

Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD

By: Sue Thompson (1998)

The typical school campus offers a complex, constantly changing and often unpredictable milieu. Students are required to cope with multiple stimuli, varying behavioral expectations, and complex social interactions, as well as the academic tasks presented to them on any given day. They are expected to know how to behave appropriately in a myriad of situations. Such exacting conditions can pose a challenge for any student, but for the child with nonverbal learning disorders (NLD) these demands can prove to be totally overwhelming and may appear insurmountable at times. Unless the entire school staff is conscious of the unique neurobehavioral characteristics which impede the student with NLD, and seeks to provide appropriate intervention strategies, this student will be destined to fail in school.

An appropriate educational program for the student with NLD must take into account the assets this student possesses and build upon these strengths to assure a successful outcome. A suitable program must also recognize the areas of neurological impairment obstructing this student's performance and seek to provide compensatory strategies to deal with these weaknesses. Programs which address both academic and social competencies achieve the most success. The child's individualized educational program should not merely focus on academic growth, but should also stress compensatory strategies which will assist her future academic progress by enlarging her repertoire of coping mechanisms. In other words, the educational program for this student should be aimed at preparing her to succeed in the future by maximizing her potential today.

A number of the puzzling behavioral reactions seen in the child with NLD are often misinterpreted by educators. Prior to the development of an intervention plan for this child, it is important to first analyze the purpose of these behaviors from the perspective of the student's neurological deficits and dysfunctions. This child's behaviors are usually prompted by his desire to survive in a setting which is confusing, disorienting and frightening to him, given his neurological deficits. As a learning and behavior specialist consulting with school districts, I am often asked what can be done to stop a child's annoying behaviors, as opposed to being asked what the school staff needs to know and do in order to develop an intervention plan which will better serve the needs of this student. All too often, the educational team wants to hold the student responsible for his neurological condition. They erroneously respond to his unwitting behaviors as though they were deliberate.

Ten common neurobehavioral characteristics of NLD are described below, along with suggestions for teacher intervention which should be considered when developing an individualized educational plan for the student with NLD. The suggestions given are general and should always be adapted to the unique needs of the individual student in your care. Approaches will vary, depending upon the age of the child and the severity of his NLD symptomology. It is important to first obtain an accurate neuropsychological assessment in order to gather pertinent information about any particular child's assets and deficits, so that an appropriate individualized educational plan can be tailored to the unique constellation of symptoms the child displays.

The student with NLD:

Has difficulty finding her way around

- - and is often lost or tardy. The student with NLD has difficulty with internal and external organization, visual- spatial orientation, directional concepts and coordination. Getting lost on campus and/or arriving tardy for class are predicaments this child must struggle with daily. Teachers can play a vital role in helping the student with NLD learn to negotiate the confusing visual-spatial complexities of the school campus.

It is up to the adults in this child's life to provide the necessary compensatory strategies which will allow her the independence and mobility needed to find her way around in the school environment. Continually assess her understanding of spatial and directional concepts. Professionals who work with this student at school must provide her with the external structure, organization, and stability that she lacks internally. This can be accomplished by:

- Providing a "verbal-rope" to guide the student from place to place;
- Assigning a peer buddy who enjoys helping this child and who is attentive to her needs;
- Training this peer buddy to look out for her classmate with NLD on the bus, during recess, at lunchtime, during passing periods and so forth;
- Eliminating any negative consequences for tardiness;
- Rehearsing getting from place to place, with significant markers pointed out verbally.

Has difficulty coping with changes in routine and transitions

The student with NLD generally copes well in a structured predictable environment. However, he will experience extreme stress when faced with forced or unexpected changes in routine. Because this child lacks internal organizational skills, he will need extra assistance in this area. Prepare him ahead of time for all changes in routine and transitions, such as: field trips, assemblies, substitute teachers and modified days. Use a written and numbered schedule to help prepare him for changes. Panic sets in when this child feels "ambushed" or does not know what to expect. These elevated levels of anxiety can be decreased by offering a high level of consistency within the school program.

