

BE DONE

with Reading Deficiencies

**To turn around a decades-long trend of disappointing reading gains,
documented year after year in
National Assessment of Educational Progress (NAEP) reports,
we must undergird literacy *instruction*
with reading strength *training*.**

Critical Need

Approximately 30% of students in grades 3-12 read below the basic reading level for their grades. Within our nation's carefully designed middle and high school reading classes are children whose reading difficulties were not identified until they hit a "fourth grade slump;" they faltered in fifth grade, and their reading skills ceased growing in sixth. Data suggests that approximately 40% of children with reading deficits will fall into this category (Leach, Scarborough, & Rescorla, 2003).

This hidden handicap plagues even highly intelligent and gifted students and cuts across all ethnic and socioeconomic strata. Many adolescents with reading deficiencies are so studious that they manage to make good grades. However, their weak reading skills will eventually limit their ability to pass tests, attend college, and reach their careergoals.

Two-thirds of students who cannot read proficiently by the end of the fourth grade will end up in jail or on welfare (WriteExpress Corporation, 2010).

Reading deficiencies plague students in all demographic areas, with devastating effects:

- Fewer students earn diplomas
- More students become juvenile delinquents
- Fewer students are equipped for college course work
- More special education students are underserved
- Fewer students have requisite workforce skills
- More gifted athletes are denied college scholarships

The healing begins when we tell students that they do not have some dreaded disease from which they will never recover (Ekwall & Shanker, 1988).

Reading research and initiatives have mushroomed. States have created high-stakes standards and poured millions of dollars into establishing a knowledge base and scores of trained reading professionals.

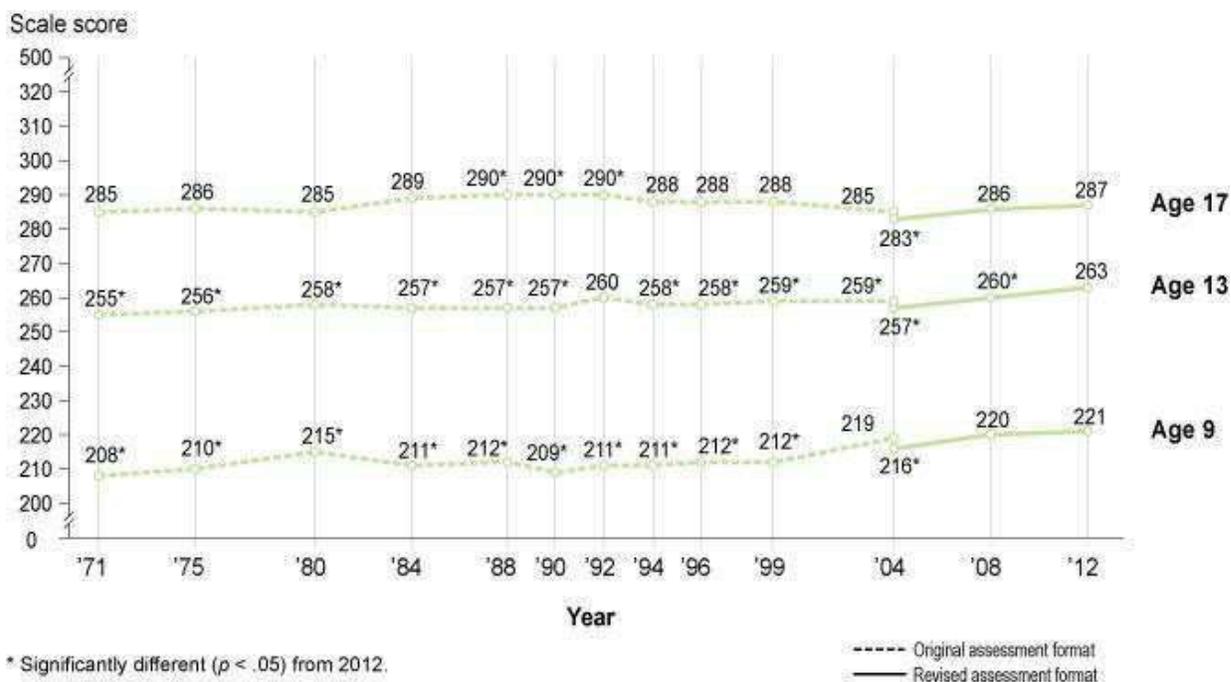
However, the National Assessment of Educational Progress (NAEP) reports a sustained trend of disappointing reading gains for the past three decades, leading us to conclude that the interventions that schools and private providers implement lack utility for struggling readers.

