criteria for a particular category of disability must be met in the initial evaluation or the team may use an override for which there are certain requirements (see the following website for the requirements <http://www.revisor.leg.state.mn.us/arule/3525/1354.html>).

At the time of reevaluation, a team may use existing data and identify any new data that are needed in the evaluation process to make the determinations mentioned above. If the team decides that further outside evaluation data is needed, they may make such a recommendation. The team, as has been mentioned previously, will not be making a diagnosis of NVLD as it is not one of the special education categories of disability listed in MN Rule 3525. Please refer to disability specific manuals for more guidance.

Please note that if an override is used to determine if a student has a disability, the basis used for making the initial determination should be used at the time of reevaluation to determine whether a student continues to have a disability.



NVLD Profiles

The following profile provide a snapshot of behaviors that may be observed in the classroom. These profiles illustrate common characteristics of children with NVLD in pre-school, elementary, middle and high school, but it should be noted that the characteristics may appear at multiple levels. It may be beneficial to read through all the profiles when determining a need for an NVLD assessment or when looking for accommodations for a student identified as NVLD. One of the struggles of identification of NVLD is that it manifests in varying degrees and symptoms; therefore, firm lines cannot be drawn as to when characteristics will appear.

NVLD Preschool Profile

Case Study

Sam has just entered preschool. Even though the classroom offers many different ways for him to explore, he chooses to sit on the floor looking at books or playing alone. When other students or the teachers encourage him to try the blocks or other hands-on material, he resists or walks away.

When Sam's mom drops him off in the morning, he becomes very upset and does not want to stay. This hasn't improved much since the first weeks of preschool. Sam became very agitated when the class changed their routine and went on a field trip to the fire station. He has connected with one student and will play with him, but only when that student asks. Sam prefers to interact with the adults.

He is not able to catch the ball even when thrown from short distances. He is very afraid of going up the ladder or down the slide. He avoids the swings and jungle gym. Age appropriate gross motor skills are lacking: hopping on one foot, skipping, and kicking a ball. He is unable to tell which shoe goes on which foot. He is unable to tie his shoes and the snaps of his coat are often misaligned or unsnapped.

During art time, Sam holds the scissors very awkwardly and it takes a lot of time to complete the task. His drawing and coloring are still at a very primary stage with use of only a few colors and scribbles and lines across the page.

Sam's parents were very excited to enter him in preschool because of his perceived high level of verbal skills. He loves to talk with adults and it is often hard to get him to stop. Sam asks many questions throughout the day and can repeat the response verbatim. Sam has already started to read words.

Characteristics

Visual/Spatial

- Avoids playing with blocks and other building materials
- Prefers games that involve spelling and reading
- Forgets where things are located
- Easily disoriented by large spaces

Social

- Prefers to play alone
- May interact with 1-2 students who will be his guide
- Does not like to separate from parent(s)
- Has difficult time with transitions and changes in routine
- Difficulty ending one task and beginning another

Motor

- Age appropriate gross motor skills are not present
- Resists eating with utensils
- Prefers to sit on the floor
- Self-care fine motor tasks not present or minimally developed
- Fine motor skills delayed
- Coloring or cutting skills delayed
- Poor balance
- Fear of heights
- Avoids playing on playground equipment

Academic

- Often thought of as gifted
- Verbal skills highly developed at an early age
- Highly developed letter/numeral recognition
- Often early reading skills already developed
- Some spelling skills already present
- Strong rote verbal memory skills
- Sees the world in black or white and does not get humor