Adequate "warning time" will be required before the introduction of any novel event. In some instances the stress of a novel encounter can only be alleviated by allowing the student to remove himself from the stressful event or situation. When this occurs, a "safe-place" or "safe-person" should be pre-designated for him to go to. A compassionate "reentry" plan should be set up in advance to assist the student in reentering the stressful situation. Teachers must help this child learn how to cope with changes and transitions, so that the stress of his school day does not accumulate to the point where he is unable to function at school. This can be accomplished by:

- Providing a predictable and safe environment with a consistent daily routine;
- Minimizing transitions and giving several verbal cues to the student before transitions;
- Furnishing the child's parents with a schedule of activities so they can "rehearse" (preview and prepare) for the following day with their child and make sure he has the necessary supplies required for the day's activities;
- Posting a simple written schedule on the blackboard at the beginning of each day in primary grades;
- Explaining the daily agenda to the older child so he can begin to internalize the structure of his school day;
- Writing out a high school student's daily schedule on a card (with any changes in routine highlighted) that can be carried from class to class, so it is always readily available.

Has difficulty generalizing previously learned information

Generalization is the transfer and application of previous learning to new situations and contexts. We are constantly making spontaneous connections, realizing that a particular concept applies to a wide range of topics and/or recognizing that a particular strategy might apply to a number of situations. The student with NLD is stymied when confronted with a situation which she has not previously encountered, even if the new situation is only slightly different from one for which she has previously developed a successful strategy. This child is often unable to understand what is expected of her because she is unable to apply rules and principles learned at other times and in other situations to a situation she currently faces. Difficulty generalizing information will cause problems in modifying learned patterns to make them applicable to new situations and in prediction of outcome.

When working with a student with NLD, teachers often complain that this child "treats everything as though it were an isolated fact or event." The factual information that is so well-memorized and regurgitated in lengthy monologues by this child doesn't ever seem to get "packaged" with other similar information. Therefore, present learning is not connected to other previous learning. Cause-and-effect relationships are lost. It becomes necessary to discuss individual situations in depth with this student, as they arise.

This child learns through discussion (verbal mediation). Generalization skills that are acquired spontaneously by most students need to be addressed in a specific step-by-step manner with this student. Verbally review the information being presented and take specific steps to help her internalize it and connect it to other previously learned information. Encourage the generalization of learning. This can be accomplished by:

- Never expecting the student to automatically generalize instructions or concepts;
- Using language as the bridge to tie new situations to old learning;
- Reviewing past information before presenting new concepts;
- Verbally pointing out similarities, differences and connections;
- Verbally indicating generalizations which can be drawn in various situations;
- Methodically discussing the cause-and-effect relationships of events and situations with the student.

Has difficulty following multi-step instructions

Confusion over what needs to be done can be at the heart of a student's failure to complete class assignments or follow class directions. Most students remember a series of instructions by visualizing themselves performing each step in the series. They don't try to remember each word (verbatim) in a long string of directives. However, because the student with NLD is unable to pass this information to the right hemisphere and visualize the sequence, he attempts to memorize every word as it is said to him. He is then expected to act upon the directives in the prescribed sequential manner. This, of course, is much more difficult than simply storing factual information (and proves to be less effective).

More often than not, one or two of the directions are properly implemented (with possibly a step or two omitted in between), and then the student asks, "What should I do now?" (An exasperated mother recently told me her son with NLD's mantra is "What's next?"). Teachers will often mistake this type of behavior for an attention or listening problem. This is not the case. The child was paying close attention and heard the whole series of instructions, but because he was unable to visualize himself carrying through, he could not "hold on" to the information. He is not inattentive or unmotivated, but rather his brain processes information differently from most other students.

So, obviously, this situation will not be helped by repeatedly telling this student to "Pay attention!" It is up to the teacher to "capture" multiple oral instructions on tape or by written handout. You may need to

reduce and space out your directions when addressing the needs of this child. Accommodate him for the abilities he lacks neurologically. This can be accomplished by:

- Writing out and/or tape recording multi-step instructions;
- Numbering and presenting instructions in the most efficient sequence;
- Breaking all tasks down into manageable segments and presenting them a few at a time;
- Making sure the student understands your instructions- don't assume that repeating them back to you means that he will remember and can follow through;
- Pairing the student with NLD with a nondisabled "buddy" who can remind him of "the next step;"
- Teaching the student mnemonic devices for short term memory enhancement;
- Checking with the student at frequent intervals to be sure he is not "lost" or confused.

