DR. DOUG'S 14 LEARNING FACTORS

These 14 areas affect a child's ability to learn. They are all readily identifiable and treatable.

1. EYESIGHT

The ability to read the letters on the standard eye chart
Some students are near-sighted or far-sighted and / or have astigmatism and simply need eyeglasses to see better. Measuring eyesight is always the starting point, but a child with 20/20 vision can still have vision-based learning problems.

Problems in this area may look like:

- Inability to clearly see material presented on the board or at a distance
- Letters on the page appear fuzzy

2. VISUAL EFFICIENCY SKILLS (VES)

Eye focusing (image clarity), eye teaming (how the eyes work together), and eye tracking (following a moving object or moving the eyes such as when reading)
It takes more than 20/20 to succeed in school. These visual skills relate to how much attention and effort must be spent in order to achieve a single clear image. Unfortunately, most eye doctors don't evaluate these critical visual-based learning skills.

Problems in this area may look like:

- Losing your place when reading
- Difficulty copying from the board
- Headaches when reading or doing close work
- Avoiding reading
- Mixing up columns in math computation

3. VISUAL PERCEPTUAL SKILLS / VISUAL INFORMATION PROCESSING (VIP) SKILLS

Processing of visual sequences, colors, shapes, orientation, textures, and patterns
These skills develop from prior experiences. Visual perceptual skills help add meaning to what is being analyzed visually.

Problems in this area may look like:

- Spelling difficulties, spelling phonetically ("laff" for "laugh")
- Difficulty processing language
- Inability to follow verbal/ written instructions
- Messy, labored handwriting
- Letter reversals / confusion (b,d,p,q) (2,5,s,z)
- Clumsiness
- Difficulty tying shoes, riding a bike, fastening buttons
- Left / right confusion
- Difficulties with map reading, math skills, reading comprehension

Roughly 80% of the human brain is allocated to processing visual information. If VES / VIP aren't functioning properly, we have to spend much more attention to simply process what we see. Often poor VES lead to blurry or double vision requiring so much additional "attention" to process as a single, clear image that little attention remains for higher order thinking as is needed to develop reading and math skills. Higher order thinking typically involves the use of abstract visual symbols to represent something else, such as speech sounds (in reading / spelling) and time, space, volume, mass, or velocity (in math). This higher order thinking will not come easily, or at all, if the neuro-developmental foundation is weak.

DOUG STEPHEY,
DOCTOR OF OPTOMETRY
MASTER'S IN EDUCATION

626-332-4510
WWW.STEPHEYOPTOMETRY.COM
MOVE LOOK & LISTEN PODCAST

4. LANGUAGE COMPREHENSION

Understanding the meaning of the spoken word

Comprehending spoken language requires the ability to remember the words you've heard in the order they were spoken. But that isn't enough if you don't know the *meaning* of the words you've heard. You can probably read this sentence: "*The most caudal structures in the CANS are the posterolateral surface of the pontomedullary juncture, which is known as the cerebellopontine angle.*" Do you have any idea what this sentence, taken directly from a textbook on central auditory processing disorders, means? Most likely you could read it but didn't comprehend much.

Problems in this area may look like:

- Difficulty with listening comprehension
- Difficulty with reading comprehension

5. WORKING MEMORY

Relates to the ability to temporarily store and process information required for a task

Working memory relates to mental processing speed and the ability to multi-task. Working memory deficits are often the overriding factor in learning difficulties. Difficulties with working memory are similar to problems encountered when trying to run current software on a computer that doesn't have adequate memory.

Problems in this area may look like:

- Struggling with timed tasks
- Changing math functions mid-stream when performing calculations
- Difficulty reading words on a page and simultaneously thinking of their meaning

6. MAGNOCELLULAR VISION

Relates to how fast we see under low-contrast conditions

Magnocellular vision provides input to the attention networks, and to the executive control networks. It plays an important role in multitasking, sequential processing, problem solving, visual and auditory working memory. Deficits in this area prevent the development of the central executive network, which is critical for motion processing, phonological processing, posture, gait, balance, motor coordination, word reading skills, attention, ball-playing skills, how we read lips, and more.

