

Multi-Sensory Approaches to Teaching Reading: A Neurodevelopmental Review

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In the 1930s, researchers began clinical studies with children and, as a result, they developed multi-sensory methods to teach children to read and to achieve in other areas. Instruments of assessments were also developed. Many individuals contributed to this effort including Samuel T. Orton (1937), a neurologist; Grace Fernald (1943), an educator; Mildred McGinnis (1963), a speech pathologist. Still others: William Crickshank, Ray Barsch, Marianne Frostig, Newell Kephart, Samuel Kirk, and Helmer Myklebust. Many methods used today find their roots in the work of these people. Many will say their foundation is the Orton-Gillingham method. (Lerner p. 30)

Currently, the Orton-Gillingham website (www.orton-gillingham.com) states that:

Every Student Benefits from Multi-Sensory Education -Based on the time-tested Orton-Gillingham method of reading instruction, the Institute for Multi-Sensory Education (IMSE) offers a revised and expanded multi-sensory approach that provides students the opportunity for success and benefits every learner. For over a decade this research-validated approach has been successfully implemented by teachers to empower children at all three tiers of instruction to dramatically reduce reading failure. IMSE programs provide the essential five components of an effective reading program as stipulated by the NICHD and the National Reading Panel and supported by the 2001 No Child Left Behind Act: Phonemic Awareness; Phonics; Vocabulary Development; Fluency; and Comprehension Strategies.”

Interestingly, Samuel T. Orton believed that “the lack of cerebral dominance” was “a cause of children’s language disorders.” (Lerner, p. 30) During that same period of time, there were others working on the same issues that Orton did and shared the belief that one cause was a “lack of cerebral dominance.” These men were Dr. Temple Fay, Dr. Robert Doman, Dr. Carl Delacato and Glenn Doman of the *Institutes for the Achievement of Human Potential* in Philadelphia. On their current website http://www.iahp.org/fileadmin/PDFs/Five_Principles.pdf there is a paper describing five principles and 28 procedures. This paper begins this introduction with sensory input, then motor output and finally in Principle Three and Procedure 17, Doman introduces cortical dominance. Previous principles and procedures lay the groundwork for establishing this cortical dominance.

This procedure accomplishes the attainment of the final ontogenical development which is unique to man, cortical hemispheric dominance. It is this dominance that provides human beings the ability to deal with symbolic language, i.e., speaking and understanding spoken language and writing and understanding written language.

The control of all skilled functions by a single cortical hemisphere results in unilaterality so that the individual consistently uses the right eye, the right ear, the right hand and the right foot or vice versa, depending on which hemisphere is dominant. Hemi-spheric dominance is genetically

determined but is it is subject to influences such as physical trauma or cultural factors. (Doman P. 12)

Much of what this month's article discusses applies to all disciplines, however, the focus is on the teaching of reading. I have varying degrees of familiarity with each of the following methodologies. There is a sense in which it is difficult to evaluate a program that you have not actually used with students. So I will limit my exposure to brief introductions including the words of the proponents extensively and then some general comments from the neurodevelopmental perspective. Perhaps sometime in the future I will have an opportunity to dig deeper.

1. The Slingerland® Tests for Identifying Children with Specific Language Disability (dyslexia) and the Slingerland Approach

<http://www.slingerland.org/educators/screening.html>

The Slingerland tests are designed to screen a group of children to determine those with specific language disabilities (dyslexia). The earlier children are identified, the sooner prevention or remediation can begin in a preventive program of instruction before they begin to fail. Early patterning through sensory channels serving language can strengthen neurological pathways for learning. The tests also aid in identifying children whose current language difficulties may continue beyond periods of developmental and maturational lag to become persistent specific language disabilities in later grades.

Reading is only one component of the whole language function. Writing, spelling, written and oral express are also involved. Some children, despite average or even above average intelligence, have difficulty learning in all the language areas. Others may learn to read but are unable to spell or to succeed in using expressive language required for everyday school performance. It is desirable to identify these students as early in school life as possible, so that education can provide step-by-step structured learning patterns to bring about the simultaneous use of auditory, visual and kinesthetic-motor channels necessary for perceptual intake, integration and output. (Slingerland Institute)

I have used this test and it was a helpful tool in identifying areas where there were difficulties. Of course, the test itself does not provide any remediation, however the Slingerland Approach addresses these issues.

The Slingerland® Approach is a classroom adaptation of the Orton-Gillingham method. This structured, sequential, simultaneous, multisensory teaching approach is designed to help dyslexic students and other struggling readers with speaking, reading, writing and spelling. The flexibility of the approach has also made it effective in general education classrooms as well.