Makes very literal translations

The student with NLD tends to make very literal translations of speech and text. Her images are concrete and her ability to make sense of abstract connotations and inferences is poor. She will, in all instances, use and interpret speech literally. This child lacks the capacity to decipher colloquialisms or metaphorical expressions. She will not know when she is being teased or duped. It is up to the teacher to provide an accurate bridge between the child's interpretation of language and the actual meaning of what has been said or written. In this way, the student with NLD can more easily determine the gist of a conversation or literary assignment. Her responses will then become more appropriate.

When abstract concepts must be used, provide additional verbal information, breaking-down and explaining the abstract idea in detail. Avoid making nebulous directives, such as "You need to mind!" or asking vague questions such as, "Are you ready?" Adults need to be specific and interpret abstract concepts, so that this child can make sense of what she hears and reads. This can be accomplished by:

- Explaining what you mean by the things you say which may be misinterpreted;
- Simplifying and breaking-down abstract concepts;
- Starting with concrete concepts and images and slowly moving to abstract concepts and images, at a pace set by the student;
- Understanding that metaphors, emotional nuances, multiple levels of meanings, and relationship issues as presented in novels will not be understood unless explained;
- Teaching the student to say "I'm not sure what you mean" or "That doesn't make sense to me" to give her a specific vocabulary to help her decipher your intent.

Asks too many questions

The student with NLD tends to ask repetitive questions and have trouble letting go of his ideas. He often inappropriately interrupts the flow of a lesson with his seemingly never-ending stream of questions. This can become frustrating for both the teacher and the other students in the class, while the student with NLD remains oblivious to the nuisance he is creating. Remember - - this child learns through verbal mediation. It is his only way of gathering new information. He doesn't learn through observation or "trial and error." A good way to look at it is: If he's not talking, he's not learning. Understanding this should help you to better appreciate his constant questions and monologues.

When this student engages in repetitive verbal questioning, you must validate his need to receive verbal responses (his other senses are not taking in enough information), while at the same time you must find ways to redirect the continuous interruptions of class time and teach appropriate social behavior. Nonverbal reinforcers, such as: using an exasperated tone of voice to show your irritation, raising your eyebrows to denote your displeasure, or even ignoring the child's questions will not get your point across.

Merely answering all of his questions seldom helps, either, as there will always be more questions. This child will not know when "enough is enough."

On the other hand, the student with NLD who is repeatedly reprimanded and told "Don't interrupt!" is in danger of withdrawing because he is unable to discern the appropriate times to ask his questions. This child may clam-up and shut-down completely. Dr. Rourke suggests that specific training be employed with this student in "what to say," "how to say it," and "when to say it." It is important to address this dilemma with extreme sensitivity. This can be accomplished by:

- Answering the student's questions whenever it is possible and practical (other students in the class may actually have the same questions, but be lacking in the verbal abilities to ask them);
- Starting the other students on the assignment and then individually answering the rest of this student's questions;
- Designating a specific time during the day when you can continue a discussion which needs to end at the moment;
- Telling the student you only have time to answer three questions right now (a specific number is important - - don't say "a few"), but that you will be glad to answer three more of his questions during the recess break;
- Specifically teaching the student when it is appropriate to ask for help (i.e. if he will be unable to continue his assignment unless something he doesn't understand is explained to him) and the appropriate methods of doing so;
- Explicitly teaching the rules of polite social conduct, so that the child does not constantly interrupt class activities with his questions.

Is easily overwhelmed

Dealing with the ordinary demands of life and getting through a "normal" day at school requires an extraordinary amount of forethought and determination for the student with NLD. Imagine having to "think" every time you do anything, even routine chores you perform everyday like eating, dressing, and sitting at a desk. You can then start to appreciate why this child is so easily overwhelmed by any variance of routine, by new and unfamiliar situations (or information), and by extraneous environmental stimuli.

The enormous pressure this child faces when attempting to function in a world where no concessions are made for her, and where she is expected to conform to the same standards set for her nondisabled peers, is sometimes difficult to fathom. In her interactions with the staff and her peers on campus, the student with NLD is missing at least 65% of the intent of their communications. And, at the same time, she is attempting to cope with the cognitive, as well as the visual-spatial-organizational demands of attending school. Add to this a continuous overloading of the senses (too much noise, visual stimulation or physical stimulation). The monumental effort mandated to get through a day at school is both overwhelming and exhausting for the child with NLD.