“We shouldn’t be satisfied with these results,” said U.S. secretary of Education, Arne Duncan. “By this and many other measures, our students aren’t on a path to graduate high school ready to succeed in college and the workplace.”

The following NAEP charts display the insignificant reading gains over the past 34 years, despite the national focus and millions of dollars poured into reading initiatives, teacher training, assessments, and technology-based curricula.

Reading gains across the nation have been flat for decades

Trend in NAEP reading average scores for 9-, 13-, and 17-year-old students



BE DONE with reading deficiencies

Students in grades 3-12, who have reading deficiencies, need intensive, individualized reading strength training provided in private weekly sessions. Reading Strength Training (RST) has proven to put a quick end to students' reading ills. Its researched-based reading strategies are common, but the pedagogy is distinctive; RST is delivered in a clinical setting in which the student is totally engaged and the trainer is totally attending.

**One hour of one-on-one
is better than six hours of classroom teaching.**

(Ekwall and Shanker, 1988)

It is the *intensity* of RST---not the amount of *time* in class--- that determines the rate of improvement. Students who received reading strength training in the classroom setting demonstrated one half the progress of the students who were served in private, weekly sessions. One can conclude that teaching provided in a classroom of peers is not intense enough to accelerate reading skill development in one school year or less.

Struggling readers in grades 1-12 should receive intensive reading remediation by a trained RST expert in private, one-on-one sessions for 30-45 minutes, once a week. It is the responsibility of public schools to successfully address students' reading deficiencies. Delivery of this unmatched remediation is a whole new way of saving lives. RST students confirm it.

***“It makes a huge difference.
It’s life changing, honestly, in a huge way.”***

-----Sadie, Gr. 11, 2015

Reading Strength Training (RST)

Unlike many reading programs that cover literacy in toto, RST targets only the basic skills of *phonological processing*, *decoding*, and *fluency* and does not use technology for instruction or practice. RST is successful because it delivers a cure—not mere improvement. And that is the critical advantage.

RST works because its research-based strategies include repetitive drills and practice that scientists have discovered permanently re-wire the brain for reading success (Talan, 2010). See attached article.

Qualitative and Quantitative Data

In addition to students' cumulative school records that document their academic struggles and interventions, RST's formative assessment data for over 325 students from 17 schools in Leon County include students' grades; student, parent, and teacher surveys; student interviews; weekly observation with intensive coaching; statewide assessment and progress monitoring data; embedded assessment scores in technology-based curricula; and videos of sessions that show the holistic impact of RST.

Typical Results

The efficacy of the RST regimen has been vetted over the past 20 years, working with students in the public school classroom, as well as in private sessions, and via research, review of school district comprehensive reading plans, classroom observations, and interviews with parents. The success has been consistent:

- Immediate and sustained improvement of school grades in all classes
- Better testing performance
- More independence in completing homework
- Enhanced self-esteem
- Renewed interest in reading
- Improved speaking and writing skills
- No subsequent enrolment in a remedial reading class
- Success in college
- Success in technical programs or career training

Heather—While working on a reading specialist degree 25 years ago, I was required to complete a weekly practicum with a student, one-on-one, for one hour. Heather was from a middle-upper class family and had educated and attentive parents who drove her 45 minutes one way for this intervention; her mother was a nurse.

When we began, Heather was an 11th grader who read on 6th grade level; she talked haltingly and wrote short choppy sentences, much like a first grader. She had been identified as special education in second grade and was enrolled in intensive reading classes every year thereafter. Additionally, her parents had purchased every reading remediation program or tool on the market. Yet, nine years later, Heather lagged far behind her peers, and her grades were mostly Ds and Fs.

With limited experience with the varied reading strategies and technology available, I simply adhered to my professor's directive:

"Try an intervention. If it works, use it; if it doesn't work, drop it."

Consequently, as I observed Heather's responses to different interventions, I discarded equipment, technology, frequent testing, and writing activities. Sitting side by side, Heather and I engaged in a short list of strategies that addressed decoding, word attack, and fluency. I encouraged her to read low-level books (from her younger sister's collection).

