

# Thinking in Three Dimensions

By Karen M. Wicks, Ph.D., Learning Specialist

The average child in American today is brought up on a diet of visual stimulation, be it television, video games, or the computer. The demands of academics are poorly understood by many of our brightest and most talented young people. A large percentage of these exceptional individuals have great proficiencies in one area with surprising and unexpected deficiencies in other areas. What is optimized (deliberately or inadvertently) for one function may involve fundamental elements that make it unsuited for another function; a special proficiency in one area sometimes involves a corresponding deficiency in another area. Understanding the functions of the two hemispheres of the brain, which provide different, but complementary approaches to the learning process, is essential to help these children succeed. The left hemisphere specializes in verbal, linguistic, symbolic, logical, formulaic, mathematical, linear, sequential, and organizational thinking—highly valued skills in academics, while the right side incorporates visual, spatial, conceptual, intuitive, problem-solving, pattern-seeking, geometric, creative, associative, holistic thinking. As a result, many predominantly right-brain thinkers are hampered in their learning by the inability to easily and quickly translate the symbols of letters or number operations into meaning. They “see” the world through a different lens, or perspective.

A prevalent right-brain gift that can simultaneously hamper a learner is **dyslexia**, the hallmarks of which may include one or more of the following: fatigue and/or blurriness while reading, poor reading fluency, stumbling over words that look alike (e.g., *quiet*, *quite*, *quit*), skipping words for which the student has no clear meaning, inconsistent ability to read small function words (i.e., *that*, *an*, *in*, etc.), irregular ability to identify the spoken spelling of a word, and the necessity of re-reading several times to fully comprehend. Dyslexia is a phonologic weakness that affects the student’s ability to correctly interpret the sounds and shapes of letters and the segmentation of words; the reader confuses the sounds of language with their written representation. The ability to temporarily store bits of verbal information is poor, thus compromising the learner’s ability to remember spelling rules, letter combinations, etc. Yet, at the same time, these individuals have strong thinking and reasoning skills that give them a different brain pathway to understand information through context. Their kind of mind is often a mystery to parents and teachers, and they are often accused of laziness and willfulness, when in fact their brains are looking for patterns, rather than symbols, as the first line of defense for learning. Overcoming their phonologic weakness is key to their success as fluent readers, and, since reading fluency is critical to mastering academic material and becoming a successful learner, dyslexics need immediate and sustained intervention before they

become discouraged and “check out” of the learning process and the ever-increasing reading demands of school.

Effective remediation requires a systematic and explicit program to reverse developmental receptive language dysfunctions. Students who have not received appropriate help by fourth grade are at a severe disadvantage. Fourth grade is a watershed year, in which students are expected to have mastered the ability to go from *learning to read* to *reading to learn*, and, if they have not solidified the first level—*learning to read*, they become even further behind in the second level—*reading to learn*. Each year they lose more ground, until they may become overwhelmed with the learning process, become disheartened, and give up on themselves. A poor self-image often leads to extreme dependencies, attention inconsistencies, disruptive behaviors, and even health challenges.

The scientific research to date is clear that a dyslexic child needs as much as 150 to 300 hours of instruction of intensive and explicit instruction to close the reading gap between himself and his peers. (See Sally Shaywitz’s *Overcoming Dyslexia: A New and Complete Science-Based Program for Reading Problems at Any Level*.) The basic circuitry for linking letters to sounds is disrupted in dyslexic readers. The lower-level language function (decoding) blocks access to higher-order language processes (comprehension), thus making it difficult to gain meaning from the text on the first reading. Thus, the student requires sustained intervention to remediate the phonologic weakness, which is best accomplished by focusing on pattern recognition and symbol interpretation, while at the same time tapping into strong visual-spatial intelligence through three-dimensional imaging to compensate for the poor neural circuitry, thus allowing the student to access stronger higher-level thinking and reasoning abilities. Sadly, many school systems consider a reading level that is one year behind grade level to be acceptable, while the child struggles, becomes discouraged, and falls even further behind. A poor reader never catches up without intensive and explicit reading therapy.

In an effective program for dyslexic students, a minimum of four hours weekly is required to introduce, practice, and reinforce phonemic awareness (recognize the sounds of the English language code), effective pattern recognition (identify the sounds with words), de-code words into meaning, and utilize reading comprehension strategies (identify the important pieces of information necessary for convert the passage to real-life meaning).

Dyslexic students are primarily right-hemispheric coders, so their minds learn best by starting with the concrete; they learn by doing, touching, moving, and being in the middle of things. Thus, it is essential to

capitalize on their right-brain strengths as the bridge to left-hemispheric functions. To make this leap, visual, spatial, and haptic or kinesthetic activities effectuate communication between hemispheres.

I believe strongly that if we encourage and promote a child's strengths and use them to remediate areas of weakness, we will encourage learners to improve both their skills and their self-esteem. These individuals have many strengths that will enable them to make unique contributions to society. The first step is to guide them to the realization of how their unique blend of strengths and weaknesses will serve them well in life.

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Dr. Wicks holds a Ph.D. from New York University. She is a former professor and administrator, director for curriculum and instructional development at the College Board—the SAT people, and a leading expert in learning styles. She is co-founder of *Edvista Learning Centers*, Marlton, New Jersey. Readers may contact her at 856.988.0990 or [info@edvistalearningcenters.com](mailto:info@edvistalearningcenters.com)