In addition to this extreme exhaustion, slow processing speed and severe organizational deficits make it necessary to lessen the homework/class work load for this child. The student with NLD is usually so exhausted by the time school lets out, she literally collapses upon arriving home. It is unreasonable and unfair, and it places an undue burden upon the child's parents, to expect that this child spend hours each night trying to get through tedious homework assignments. She definitely needs some "down time" after a day at school.

The whole ordeal of attending school full-time, on a daily basis, often proves to be too much for the student with NLD, especially as she enters the upper grades. This is where modified schedules and creative programming must come into play. Have the student attend school for half of the regular school

day, or every other day, with individual tutoring provided in the interim to ensure that she is still meeting grade-level competencies.

The student with NLD must receive academic support as soon as difficulties in any particular area are noted. Because this child is quickly overwhelmed, she is likely to react much more severely to failure than her peers will. The classroom teacher must be aware of the many variables which exasperate and inundate this student. Then the teacher can learn to be proactive in dealing with these influences. This can be accomplished by:

- Diffusing potentially weighty situations as early on as possible;
- Minimizing environmental stimuli (especially visual and tactile);
- Having a consistent strategy to employ when the child can no longer cope due to overstimulation, frustration or confusion;
- Allowing the child to abstain from participating in activities when she demonstrates any signs of overload;
- Eliminating all nightly homework assignments;
- Implementing a modified schedule or other creative programming strategy.

May experience heightened sensory experiences

The student with NLD may experience hypersensitivity to sensory stimulation (visual, auditory, tactile, olfactory, etc.). Normal levels of sensory input can be perceived by this student as too much or too little. He often also has difficulty responding multi-sensory stimuli. This child is unable to process simultaneous visual and auditory input because simultaneous processing is a function of the right hemisphere. He will usually prefer auditory to visual input (and will actually prefer not to look at the person who is talking to him). It is necessary to prepare the classroom environment for this child by removing excessive "visual clutter" and implementing seating changes, if he is troubled by other sensory distractions.

The child with NLD can become extremely agitated by sensory stimulation and distractions. The flicker and hum of florescent lighting can be highly distracting and have been known to have a detrimental effect on the child with NLD. This child may also be hypersensitive to loud or shrill noises, such as: the school bell, PA systems, buzzers on gymnasium score boards and chairs scraping along the floor. He may develop seemingly irrational fears because he is afraid he may be suddenly subjected to ear-piercing feedback from the PA system in the classroom. A hypersensitivity to smell can cause this student to become irritated when working with tempera paint or colored markers. Further, he may respond defensively to what he perceives as "intrusive" touching. The apprehension surrounding such offensive sensory assaults contributes to an increased level of anxiety for this student throughout the school day.

Sensory integration therapy and auditory integration training can help normalize the reactions of a young child who becomes easily overwhelmed by sensory overload. Along with these supplemental therapeutic interventions, it is very important that this child's teacher carefully control the level of sensory input at school. This can be accomplished by:

- Preparing the environment for the child (eliminating known sensory stressors);
- Reducing distractions and situations contributing to sensory overload;
- Focusing on one sensory modality at a time (avoiding multi-sensory approaches to instruction);
- Allowing modifications as needed to deal with sensitivity issues (protecting the child from sounds that hurt his ears or avoiding the use of fluorescent lights in the classroom);
- Talking in a low whisper to a child with extreme auditory sensitivity;
- Ensuring that this child is placed in a classroom location with the least amount of distraction (usually up at the front of the room, away from visual and auditory sources of "clutter").

May develop secondary issues with stress and anxiety

It is impossible for most educators to fully appreciate the high level of anxiety the student with NLD experiences on a daily basis. This child is easily stressed by both internal and external pressures, leaving her extremely emotionally vulnerable. Chronic fears pervade her life and she is prone to developing secondary internalizing disorders. She has profound difficulty adapting to new and complex situations. She may become overly anxious and worry obsessively when she encounters situations where she does not know what to expect or is unable to determine what will happen next.