Problems in this area may look like:

- Difficulty with many of the previously mentioned areas
- Difficulty initiating appropriate behavior or inhibiting inappropriate behavior
- Difficulty multi-tasking, picking out relevant information, making decisions, social development
- Difficulty developing reading fluency, literacy, math, and science

7. PHONOLOGICAL PROCESSING SKILLS (PPS)

The ability to manipulate the phonemes (individual sounds) in words

PPS are required to blend separate sounds into whole words, segment whole words into their component parts, and move sounds in and out of words to make completely new words. These skills are not typically taught in beginning reading instruction. Phonics programs often assume the learner has these skills intact.

NOTE:

- Students who are competent in this area may still have deficiencies in the visual skills required to develop the automaticity in visual memory to connect how visual symbols (letters) map onto corresponding sounds.
- Even the most current dyslexia research (Drs. Shaywitz and Shaywitz, Yale University) confirms the difficulty with visual-verbal integration skills using functional MRI testing.

8. RAPID NAMING SPEED (RNS)

Involves visual processing speed and word retrieval / word naming

RNS is frequently overlooked in evaluations of reading difficulties.

Problems in this area may look like:

- Trouble with reading speed, fluency, and / or spelling
- Slow sight word reading development
- Sounding out a word that the child has seen hundreds of times
- Difficulty with word retrieval for spoken and written language

DR. DOUG STEPHEY · 626.332.4510
208 BADILLO ST· COVINA, CA 91723

9. MOTOR PLANNING AND SEQUENCING / TEMPORAL PROCESSING

The brain's time-organization system, which is related to and has influence over (yet is independent of) our sensory processing (touch, vision, hearing, etc.)

Deficits in this area may affect general motor clumsiness, receptive speech, expressive speech, and / or organizational thought.

Problems in this area may look like:

- Lack of coordination / general clumsiness, inadvertently slamming doors
- Uses simple sentence structure
- Hates writing because of the memory load (word sequencing, letter formation, capitalization, grammar, spelling, punctuation, etc.)
- An inability to process oral information in sequence (i.e. follow multi-step directions in order)
- Uses vague words like "stuff" and "thingie" when speaking
- Mumbles, stutters, stumbles when trying to retrieve words
- Unorganized, messy, disheveled appearance and environs

10. STRESS AND ANXIETY

Many struggling kids suffer from stress and anxiety

Recent research shows that struggling with learning and standing out from one's peer group increases the production of cortisol, the stress hormone, in the brain. This, in turn, affects memory development, which increases stress and anxiety further. Often these kids are treated with Ritalin or one of its derivatives, covering up the underlying neuro-developmental deficits that are exacerbating the issue.

Note:

Ritalin and similar drugs, which are related to speed, do have a place in treatment and controlling behavior, but underlying neurodevelopmental skills are frequently the underpinnings of WHY these kids develop attentional disorders. We should be assessing and treating these areas to reduce the stress and anxiety caused by related struggles.

11. AUDITORY PROCESSING

The ability to identify, sort, process, and make sense of what one hears

Children with auditory processing deficiencies are often accused of being lazy, crazy, or just not paying attention when in fact they cannot process sounds quickly. Because of the inability to process sounds at normal speed they are constantly trying to catch up to what they have heard, a frustrating and exhausting task that leads to simply tuning out. This frustration is similar to listening to someone speak with a very thick accent. Separating out the words becomes a daunting task, and it is easy to lose track of what is being said.

