

# The Unconventional Learner™: Hidden in Plain Sight

By: Sylvia R. Cadena Smith, Ed.D.  
Date: 10-17-12

Students who perform below their intellectual capabilities are often considered underachievers, lazy, or just not very smart. These students tend to be among a hidden group of learners that have difficulty with visual processing of information delivered via conventional means (i.e., in a manner typical of traditional classrooms). Frequently, these students are mislabeled as being unwilling or incapable of learning when, in fact, they *can* learn, but are 'unconventional' in *how* they process information.

Identifying "unconventional learners™" in the classroom has been challenging due to the fact that little was known about *how* the brain processes information. In the last 15 – 20 years, brain research has found that the ability to 'visually process' information is critical to learning. It is now understood that the act of 'visual processing' is primarily a physiological issue that is not related to an individual's ability to cognitively process information or to intelligence. Therefore, when students' *visual processing* is weak, their overall ability to cognitively process information delivered in a traditional classroom format is negatively impacted. This is largely due to a 'disconnect' in *how* information is originally received and processed by the brain.

A common challenge faced by these learners is their limited ability to visually process information in a logical and organized manner due to irregular or overactive *saccadic eye movements*. Robinson (1981) states "The purpose of the saccadic system...is to reorient the eyes quickly in space. Since vision during saccades is poor (no information is captured by the brain), this system has specialized in making eye movement very rapid to minimize the time during which vision is lost." If the saccadic eye movement does not reorient quickly and accurately during reading, the processing of visual image(s) presented in a *fixation* (the pause in movement between saccades during which the brain captures information), will be disrupted.

'Unconventional learners' may have difficulty reading due to their disrupted visual intake process. This is because the act of reading is a complex visual and cognitive task that involves the seamless integration of specific receiving, processing and memory skills, including the critical eye movements that the brain uses to estimate the proper distance to move the eye from one focal point to the next. Hochberg (1970) described the eye movement process required to read print or view a landscape as a *series of installments*. This series of installments is described in the article "*Eye Movement Makes Reading Possible*" as:

"The three types of ocular-motor eye movements that occur during reading:

1. Fixations – when the eye pauses momentarily on a line of print to take in information or integrate information across fixation pauses.
2. Forward saccades – when reading English script, the eye seems to jump from left to right on a line of print to bring the eye to the next fixation pause.
3. Regressions and rereads – where eye movements occur backward from right to left." (Samuels, Hiebert, & Rasinski, 2010)

Fowler (2000) proposed that the importance of identification and localization of these three key elements includes not only eye movement, but also the cognitive skills of memory and association of meaning and language that are intricately involved in the act of reading. These visual processing skills play important parts in producing a stable image of the word on the page and enable smooth tracking of the eyes along a line of print. Efficient left-to-right tracking and the smooth-downward right-to-left "sweep" are critical visual processing skills for students to become fluent and comprehensive readers. Students who struggle to control their fields of vision, resulting in word and line skipping and/or pattern glare (words appear to move on the page), due to irregular or overactive saccadic movements are likely to be poor readers, impacting their performance in virtually every academic area.

According to the 2000 National Reading Panel Summary Report, fluent readers possess the ability to read text with speed, accuracy and proper expression. A key inference by the National Reading Panel Report for reading instruction is that “*Children who do not develop reading fluency, no matter how bright they are, will continue to read slowly and with great effort.*” (National Institute of Child Health and Human Development, 2000).

Students who do not respond well to a ‘conventional’ classroom environment often become frustrated, frequently due to problems with reading fluency and comprehension. They know they *can* learn but struggle to demonstrate it in a traditional school setting. As a result, many of these students drop out from learning and may exhibit negative social behaviors, creating a downward learning and social spiral.

Improving teachers’ and parents’ recognition of the multidimensional aspects of how the human brain processes visual information positions them to better understand and meet the needs of students. Helping students to recognize and adjust to their own unique visual processing styles will empower them to embrace an “*I can*” and not “*I can’t*” attitude in the classroom. This awakening will help educators, parents and students to begin to constructively solve the mystery of why students struggle to retain information as they read and will reveal the potential of the ‘unconventional learner™’ that is *hidden in plain sight* in every classroom.

A free informal *Visual Processing Checklist* can be downloaded from the See-N-Read® Reading Tools website [www.see-n-read.com](http://www.see-n-read.com) (“What’s New” tab) to help teachers and parents to informally assess if students may be lagging behind due to visual processing issues.

## REFERENCES

---

- Fowler, S. (2000). *Visual problems associated with reading and spelling difficulty*. Professional Association of Teachers of Students with Specific Learning Difficulties (Information Sheet Number 5).
- National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.
- Hochberg, J. (1970). *Components of literacy: Speculations and exploratory research*. In H. Levin & J. P. Williams (Eds), *Basic studies on reading* (pp. 74 – 89) New York: Basic.
- Robinson, D. A. (1981). *The use of control systems analysis in the neurophysiology of eye movements*. Annual Reviews Neuroscience. Johns Hopkins University, Baltimore, Maryland.
- Samuels, J. S., Hiebert, E. H., & Rasinski, T. V. (2010). *Eye Movements Make Reading Possible*. Hiebert, E.H., & Reutzel, D.R. (Eds.). In *revisiting silent reading: New directions for teachers and research*. Newark, DE: International Reading Association.