Strategies/ Accommodations

- Encourage peer interaction or at least parallel play
- Give student only a few blocks on a plain surface to play with
- Develop peer interactions routinely and use games he/she is comfortable with
- Keep the same pairs together for extended time to increase comfort level
- Occasionally pair with adult to minimize anxiety
- Prepare student for the daily routine and changes immediately when entering school
- Give parent the next day's routine to preview prior to coming to school
- Allow use of adult or other physical support for motor skills
- Play catch while sitting on the floor away from others
- Climb for practice and decrease fear of heights
- Take student to play area when others are not present to practice
- Practice self-care on object prior to doing own clothing.
- Give only 1 item per page for cutting
- Lay out a set amount of colors to use on the page
- Encourage reading skills
- Provide opportunities to "shine" in strength areas in classroom
- Allow to work at his level in all language arts areas
- Verbally explain humor and commonly misinterpreted sayings
- Support parents in their view of the child's overall skill development. Focus on the positive, but also acknowledge areas of growth needed

NVLD Elementary School Profile

Case Study

Mary is a 4th grade student who has qualified for the gifted and talented program since grade 2. Her desk or work area is very disorganized and she is often unable to find assignments she says are finished. When involved in cutting or pasting items, she has a difficult time and is often frustrated with this task. She is often out of her seat and seems to prefer working on the floor.

Although Mary has a well-developed vocabulary and loves to verbalize with teachers and peers, she is experiencing some rejection from her classmates. They are impatient with her organizational and work completion difficulties. She also has a tendency to interrupt conversations or not appropriately join the conversation in progress. She has trouble finding a partner or group to work with when the opportunity is provided.

Mary's PE teacher notices that she does not participate in group games at the same level as her peers. Her athletic skills are not as developed and she often does not understand the "rules of the game."

Although still a strong reader and speller, Mary is having increasing difficulty with mathematical concepts and problem solving. She cannot remember a sequence of steps or keep numbers lined up on the page. Writing tasks take a very long time for her to complete and she has a tough time getting started. Her handwriting is awkward and she often mixes printing with cursive letters.

Characteristics

Visual/spatial

- Poor organizational skills
- Often unprepared for class
- Appears confused
- Remembers the parts or details, but not the whole or "big picture"
- Difficulty with copying from the board
- Difficulty recalling shape and formation of letters

Social

- Does not understand nonverbal cues or communication
- Interrupts frequently and talks too much
- Has difficulty making and maintaining same-age peer relationships
- Does not adapt to change or novel situations easily
- Takes things literally

Motor

- May be clumsy and unbalanced
- Avoids crossing over the midline in fine/gross motor tasks
- Difficulty with cutting and pasting
- Resists eating with utensils
- Prefers to eat and work on the floor
- Prefers to print
- Uncommon incidence of left-handedness

Academic

- Significant VIQ>PIQ
- Large speaking and reading vocabulary
- Excellent rote memory skills
- Phonetic speller
- Increasing difficulty with mathematics
- Increasing difficulty with multi-step directions or projects
- Increasing difficulty completing written assignments

Strategies/

Accommodations

- Provide assignment notebook and assist with completion
- Instruct with specific verbal cues and written reminders
- Verbally point out individual objects and how they relate to the whole
- Provide a copy of material or notes from the board
- Provide an alphabet guide for printing and cursive letters on desk
- Prepare for changes in staff or schedule
- Limit the number of teachers or adults student comes in contact with
- Give explicit directions and allow for clarification
- Provide opportunities for cooperative work with good role models
- Eliminate or modify tasks that require cutting, pasting, or folding
- Penmanship should not be graded
- Grade PE based on participation rather than skill
- Allow student to work on the floor when appropriate
- Recognize reading and vocabulary strengths
- Introduce one step at a time to minimize frustration
- Place in small group math class or provide support for large classroom instruction and assignments
- Allow extra time to get places and to complete work
- Encourage use of word processor

NVLD Middle School Profile

Case Study

Melissa is finding middle school to be more difficult than elementary school. At the beginning of the year, she had trouble remembering the school layout, her locker combinations, and daily schedule. She continues to have difficulty remembering teacher names, class assignments, and struggles with organization and homework completion. She often misplaces her school materials or personal possessions.