Heather progressed so rapidly, I hardly knew why. Her mother reported that she had begun to read late into the night. Her grades in all subject areas improved, and after only seven months, her reading skills were on grade level. When she started her senior year, she took honors classes. Today she is an elementary school teacher.

Ronnie—RST helped Ronnie conquer his reading deficiencies in one summer of one-hour, weekly sessions. When we began work after his 6th grade year, he could not list words that rhymed with "ook," indicating weak phonological processing skills that normally develop during phonics instruction in the primary grades. (Ronnie had ear surgery in first grade.)

***Phonological awareness appears to be the most deficient language skill
in disabled readers (Lyon & Chhabra, 2005).***

Ronnie's father (an eye surgeon) and his mother alternately helped him with homework and test prep every evening so that he managed to make passing grades---except on the tests, because they were too difficult to read. The parents were shocked to learn that Ronnie was reading on third grade level, despite remediation provided in intensive reading classes at school and via private tutoring four days a week for two hours after school.

After three months of RST —limited to phonological awareness drill, decoding practice, and intensive fluency coaching— I instructed the parents to fire the (elementary certified) tutor and cease spending their evenings helping Ronnie with his homework. The entire family was liberated. Ronnie started 7th grade reading on level as an independent learner and was an A/B student throughout middle and high school. He graduated from a prestigious private university with a master's degree in accounting.

Katie—Katie had been retained in first and second grades and was considered pitiful in many ways; her teachers and school paraprofessionals poured their efforts and nurture into her. In spite of hours of special services from various school staff, Katie was still reading on second grade level in fourth grade. When she came for the initial RST assessment, she kept her head bowed, blushed, and hyperventilated; she was antisocial. While she was not thrilled about yet another reading program, she was faithful to her weekly RST sessions and she began to make better grades.

Within three months, the standardized assessment administered quarterly by her teacher documented that she had raised her reading level from 2nd to 5th grade. The elementary principal and her classmates gave her a standing ovation. She reported, "*On my report card, all of my grades went up—every one of them!*" She raised her state assessment score 35 points and missed passing it by only one point (She passed it the next year.)

Today, Katie is a happy seventh grader, making As, Bs, and sometimes Cs. She conquered reading deficiencies in decoding, fluency, and phonological awareness in just **11.25 hours** of RST.

Conclusion

It is possible to delay or deny students reading success with mismatched methods.

This possibility is a reality for many students served in our schools and by private providers/tutors, as evidenced via classroom observations, interviews with reading teachers, and working with poor readers the past 24 years. RST is a more prudent and productive pedagogy for addressing students' reading deficiencies.

For the past several years, states have required schools to extend time spent in reading courses in which little or no time is spent filling in the skill gaps and assessing students in the actual act of reading. Older students are languishing in intensive reading courses year after year...after year...after year.

Middle and high school students do not have time to waste. Do the math:

If a 9th grader is reading on 5th grade level,
how many levels is he/she behind? (*Answer: 4*)

If he/she raises his/her reading level by only one grade
this year, how many levels will he/she
be behind next year in 10th grade? (*Answer: 4*).

Implemented with integrity, RST does not require technology, software, textbooks, or extraneous literacy activities. Trainers use materials that are readily available in most schools.

It's not complicated.

Cure the kids.

Today.

G. Kay Kincl
Reading Intervention Specialist

Science News

First Evidence of Brain Rewiring in Children: Reading Remediation Positively Alters Brain Tissue

ScienceDaily (Dec. 10, 2009) — Carnegie Mellon University scientists Timothy Keller and Marcel Just have uncovered the first evidence that intensive instruction to improve reading skills in young children causes the brain to physically rewire itself, creating new white matter that improves communication within the brain.

As the researchers report today in the journal *Neuron*, brain imaging of children between the ages of 8 and 10 showed that the quality of white matter -- the brain tissue that carries signals between areas of grey matter, where information is processed -- improved substantially after the children received 100 hours of remedial training. After the training, imaging indicated that the capability of the white matter to transmit signals efficiently had increased, and testing showed the children could read better.

"Showing that it's possible to rewire a brain's white matter has important implications for treating reading disabilities and other developmental disorders, including autism," said Just, the D.O. Hebb Professor of Psychology and director of Carnegie Mellon's Center for Cognitive Brain Imaging (CCBI).