Furthermore, this child may place inordinate demands upon herself owing to her own perfectionist tendencies. Her self-esteem eventually plummets and she often becomes very self-critical and unable to tolerate making mistakes. Additional stress accumulates in situations where this child feels overwhelmed by the novel or excessively stimulating occurrences happening to or around her. Uncertainty, fatigue, trauma, self-reproach, and sensory overload all contribute to heightened levels of anxiety for the child with NLD.

As I have said many times before, it is absolutely imperative for teachers and parents to do everything possible to minimize the stress a student with NLD experiences. This can be accomplished by:

- Previewing and preparing for all novel situations and transitions in advance;
- Providing a consistent and predictable daily routine;
- Gradually exposing this child to new activities, teachers, classes, schools, etc.;
- Ensuring that this child is safe from physical and emotional abuse; · Avoiding sudden and unexpected surprises;
- Thoroughly preparing the child in advance for field trips, modified schedules, or other changes, regardless of how minimal;
- Talking the child through stressful situations or (non-punitively) removing her from the stressful situation;
- Providing personal space in the resource room or other designated area for regrouping and relaxation.

Imparts the "illusion of competency"

The student with NLD is cognitively intact, usually displaying above-average to superior verbal intelligence. This creates an "illusion of competency" and the expectation for success in school. This child's adult-like manner of speaking and impressive vocabulary give the illusory impression that he is highly competent and understands much more about the world around him than he actually does. Although he may have well-developed speech, practical life skills and "street smarts" are deficient.

Generally, this student has an excellent memory (especially for overlearned rote material). He will amass a seemingly endless stockpile of impressive factual information, demonstrating expertise far beyond his chronological age level. But, this impressive memory capacity is unimodal in nature and breaks down when the child is presented with novel material or placed in situations where he is expected to evaluate incoming information and act appropriately based upon his past knowledge and experience. He lacks higher level comprehension and evaluation skills.

Considering this child's impressive areas of strength, it is not surprising that adults tend to generate such high expectations for him. Verbal intelligence is a highly-touted trait in our culture and the verbal precocity seen in the child with NLD often causes us to overlook or devalue the gravity of the neurological deficits which underlie the vexatious behavioral characteristics presented in this article. All too often educators focus on the "left-brain" strengths of this student and make false assumptions

regarding his competency in other areas, responding to the child as though he were capable of functioning at a much higher level than is actually possible for him.

It is important for educators to appreciate the full scope of this child's disabilities. Even a highly intelligent student with NLD, who has an incredible memory for rote information, will experience trouble with comprehension and organizational skills. He may be capable of memorizing extensive statistical information, while at the same time he forgets the due-date for an assignment or to bring a pencil to class. Decision making and problem-solving skills are other areas of deficiency for the student with NLD which are often not recognized because of his obvious verbal precocity. Dr. Rourke emphasizes that the principal impediment to a successful educational program for the student with NLD is invariably the teacher's "faulty impression that the child is much more adept and adaptable than is actually the case." Consequently, in order to create an appropriate educational plan for this student within a school system which is often oblivious to his needs, it is vital for teachers and other staff members to specifically address this child's severely impaired capacity for fluid reasoning and extreme difficulty in dealing with novel situations. This can be accomplished by:

- Providing a highly individualized educational program;
- Applying age and grade-level expectations with flexibility;
- Emphasizing the strong academic skills and gifts of the child with NLD by creating cooperative learning situations in which his proficient verbal, reading, oral spelling, vocabulary, and memory skills will be showcased to advantage (and his difficulties with writing can be de-emphasized);
- Never assuming this child understands something just because he can parrot back what you have just said;
- Never assuming this child understands what he has read, just because he is a "proficient" reader (has excellent word recognition);
- Offering added verbal explanations when the child seems "lost" or registers obvious confusion.

Within this article, I have offered a number of simple and inexpensive intervention strategies which can be employed in the school environment to enhance the student with NLD's capacity to form compensatory structures, thereby increasing his capacity to cope within the school environment. These relatively minor interventions can make a huge difference in the life of a child with NLD (both present and future). It is the responsibility of educators to ensure an appropriate learning environment for all of their students. You hold the key. You can maximize this child's potential or you can destroy his life.

There really isn't any choice here - - we must all rise to the challenge!

About the author

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