Melissa does not fit in with her peers. She has been known to interrupt, say inappropriate or off task comments, and often acts immaturely. She has difficulty beginning and maintaining friendships and does not “connect” with her peers due to an inability to understand nonverbal communication. Her teachers and parents have noticed that when a routine changes, she becomes anxious and disoriented. She has become more isolated from her peers.

Her PE teacher has observed a reluctance to participate in team sports. Her motor skills are less developed than her peers and she has experienced some ridicule. She avoids physical activity at home and prefers indoor activities.

She finds middle school mathematics, science, and lengthy reading passages to be very challenging. She has a hard time getting started on class assignments. She is often overwhelmed and exhausted at the end of the day and resists doing homework. She has been known to shut down during and after school when she feels frustrated or completely overwhelmed by academic demands.

Characteristics

Visual/Spatial

- Gets lost easily
- Tardy for class
- Often unprepared for class
- Forgets materials, assignments, and homework
- Has difficulty drawing, copying, reading tables, charts, maps

Social

- Does not understand nonverbal cues or communication
- Has difficulty making and maintaining same-age peer relationships
- Does not adapt to change or novel situations easily
- May become anxious, depressed, isolated
- May become “class clown” to gain acceptance

Motor

- May be clumsy and uncoordinated
- Simple athletic skills are not mastered
- Last chosen to participate in group games
- Prefers to work on the floor
- Prefers to print

Academic

- Significant VIQ>PIQ
- Difficulty with memory of more complex information
- Increasing difficulty with mathematics, reading beyond literal comprehension, written expression, and scientific concepts
- Continuing difficulty with concepts of time, money, and measurement
- Difficulty with multi-step directions or projects

Strategies/

Accommodations

- Visit new places and practice new routes beforehand
- Allow extra time for getting to class
- Provide assignment notebook and assist with completion
- Provide binder with dividers or multi-colored folders for each subject
- Modify or omit assignments requiring copying, drawing, or pictorial information
- Involve school counselor or social worker to provide direct instruction in social skills and problem solving
- Provide non-threatening interaction with peers
- Grade PE based on effort and participation
- Assign to a team or make team captain
- Teach step by step with verbal explanation
- Teach memory and comprehension strategies
- Reinforce verbal strengths with class discussion, cooperative assignments and projects
- Reduce the amount of writing expected
- Encourage the use of word processing
- Allow extra time for work completion or test taking
- Provide a daily support study hall for work completion
- Consider basic skills or functional math
- Provide assistance for allied arts classes

NVLD High School Profile

Case Study

Ben is a freshman in high school. He received his class schedule on the first day of school. He is able to state the order of his classes, but struggles to locate any of the classrooms and therefore is often late. When given written tests and worksheets, answers are scattered randomly on the page making it difficult for Ben and his teacher to know what answer goes with the problem. When instruction is given using the overhead, Ben has a very difficult time listening and copying notes at the same time.

At lunchtime, Ben often sits by himself at the same corner table. His peers shun him due to his lack of understanding jokes and general teenage banter. Ben has not attended any of the school social events this year. His isolation appears to be getting worse as the year progresses. Ben is showing more signs of depression. When Ben's History teacher was out for several weeks and several substitutes covered the class, Ben became agitated and had difficulty concentrating.

In PE, Ben is often the last one picked for team activities and demonstrates clumsiness in sports. When he has to do longer written work in other classes, Ben's hand and arm become fatigued from pressing so hard on the pencil.

In Algebra, Ben is able to recite the formulas needed at that level of math, but is unable to apply those to daily work. In his biology class, Ben is able to correctly respond to factual questions but has not been able to connect interrelated units and information. His freshman composition teacher has noticed that Ben turns in lengthy papers that follow the correct format but have very limited content.