Dr. Thomas R. Insel, director of the National Institute of Mental Health, agreed. "We have known that behavioral training can enhance brain function. The exciting breakthrough here is detecting changes in brain connectivity with behavioral treatment. This finding with reading deficits suggests an exciting new approach to be tested in the treatment of mental disorders, which increasingly appear to be due to problems in specific brain circuits," Insel said.

Keller and Just's study was designed to discover what physically changes in the brains of poor readers who make the transition to good reading. They scanned the brains of 72 children before and after they went through a six-month remedial instruction program. Using diffusion tensor imaging (DTI), a new brain imaging technique that tracks water movement in order to reveal the microscopic structure of white matter, Keller and Just found a brain change involving the white matter cabling that wires different parts of the brain together.

"Water molecules that are inside nerve fibers tend to move or diffuse parallel to the nerve fibers," explained Keller, a CCBI research scientist and author of the first developmental study of compromised white matter in autism. "To track the nerve fibers, the scanner senses areas in which many water molecules are moving along in the same direction and produces a road-map of the brain's wiring."

Previous DTI studies had shown that both children and adults with reading difficulty displayed areas of compromised white matter. This new study shows that 100 hours of intensive reading instruction improved children's reading skills and also increased the quality of the compromised white matter to normal levels. More precisely, the DTI imaging illustrated that the consistency of water diffusion had increased in this region, indicating an improvement in the integrity of the white matter tracts.

"The improved integrity essentially increases communication bandwidth between the two brain areas that the white matter connects, by a factor of 10," Just said. "This opens a new era of being able to see the brain wiring change when an effective instructional treatment is applied. It lets us see educational interventions from a new perspective."

Out of the 72 children, 47 were poor readers and 25 were reading at a normal level. The good readers and a group of 12 poor readers did not receive the remedial instruction, and their brain scans did not show any changes. "The lack of change in the control groups demonstrates that the change in the treated group cannot be attributed to naturally occurring maturation during the study," Kellersaid.

Keller and Just also found that the amount of change in diffusion among the treated group was directly related to the amount of increase in phonological decoding ability. The children who showed the most white matter change also showed the most improvement in reading ability, confirming the link between the brain tissue alteration and reading progress.

Additional analyses indicated that the change resulted from a decrease in the movement of water perpendicular to the main axes of the underlying white matter fibers, a finding consistent with increased myelin content in the region. Although the authors caution that further research will be necessary to uncover the precise mechanism for the change in white matter, some previous findings indicate a role for electrical activity along axons in promoting the formation of myelin around them, providing a plausible physiological basis for intensive practice and instruction increasing the efficiency of communication among brain areas.

"We're excited about these results," Just said. "The indication that behavioral intervention can improve both cognitive performance and the microstructure of white matter tracts is a breakthrough for treating and understanding development problems."

The research was funded by grants from the Richard King Mellon Foundation and the National Institute of Mental Health. For more information on Just, a pioneer in brain science discoveries, Keller and Carnegie Mellon's Center for Cognitive Brain Imaging, visit www.ccbi.cmu.edu.

Timothy A. Keller, Marcel Adam Just. **Altering Cortical Connectivity: Remediation-Induced Changes in the White Matter of Poor Readers.** *Neuron*, 2009; 64 (5): 624-631 DOI: 10.1016/j.neuron.2009.10.018

