## **Learning Support: Responsive Teaching**

## ***A weekly blog for Forest Ridge faculty; format generally the same***

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## **February 13, 2019. Theme: The building blocks of reading**

## **Seen and heard: Cool stuff promoting brain-based learning and metacognition**

Just a quick reference here to our Weebly: set up by Christine Wichter, with contributions from several other folks on campus.

Check out [Learning Support>Accessibility>Immersive Reader](https://frinstruction.weebly.com/learning-support.html). This learning tool is embedded in OneNote. Anyone can access it and have any text in OneNote read aloud to her. This is a useful tool for struggling readers and probably for ELL learners, in that you hear sounds and can connect them to words—the fundamental connections needed for fluent reading.

### **Evidence-based corner**

Unlike language, reading has no specific genes or circuits in the brain. Circuits of neurons that were originally designed for vision, language, and cognition learn to forge whole new connections. These circuits are created through hundreds of exposures (or thousands in the case of those affected by dyslexia) to letters, letter patterns, and words.

It took the human species thousands of years of insights to develop the first written alphabet (which is a system of symbols for each SOUND).

Children are expected to gain the same insights in obviously far less time. Each new reader must CREATE a new reading circuit. We are wired for sound, but have to add on the skill of processing print, other wise known as learning to read.

The complexity of learning to read extends to math. To learn math, we need fluency in both:

1. Numerical magnitude: developed in the course of evolution and evident in infants: approximate numerical value of a collection of objects AND representations of space and quantities such as length or time.
2. Exact verbal code: naming, counting, recalling, explaining. The verbal aspects of number and arithmetic depend on phonological representations in long-term memory—deeply connected to our ability to read.

Sources:

Maryanne Wolf, [Proust and the Squid: The Story and Science of the Reading Brain](https://www.amazon.com/dp/B00NLL4PFG/ref=dp-kindle-redirect?_encoding=UTF8&btkr=1)

Rosemary Tannock, [PPT presentation](https://www.ed.gov.nl.ca/edu/k12/studentsupportservices/prolearn/pdf/PL_Guidance_Psych.pdf), section starting at slide 60.

Stanislas Dehaene: [How the Brain Learns to Read.](https://www.youtube.com/watch?v=25GI3-kiLdo)

### **Strategies and structures**

Phonics is absolutely essential; as adults we have forgotten how difficult *learning* to read is, since we have now automatized word recognition. The adult brain STILL processes letters, but now in quick, parallel form. ---If you have a struggling reader, observe and inquire as they read aloud, to see if they are struggling with decoding. ---Teaching letter-sound correspondence is essential. Faster decoding will lead to better comprehension. ---Check with your learning specialists if you have a reader you are concerned about.

Infuse games and manipulatives for math to reinforce number sense; you may think these seem ‘childish’, but for students with holes in their cognitive processing of reading and number sense, these hands-on techniques can be more powerful than you think. Also, games help with concentration.

Neuroplasticity indicates that learning is always possible (even for us old adults, though more slowly), so don’t give up on our teens! When we notice patterns of weakness, we need to investigate, brainstorm, and experiment with interventions.

Patience is required: for example, reading Chinese requires a different set of neuronal connections from those needed for English. Remember, acquisition of academic-level English takes YEARS. English is the most complicated world language to achieve fluency in, due to its alphabetic irregularities.

Cursive writing is good for the brain (and well-researched): it adds a circuit that has to do with the gestures of writing, which helps children learn to read.