Characteristics

Visual/spatial

- Often tardy for class due to difficulty transitioning from room to room
- Difficulty maneuvering in unfamiliar spaces
- Difficulty with plane integration such as copying or note-taking from overhead while sitting in desk
- Confused by assignments with small, close print or tables, charts, and graphs

Social

- May have 1-2 friends who will tolerate idiosyncrasies of behavior
- Little or no relationship with opposite sex
- Becomes increasingly isolated from peer group
- Depression and/or anxiety
- Struggles with change in routine
- May have a job, but it is difficult to maintain job performance standards

Motor

- Continues to lag behind peers in gross motor activities.
- Prefers individual sports to team sports
- Written work takes vast amounts of time to complete
- Hand and arm become fatigued when writing due to use of excessive pressure when writing
- Continues to be out of seat often

Academic

- Able to compute rote math facts but unable to apply to abstract reasoning
- May produce several pages of written work but with limited content
- Responds verbatim to factual questions in all academic areas; limited inferential comprehension
- Struggles to complete tests and worksheets due to difficulty getting started and placing answers

Strategies/ Accommodations

- Prepare for quarter or semester changes in classroom location
- Allow transition from class to class a few minutes before other students
- Allow tape recording of lectures for later note taking so the focus can be on the delivery and visuals
- Provide student with copy of the notes prior to lecture and allow highlighting or underlining
- Limit amount of problems or questions on a page and use consistent format
- Encourage positive peer interaction in and outside of school
- Promote relationships through counseling and social skills groups
- Seek medical intervention for depression as needed
- Provide opportunities to move during instructional day
- Provide adaptive instruction in skills needed for PE classes
- Encourage participation in individual sports with whole team atmosphere
- Give explicit verbal directions to the student and encourage clarification
- Capitalize on verbal learning strengths
- Provide direct instruction in strategic methods for reading comprehension and writing
- Provide direct instruction in the connections between units of study.
- Encourage use of word processor for writing
- Modify the amount of written work expected (stress quality over quantity)
- Placement in more functional academic programs instead of higher level courses
- Allow extra time for work completion and test taking
- Be sensitive to the tendency of feeling "overload"
- Use a job coach and/or inform boss of strengths and weaknesses

NVLD Parent Story

Any child with special needs requires special parenting. Since each disability is unique, so is the parenting required to help the child reach their full potential. As the parents of a child with the diagnosis of NVLD, we have had to adjust our parenting style to match that of our child's learning style.

When our daughter was a preschooler, she learned so differently than her brother only eighteen months younger. She learned through asking questions...over and over again. She learned through talking...nonstop it seemed some days. She had a vivid imagination and would pretend to be Snow White, Cinderella, or other characters for hours...long after we wanted to play along. She memorized the lyrics to many Disney songs by listening to tapes repeatedly...but did not learn through observation or experience. She did not "take a hint" or respond to gentle reminders and natural consequences. She did not pick up on nonverbal clues and had to be told directly and very firmly what was appropriate or inappropriate. It was and still is a tough way to parent and she does not always respond to the explicit direction, especially when she is tired or hungry. The best way to describe this behavior is "inflexible"-a hallmark of NVLD. It has been the most challenging behavior we have had to deal with over the years.

When it came time to send our daughter to kindergarten, we sent her off knowing that she would do it her own way. She seemed to enjoy school and we assumed no news was good news. She began memorizing books and insisted on reading to us. At conferences we were surprised to hear of the many complaints: she did not follow the routine, she often forgot to clean up her materials, she was unable to identify the patterns or sequences in math, she had trouble with multi-step directions, she did not engage well in the group activities. We asked the teacher to speak personally to her about what she expected and then send us a daily report. If necessary, we would follow up at home. We did not receive a negative behavior report for the remainder of the year! It was not a matter of ability, but rather the teacher's assumptions that she would "pick it up" like the rest of the children through group discussion, modeling, example, and practice. She needed to be told verbally and directly what to do and not to do. She also needed to be verbally prepared for changes in routine or she would become confused and uncooperative.