Problems in this area may look like:

- Inability to follow oral directions
- Tuning out verbal commands / instructions
- Losing track of multi-step instructions presented orally
- Daydreaming / distractability when information is presented orally

12. PRIMITIVE REFLEXES

Protection and survival reflexes that bypass conscious control as a biological imperative

Primitive reflexes are like preloaded software located in the brainstem below the level of conscious awareness or control. They serve as the pillars upon which we develop and use our neurological motor and sensory systems. Many of the areas listed above are built upon a system that has integrated these protection and survival reflexes.

Problems in this area look like:

- Difficulty in many of the areas already described including: visual processing, auditory processing, motor skills, hand / finger skills, speech / language, memory / attention, etc.
- Difficulty attending to tasks
- Perpetual state of "fight, flight or freeze" which can manifest as stress, anxiety, combativeness, belligerence, headaches, irritability, brain fog, etc.

13. NUTRITION

The core of optimal human development

Proper nutrition, especially the consumption of essential fatty acids, is essential to the correct functioning of every cell membrane in our bodies, including the cell membranes that transmit messages throughout our central nervous system. Nutritional deficiencies can and do play a significant role in a child's ability to pay attention, read, and learn.

Problems in this area look like:

- Any of the previously mentioned issues, as proper nutrition is at the very foundation of all other development

14. GENETIC PREDISPOSITION

The types of problems described here may run in the family. Neuroscience tells us that many of these problems can be helped, however, when diagnosed or treated, preferably early, but it's never too late. Kids who have received ineffective treatments --which have likely missed the underlying neurodevelopmental dysfunctions-- come to believe that there is something wrong with them. These kids grow tired of having their hopes raised only to fail again when they simply are unwilling to try anymore. The longer a child struggles, the more likely "learned helplessness" is to set in and spill over into other areas where she had previously been successful.

TESTABLE, TREATABLE, TRAINABLE

These factors are identifiable. They affect everything we do including our ability to process information.

"I offer a comprehensive evaluation that identifies and treats neurodevelopmental dysfunctions using specific diagnostic tests and interventions. My goal is to treat the root causes of your child's struggles. The education system, when it finally offers help, is doing the best it can with the available information. Unfortunately, that is likely failing your child. Most often the system labels struggling students and lowers its expectations of them by offering modifications, accommodations, and / or compensations. The result is usually frustration, vexation, and irritation. Until the neurodevelopmental dysfunctions that lie at the foundation of your child's struggles are recognized and treated, he or she will continue to struggle unnecessarily. "

~Doug Stephey, O.D., M.S.

ABOUT DR. STEPHEY

Dr. Stephey became interested in the connection between vision and learning as a student in optometry school. He found it so intriguing that a patient could identify the letters on the eye chart with ease but could have tremendous difficulty with close-up visual tasks such as reading. Although he was well-trained in vision-based problems, he continued to explore the connection between learning and vision. Later in his career, while a professor at the Southern California College of Optometry, Dr. Stephey returned to school and received his Master's in Education, but there were still so many questions to ask and answer that his exploration continued. And still does.

Dr. Stephey has received training and / or certification in

- The Phono-Graphix Reading Method
- Interactive Metronome (Millisecond Timing Clock)
- The PATH (Magnocellular Vision) Program from Perception Dynamics
- The Assessment and Treatment of Retained Primitive Reflexes
- Postural Deficiency Syndrome / Proprioceptive Dysfunction Syndrome
- The LIPS program from Lindamood Bell
- The Listening Program
- InTime
- Integrated Listening
- Samonas Sound Therapy
- Applied Nutrition

STOP THE STRUGGLE

If your child is struggling in school or out, despite interventions such as tutoring, therapies, and / or special education services, most likely there's an underlying issue at the neurodevelopmental level. Until these issues are identified and evaluated, more interventions will mean more frustration and / or extremely slow progress. Contact Dr. Stephey today for a comprehensive evaluation of the 14 learning factors that are probably impacting your child's lack of success.

For more information about improving your quality of life or your child's through improved vision, listen to Dr. Stephey's Move Look & Listen podcast. Available through your favorite podcast player.

DR. DOUG STEPHEY
626.332.4510