All learning takes place with involvement of Auditory, Visual and Kinesthetic-motor processing. It is in the linkage of these channels that dyslexic children often have difficulty. The Slingerland® Approach starts with the smallest unit of sight, sound, and feel -- a single letter. Expanding upon that single unit, students are taught through an approach that strengthens inter-sensory associations and enables the strong channel of learning to reinforce the weak. It is thorough and integrated, providing a complete language learning experience.

From single letters, students are taught how to associate sounds with their visual counterparts and put these letters together to spell words. They add suffixes and prefixes, and write phrases, sentences and paragraphs. They are also taught the phonetic rules and generalizations of the English language. Rather than a weekly spelling list, children work with a dictation paragraph

that provides practice with punctuation, capitalization, and language mechanics, as well as spelling. Through this carefully guided approach, they learn to put these skills to functional use while developing confidence in their own abilities for written expression.

A structured phonetic approach to teaching decoding helps the students become successful in reading individual words and learning the structure of the English language. In preparation for reading, students learn how words go together in phrases to create meaning and learn the vocabulary that will be needed to understand a reading selection. The teacher then carefully structures that selection to develop fluency and comprehension of the passage.

Slingerland Advantages

- * A simultaneous multisensory total language approach
- * Documented success
- * Can be used in any classroom setting
- * Can be used with any reading materials
- * Meets instructional needs of children in general education and those with dyslexia or those experiencing language difficulties
- * Successful * Efficient * Proven * Cost-effective (Slingerland Institute)

2. Lindamood-Bell

One aspect of this program is the LiPS (Lindamood Phonemic Sequencing) program. It addresses the difficulty of lack of or weak Phonemic Awareness, a stepping stone to reading. Back in the 80s when Lindamood (at that time) was beginning I used their program, Auditory Discrimination in Depth (ADD) which, I believe, is a precursor to LiPS.

The Lindamood Phoneme Sequencing® (LiPS®) Program successfully stimulates phonemic awareness. Individuals become aware of the mouth actions which produce speech sounds. This awareness becomes the means of verifying sounds within words and enables individuals to become self-correcting in reading and spelling, and speech.

It is common for individuals to gain several grade levels in decoding ability in four weeks to six weeks of intensive instruction, or to make further gains in speech-language after hitting a plateau under traditional speech therapy. (Lindamood-Bell)

Another Lindamood-Bell program, Seeing Stars helps develop symbol imagery which, in turn, helps word recognition, spelling, visual memory, contextual fluency, reading comprehension and other symptoms of dyslexia. (Lindamood-Bell) Lindamood-Bell has other programs that are not as directly related to reading.

3. Davis Dyslexia Correction – The Gift of Dyslexia

Ronald Davis presents dyslexia as a two sided condition – the negative that produces difficulties in learning, especially in reading and language, but also the positive – a different way of thinking producing genius in many who have dyslexia. He introduces a new perspective as a dyslexic himself, “Dyslexia is not the result of brain damage or nerve damage. Nor is it caused by a malformation of the brain, inner ear or eyeballs. Dyslexia is a product of thought and a special way of reacting to the feeling of confusion.” (Davis, p. 8) He talks about how people are either verbal or non-verbal (in pictures) thinkers. (Davis, p. 8-10) Neurodevelopmentalists use the terms of conceptualization and visualization. As neurodevelopmentalists, we seek to develop both ways of thinking, as we do not have control over every learning situation. According to Davis,

dyslexics have trouble with around 200 “trigger” words that are abstract and therefore they can not picture these words. (Davis, Chapter 4)

Davis uses a multi-sensory approach to help the dyslexic develop a “mind’s eye” and master the symbols she needs to read. His students mold letters out of clay, put them in order and learn to say the alphabet forwards and backwards. Further, they mold the letters of words and objects that represent those words. When it comes to those abstract trigger words, the individual molds a representation of that word. (Davis Chapter 31 and 33)

4. The WILSON Reading System

The WILSON Reading System® is a highly-structured remedial program that directly teaches the structure of the language to students and adults who have been unable to learn with other teaching strategies, or who may require multisensory language instruction. It is based on research and Orton-Gillingham philosophy and provides a teacher-friendly, comprehensive program for older students.

The Wilson Reading System specifically addresses the learning style of students with a language-based learning disability; however, it is beneficial to any student lacking basic reading and spelling skills. It is appropriate for students with beginning literacy skills through grade six level skills if the student has not mastered the decoding and spelling process. Instructor and student materials may be purchased individually or in instructional kits. (Wilson Language)

My friend and fellow [Academy Northwest](#) teacher, Jeanne Anderson of Orting, Washington uses this system in her tutoring. When I asked her about the unique features she said, “The Wilson Language unique lesson plan is a 10-step plan. Steps 1-5, decoding; steps 1-6, encoding; steps 9-10 reading comprehension. The finger tapping is used in spelling of sounds and words, encoding, is applied to segmented sounds, understood through demonstration, much like a series of dance steps that are understood through actual practice.” (jjanderson@integrity.com)

5. Barton Reading and Spelling System

In fall, 2010 I had the opportunity to attend a workshop given by Susan Barton and subsequently used her screening for two of my clients who were struggling with reading – one at about the 1-2 grade level and the other at perhaps 2-3 grade level. Neither passed the test – meaning they were not ready to use her system. Having used the Lindamood Auditory Discrimination in Depth (now LiPs of Lindamood-Bell) I could see some similarities. Barton told parents who attended her workshop that they should look for a Barton certified tutor or at least someone using an Orton-Gillingham based program.