This learning style continued throughout her elementary years. She needed much more verbal direction than her peers. If provided that direction, she did her best to cooperate at school and please her teachers. The result at home was that we often dealt with an overwhelmed, exhausted, and irritable child. She often refused to complete homework because she was too tired or unable to transition back to school after free time. She excelled in reading, spelling, and writing. She struggled more and more with organization, math computation and problem solving. She experienced more difficulty making and keeping friends and began to be teased for her motor and social awkwardness. She often looked unkempt with untied shoes, or shoes on the wrong feet, or an unbuttoned coat and no mittens. By fourth grade, she sought adults rather than peers and often chose to work alone. She was referred for assessment because we all recognized that she was having greater difficulty "keeping up" and learning new information.

Her eventual outside diagnosis of NVLD by a child psychiatrist was a relief. Finally we had something that explained her differences in learning and interacting. The team, her teachers, and my husband and I were unfamiliar with the NVLD diagnosis suggested by the psychologist and later supported by the psychiatrist. She qualified for special education under the category of learning disabilities through an override and we discovered together that she not only needed academic support in math (and later science, work completion, and test-taking), but organizational support, social skills support, motivational support, and frequent preparation for change. She learned social skills the hard way and her natural talkative and friendly manner has altered into a shy, anxious, and hesitant approach to same-age peers. As the years have progressed (our daughter is now in high school), she has needed more direct service from special education in addition to modifications, adaptations, and accommodations in the mainstream. But she is making it... day by day... and has developed a few friendships.

