Sabrina Dick

EDRG 444  
Two Column Notes

*The voice of evidence in reading research:* Neurobiological basis for reading and reading disability.

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| **Ideas and/ or research:** | **Interpretation/ thoughts** |
| “In seeking and gathering evidence, scientists prefer to go directly to the source. For the fundamental understanding of reading, the unequivocal source is the brain” (pg. 417) | This is right on the nose. With everything, we should be look at the source and the desired outcome. If we want a student to read, and do it well, we need to understand where reading begins. Reading truly begins with the brain. |
| “Functional imaging is a tool; its optimal use relies on the foundation provided by previous investigators who gathered evidence….”  “Rather than being a separate or isolated pursuit, brain imaging studies are influenced by the large body of science that came before and that continues to emerge from laboratories around the world.” (page 418) | I find it very interesting that our knowledge is a stem of what researchers started.  With everything there is a beginning and then growth and change. |
| “Dyslexia, a developmental disorder, is characterized by an unexpected difficulty in reading in children and adults who otherwise possess the intelligence, motivation, and education considered necessary for developing accurate and fluent reading.”  Dyslexia is the most common and most carefully studied of the learning disabilities, affecting 80% of all individuals identified as having LD” (pg. 419) | Difficulty in reading. I could imagine how dyslexia affects other aspects of knowledge. Not because there is a lack in “intelligence, motivation and education” but because reading is such a core aspect of knowledge. Without a solid foundation of reading skills, many students will struggle in all areas.  Wow, I had no idea the number was so large. I can see why it is the most carefully studied. |
| Dyslexia is both familial and heritable. Family history is one of the most important risk factors, 23-65% of children who have a parent with dyslexia are reported to have the disorder…..Family history thus provides opportunities for early identification of siblings and often for delayed but helpful identification of adults with dyslexia (pg. 421). | Dyslexia runs in the family. This can definitely be a great help to early identification. I wonder if there is a program that comes to homes (like child find) and determines early intervention. |
| “…. The central difficulty in dyslexia reflects a deficit within the language system. Investigators have long known that speech enables its users to create an indefinitely large number of words by the consonants and vowels that serve as the natural constituents of language. An alphabetic transcription (reading) brings this same ability to the reader, but only as the reader connects its arbitrary characters (letters) to the phonologic segments they represent. (pg. 421). | Speech reflects reading and vice versa.  There are basic reading skills such as phonemic awareness, “alphabetic transcription” that a student with dyslexia are lacking. |
| “…a child has to develop the insight that spoken words can be pulled apart into phonemes and that the letters in a written word represent these sounds. As numerous studies have shown, however, such awareness is largely missing in children and adults with dyslexia. (pg. 422). | Dyslexia is a lack of phoneme understanding.  Is this what the instruction should be based on with these children? |
| “Reading comprises two main processes, decoding and comprehension” (pg. 422). | Students with reading struggles will struggle with decoding and comprehension. |
| The brain is composed of four major lobes: Beginning in the front, they are the frontal, temporal, parietal, and occipital lobes….”  “…the parieto-temporal area, which is pivotal in mapping print onto the phonologic structures of the language system or, more simply, in relating letters to sounds. (pg. 424).  “Occipito-temporal area was also described as critical in reading.” (pg. 424) | Parieto-temporal area processes letters to sound. |
| “The fMRI study in children has proved extremely helpful in providing a beginning understanding of the neural basis of skilled reading. Neurobiological evidence now converges with behavioral evidence to provide a deeper understanding of how children become skilled readers” (pg. 428). | “functioning Magnetic Resonance Imaging” |
| “Evidence suggests that rather than having the smoothly functioning and integrated reading systems observed in non-impaired readers, children with dyslexia have disruption of the posterior reading systems that result in these children’s attempting to compensate by shifting to other, ancillary systems, for example anterior sites” (pg. 433). | There is a disruption in the brain that causes reading difficulty. |
| “Children received a systematic, explicit, phonologically based reading intervention 1 hour per school day for the entire school year…..made significant gains in reading fluency and demonstrated increased activation in left hemisphere brain regions important for reading, including the inferior frontal gyros and the parieto-temporal and occipital-temporal reading systems “ (pg. 434-435). | Intervention does help! One hour per school day is interesting. I am not sure that students are getting the needed one hour. Some questions that arise are: should it be one on one intervention or a group setting? |

# Works Cited

Shaywitz, S. E., & Shaywitz, B. A. (2004). Neurobiologic Basis for Reading and Reading Disability. In P. P. McCardle, & V. M. Chhabra, *The Voice of Evidence in Reading Research* (pp. 417-442). Baltimore: Paul H. Brookes Publishing Co. .