The Barton philosophy and System are well presented in Sally Shaywitz, M.D.’s book, *Overcoming Dyslexia*

As virulent as any virus that courses through tissues and organs, dyslexia can infiltrate every aspect of a person’s life. It is often described as a *hidden* disability because it is thought to lack visible signs, but dyslexia is hidden only from those who do not have to live with it and suffer its affects. (Shaywitz, p. 4) Dyslexia is a complex problem that has its roots in the very basic brain systems that allow man to understand and express languages. (Shaywitz, p. 5)

Shaywitz, MD also tells her readers that we now have brain images that verify that there is a difference in brain structure. Her purpose in writing the book is to bridge the gap between what neuroscientists know and how teachers teach children. Dyslexia affects 20% of our children or 10 million in America. (Shaywitz p. 6)

The Phonological Model describes our “language system” as a “graded series of modules or components...the operations within a system are rapid and automatic, and we are unaware of them...” (Shaywitz p. 40) These components are: Phonology – sounds, Semantics – vocabulary/words, Syntax – grammatical structure; and Discourse – connected sentences. (Shaywitz p. 41) So, the Barton system begins with sounds.

The author presents two principles for teaching a child to read:

- 1) “Develop a life span perspective. An effective program is tailored to a child’s or adult’s specific developmental needs.”
- 2) “Remediate the phonologic weakness and access the higher level thinking and reasoning strengths (through accommodations). (Shaywitz p. 172)

Shaywitz covers much more in her book, but more to the point is the *Barton System for Reading and Spelling* as presented on www.bartonreading.com:

”The Barton Reading & Spelling System is a one-on-one tutoring system that will greatly improve the spelling, reading, and writing skills of children, teenagers or adults who struggle due to dyslexia or a learning disability. You can change their entire future by teaching them to read, write, and spell.” (www.bartonreading.com) From the information on the website, it appears to be a highly structured system, based on Orton-Gillingham.

Questions to Ask Before Using Any Multi-Sensory Approach:

As a neurodevelopmentalist, I evaluate systems based on the neurodevelopmental approach. I recognize that people have used the above approaches successfully, but as you investigate solutions for your child/children consider the following:

1. Is my child ready for this approach? As mentioned earlier, two of my clients were not ready – based on the Barton screening they needed prerequisite skills. One readiness factor often missed is auditory processing. An individual who has low auditory processing can not remember all of the sounds she has just laboriously sounded out. By the end of a word, she cannot blend the sounds together to make a word. See “[Phonics vs. Sight Words: the Most Important Piece of Information You Need to Know](#)” by Cyndi Ringoen.
2. Is this approach substantially different from other approaches that I have tried? Parents frequently have investigated and tried so many different approaches they are ready to try anything. They will spend the time, money and effort it takes to help their child achieve. However, often the different programs are based on the same underlying philosophy. Why spend more money for different materials, time learning how to use or more money on tutoring if there is no substantial difference? If you do consider similar approaches, be sure and ask yourself, will this unique feature make a difference?
3. Will my child experience sensory overload by using a multi-sensory approach? Not all, but some children do shut down if there is too much sensory input. These children need an individualized neurodevelopmental plan to normalize sensory input.
4. Does this approach address underlying causes for the difficulty? One key issue is mentioned in # 1. Low auditory process. Another key issue mentioned earlier: cortical dominance. Dyslexia’s most well known symptom, reversals stem from a mixed

dominance. By addressing underlying causes, difficulties in other areas are eliminated. Read Marilee Coot's article: "[Developing Your Homeschooled Child's Long Term Memory and Emotional Control.](#)"

Want to know how the neurodevelopmentalist approaches reading instruction?

1. Read [Rounding the Bases: Chris Learns to Read](#) (or the first edition on clearance sale: [Getting to First Base – Chris Struggles to Read](#)) This chapter book is formatted for easy reading for those learning to read or can be read to children. Follow the family of Chris Wheeler in their journey of finding a solution for this struggling reader.
2. Attend [Brain Development and Reading seminar](#) on February 28, 2011 at 6:00 p.m. Location: 8323 95th St SW. Lakewood, Washington 98498
3. Read the March article of this newsletter: [Reading Instruction: the Neurodevelopmental Approach.](#) At this time, we plan on moving to another topic beginning in April – Brain Research.

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