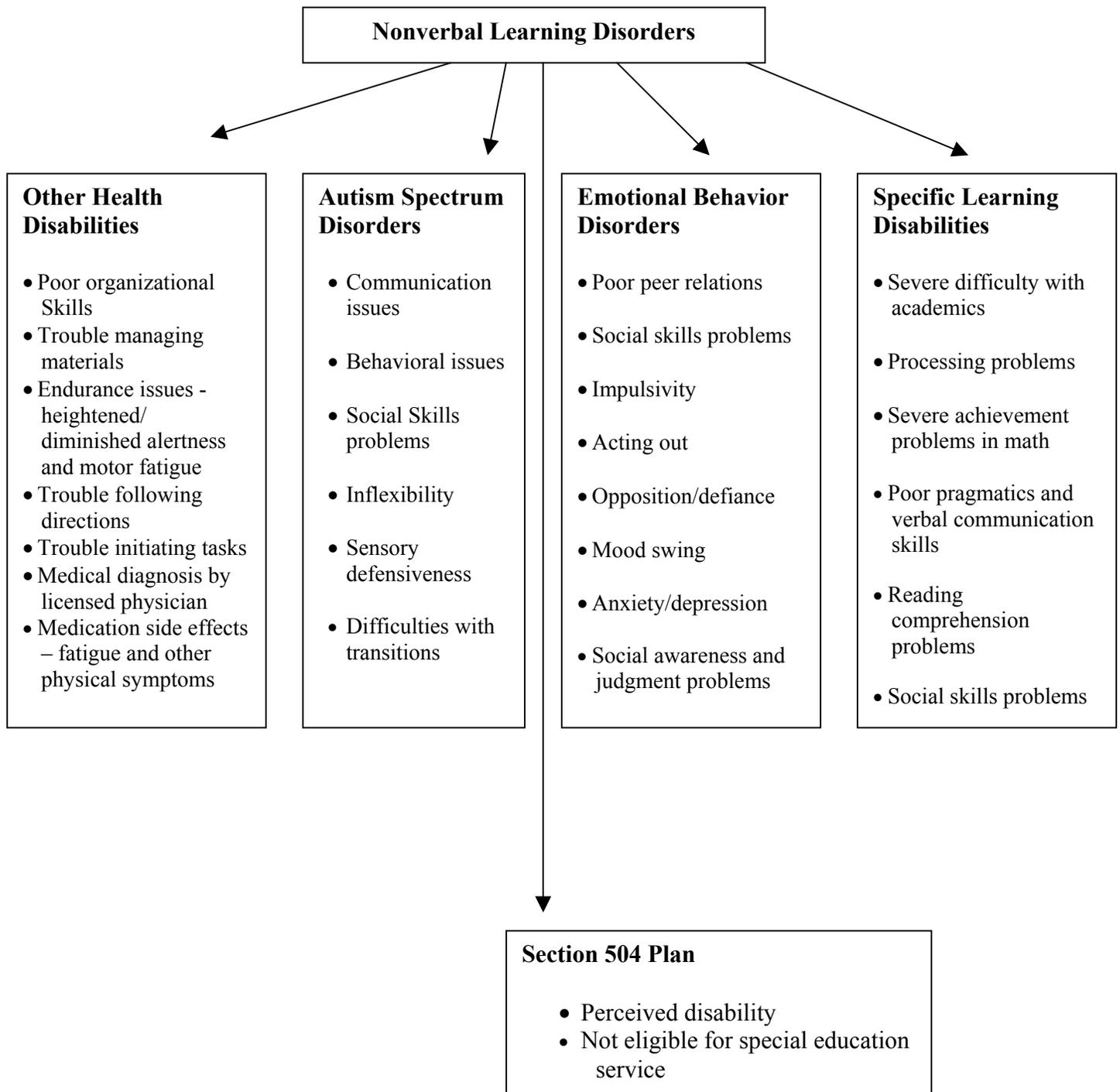
The parent of a NVLD child has no choice. You must be your child's advocate. You must educate yourself about this disability because chances are the school is not well educated. You must be willing to share your knowledge with the principals, teachers, bus drivers, social workers, and even the special education staff. People dealing with a NVLD child are often puzzled by the child's very unique profile of strengths and weaknesses. Nor do they understand the amount of energy it takes for a NVLD child to make it through a school day full of visual/spatial, academic, motor, and social challenges. As your child's advocate, it is essential to work *with* the school, not against. I have found most teachers to be willing to listen, modify, or accommodate-especially if I explain NVLD and the impact it has on her learning style. I am grateful for email communication as it saves time on both the teachers' and my part when making a request or suggestion or sharing a concern. I am also very grateful for the special education staff assisting in the education of mainstream staff and providing academic, organizational, and social skill support. Her special education staff and IEP ease the burden not only for my daughter, but also for our family. It becomes a matter of deciding together whether a class or subject will be important to her in the "big picture" or if she would benefit more from an exemption or alternative. She needs an education, but it does not have to be the same education as her peers. It does have to be adapted to match her strengths and weaknesses so that we can also maintain and build her motivation and self-esteem. Whenever I get discouraged about the amount of effort it takes from me for my daughter to be successful, I have to stop and remember that it is even harder for her...

There are many positive results from having "a child with a disability." We have learned to be very flexible parents: what works today may not work tomorrow. Each day should be a fresh start. We have learned to pick our battles: not everything is important when your child's (and family's) mental health and self-esteem are at stake. Our entire family accepts being different as the norm-not everybody is the same and should not be compared. We are all more patient with others because we recognize through our experiences and observations that people learn and perform at different rates.

Our daughter is remarkably insightful about differences and wishes everyone would look on the inside rather than the outside. As she wrote in a story called Life Lessons:

"Give people a chance. That's all I am trying to say.
You might find a new friend."

Nonverbal Learning Disorders Possible Relationship to Special Education Eligibility



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NVLD Links

NLD <http://www.NLDontheweb.org>

OASIS: <http://www.udel.edu/bkirby/asperger>

ANXIETY: <http://www.nimh.nih.gov/anxiety>

LDONLINE: <http://ldonline.org>

LDONLINE SOCIAL SKILLS WITH RICK LAVOIE:
http://ldonline.org/ld_indepth/social_skills/lavoie_quest.html