References

- Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: Massachusetts Institute of Technology.
- Bruck, M. (1990). Word Recognition skills of adults with childhood diagnoses of dyslexia. *Developmental Psychology*, 26.
- Catts, H. W. (1999). Phonological awareness: putting research into practice. *Language Learning and Education*, 1.
- Chall, J. S. (1996). *Stages of reading development*. New York: McGraw-Hill.
- Collins, N. D. (1996). Motivating low-performing adolescent readers. *ERIC Digest*. (ERIC Document Reproduction Service No. ED 396 265).
- Cope, J. (1993). Exploring the reading development of 12th grade Georgia high school students through reader autobiographies. (ERIC Document Reproduction No. ED 354 506).
- Eckwall, Eldon E., & Shanker, James L. (1988). *Diagnosis and remediation of the disabled reader* (3rd ed.). Needham Heights, MA: Allyn and Bacon, Inc.
- Florida Center for Reading Research (2003). Available online at <http://www.fcrr.org/>
- Florida Department of Education (accessed 2006). Available online at <http://www.fl DOE.org>.
- Foley, R. M. (2001). Academic characteristics of incarcerated youth and correctional educational programs: a literature review. *Journal of Emotional and Behavioral Disorders*, 9.
- Griffith, P. L., & Olson, M. W. (1992). Phonemic awareness helps beginning readers break the code. *The Reading Teacher*, 45.
- Grossen, B. (1997). *Thirty years of research: What we now know about how children learn to read*. Santa Cruz, CA: Center for the Future of Learning.
- Hiskes, D. (2003). Reading comprehension: constructing v. extracting meaning. The Dorbooks Inc., Newsletter, November, 8.
- Juvenile Justice Educational Enhancement Program Annual Report (2003).
- Johnson, G. (2004). Constructivist remediation: correction in context. *International Journal of Special Education*, 19 (1).
- Kantrowitz, B., & Wingert, P. (1989). How kids learn. *Newsweek*, April 17.
- Leach, J., Scarborough, H., & Rescorta, L. (2003). Late-emerging reading disabilities. *Journal of Educational Psychology*, 95, 2.

Lyon, G. Reid (2000). Why reading is not a natural process. LDA Newsbriefs, Vol. 35, No. 1, February 2000.

Lyon, G. Reid and Chhabra, Vinita (accessed 2005). The current state of science and the future of specific reading disabilities. National Institute of Child Health and Human Development, www.coloradoreading.com/revise/pdf/NIHCH.pdf.

May, Frank B. (1994). Reading as communication (4th ed.). Englewood Cliffs, NJ: Macmillan Publishing Company.

McKeown, M. G., Beck, I. L., Sinatra, G. M., & Loxterman, J. A. (1992). The contribution of prior knowledge and coherent text to comprehension. *Reading Research Quarterly*, 27(1).

Moats, Louisa C. (2001). When older students can't read. Center for Development and Learning.

National Information Center for Children and Youth With Disabilities (2003). Available online at <http://www.nichcy.org>.

National Reading Panel (2000). Available online at <http://www.nationalreadingpanel.org>.

Orton Dyslexic Society (1997). Available online at <http://ldonline.org>.

Shankweiler, D., Lundquist, E., Katz, L., Stuebing, K. K., Fletcher, J. M., Brady, S., Fowler, A., Dreyer, L. G., Marchione, K. E., Shaywitz, S. E. & Shaywitz, B. A. (1999). Comprehension and decoding: patterns of association in children with reading disabilities. *Scientific Studies of Reading*, 31.

Smith, S., Simmons, D., & Kameenui, E., (1994). Synthesis of research on phonological awareness: principles and implications for reading acquisition. Available online at <http://idea.uoregon.edu/~ncite/documents/techrep/tech21.html>.

Snow, Catherine E. & Biancarosa, Gina (2003). Adolescent literacy and the achievement gap: What do we know and where do we go from here. Carnegie Corporation, New York.

Southwest Educational Developmental Laboratory (2004). Available online at <http://www.sedl.org/>.

Stanovich, K. E., West, R. F., & Freeman, D. J. (1981). A longitudinal study of sentence context effects on second-grade children: tests of an interactive-compensatory model. *Journal of Experimental Child Psychology*, 32.

Sweet, Robert (1997). Illiteracy: An incurable disease or educational malpractice? The National Right to Read Foundation. Available online at <http://www.nrrf.org>.

Torgesen, J. K. & Mathes, P. G. (1999). Assessment and instruction in phonological awareness. Florida Department of Education.

Torgesen, J. K., Alexander, A. W., Wagner, R. K., Rashotte, C. A., Voeller, K., & Conway, T. (in press).

Wisconsin Literacy Education and Reading Network Source. Available online at <http://wilearns.state.wi.us/apps/>

Wood, K. D., & Nichols, W. D. (2000). Helping struggling readers learn to read and write. In K.D. Wood & T. S. Dickinson (Eds.), *Promoting literacy in grades 4-9*. Boston: Allyn and Bacon, Inc.

Worthy, J. (1996). A matter of interest: Literature that hooks reluctant readers and keeps them reading. *The Reading Teacher*, 50(2).