

CogREAD: Preventing Reading Difficulties

Research Background and CogREAD Mission

An extensive body of independent, evidence-based research conducted in schools makes clear that most reading difficulties can be prevented (Torgesen, 1998; Torgesen, 2002; Torgesen et al., 2010).

Proficiency rates achieved in these studies ranged from 94 to 99+ percent, yet most Title 1 elementary schools continue to have much lower reading achievement (National Assessment of Educational Progress).

Torgesen and other researchers he cites found that students struggle primarily because they are behind in basic reading skills (the Skill Gap), particularly phonemic awareness, and that traditional grade-level reading instruction had failed to close the Skill Gap. The solution implemented in these studies was to provide intensive supplemental training to boost phonemic awareness skills in combination with adequate reading instruction. A high rate of success was not achievable in the typical one-on-many classroom environment. The training required a one-on-few or one-on-one training environment with significant additional personnel to provide individualized instruction.

Resource requirements and associated costs of the one-on-one approach are the primary reasons more schools have not successfully implemented programs of individualized instruction. Such programs are logistically difficult to initiate, implement, and sustain. Torgesen (2010) cites the challenges faced by a program of catch-up growth in Kennewick, Washington, school system, which included individualized instruction at a cost-per-student of \$5,000 (Fielding, Kerr, & Rosier, 2007), yet proved difficult to sustain over the long term (Kennewick, 2013). The average cost of such interventions was \$2400 per student per year (Scamacca et al., cited in Torgesen, 2010, p. 42).

CogREAD's mission is to provide supplemental training at a significantly reduced cost to schools for students who need extra help to learn. Affordable, computer-assisted training tools and a logistically efficient implementation and administration process support existing curriculum and instruction to enhance student achievement without disrupting schedules.

Clinical Background

The CogRead online skill assessment and training tools were developed through collaboration with a clinical reading remediation program that has over 120 franchised learning centers worldwide. The organization has successfully helped over 50,000 students strengthen processing skills and overcome learning struggles. The focus of the clinical program is remediation through intensive one-on-one training in cognitive processing skills such as attention, processing speed, memory, visual processing, auditory processing, and logic and reasoning, and comes at a cost of \$5,000 to \$12,000 per student.

CogRead developed a computerized version of the training to make it more affordable. The computerized version was validated in the learning centers and is now actively used to supplement their clinical program. CogRead spun off from this collaboration to focus on prevention rather than remediation and was given the exclusive license for schools and after-school programs to provide a normed, online processing skills assessment, the Gibson Test, as well as online training tools that support reading readiness. References concerning this collaboration are available upon request.

Early Validation in Schools

The Gibson Test

Over 30,000 students have been tested using the Gibson Test to date. This resource offers schools the ability to screen large numbers of students easily and affordably to identify if weak processing skills may be causing learning struggles. It provides critical information for the Tier 1 Response to Intervention (RTI) process (National Center on Response to Intervention).

The manual Gibson Test was developed in the clinical system over a ten-year period which served as the foundation for building the online version. The online Gibson Test was normed using a diverse sample of over 6,000 students by an independent researcher skilled in Item Response Theory. Reliability and validity studies were completed in addition to test/retest studies (Kiplinger, 2008)

Results from the Gibson Test have been compared to traditional cognitive skill assessments and found to have a highly predictive correlation (Anderson, 2009). Results from the Gibson Test in two schools were compared to standardized reading scores. There was a very high correlation between weak skill scores and weak reading scores (Slizewski & Carpenter, 2009).

Learning skills training

CogREAD's learning skills training was implemented in a failing Title 1 elementary school that was scheduled to be closed because of very low performance. Through one of our clinical partners, we implemented the training for 60 of the lowest performing students who had failed the state assessment. After training for less than one school year, 57 out of 60 of the students passed the state assessment, and the school was removed from the closure list (Mooringsport).

Phonemic awareness training

In an attempt to validate the Torgesen research more specifically regarding prevention, a portion of CogREAD's learning skills training that focuses on phonemic awareness was implemented for first-grade students at a low-performing private school in New Orleans. With only four months of training phonemic awareness skills 20 minutes per day, four days per week, 24 out of 28 students passed a nationally-normed, independently-administered, oral reading-fluency assessment. Sixteen of the 24 students scored above grade level. Pre-training scores are not available, but historically the school has been in the lowest quartile of schools in the city. Louisiana typically ranks at the bottom of NAEP rankings and New Orleans has been one of the lowest performing districts in Louisiana.

This school was in danger of losing voucher funding for over 90 students because of low state scores, so the full training was also provided to most of the student population in grades two through eight. Post training overall, the schools saw the highest gains academically ever recorded, and the voucher funding was saved. A testimonial is available from the educator who oversaw the program (Schroeder, 2012).

Understanding why students struggle with learning

The research cited by Torgesen (1998, 2002, 2010) provides a solid basis for the claim that most reading difficulties can be prevented. However, the specific causes of reading struggles may vary among students. It is helpful to classify the major categories of causes to help better define solutions:

1. Inadequate instruction
2. Physiological limitations

3. Family, situational, and personal issues
4. Learned-skill deficits, such as vocabulary
5. Processing-skill deficits, such as working memory or auditory processing
6. Mindset and performance-character challenges

The first three categories represent factors that CogREAD does not address directly, though we do work to close any skill gaps correlated with any of these factors. The last three categories define the Skill Gap. CogRead training works to strengthen these skills through a well-integrated process designed to support existing reading curriculum and instruction in harmony with a child's natural development process.

Developmentally appropriate implementation of skills training

As noted, a large body of research, as well as our own case studies, demonstrates that developing phonological/phonemic awareness predicts reading success. The development of individual phonological skills is, of course part of the larger learning process, a whole comprised of many parts (Bloom, 1956; Anderson et al., 2000). Phonological sensitivity skills develop along a continuum (Pufpaff, 2009), which suggests an optimal approach to training that blends whole language learning with phonological sensitivity training (Trachtenburg, 1990). While the general movement of phonological sensitivity development is from word groups (sentences), to words, then syllables (morphemes), then individual sounds (phonemes) (Pufpaff, 2009), in practice the movement is not strictly linear: the parts are understood in relation to the whole and vice versa (Swanson & Law, 1993).

Consistent with the CCSS development framework, in the CogREAD training children are introduced to print concepts and broader textual components first; they are next introduced to sight words in the context of wisdom stories; the words are then intensively drilled; sound analysis skills are concurrently developed; and the student can then return to the text, not only having learned the sight words, but also having gained an ability to sound out words in context.

The net effect is an improvement in reading fluency as well as comprehension. While the whole—the meaning—is greater than the sum of its parts, it cannot be fully comprehended unless decoding skills for individual sounds (the parts) have been mastered. Unless decoding skills become subconscious and automatic, both fluency and comprehension are compromised. At the same time, children are more likely to master the decoding skill if they understand its value within the larger context of learning to read and, in turn, the value of reading within the broader social context.

Because children enter school at different points on the developmental continuum (Hart & Risley, 1995; Ehri & Roberts, 2006), those who are already reading or are ready to learn will adapt easily to the existing curriculum. A second group will need additional help to learn. And a third group may not be reached at all using traditional reading curriculum and instructional methods, most commonly because of information-processing skill deficits. CogREAD provides extra help for the second group, and we are able to assess and in most cases strengthen the core processing skills of the third group.

While some commentators focus on the importance of third grade as the watershed year in a student's developmental continuum (Paul, 2013), work done throughout the early grades is vitally important to build a strong learning scaffold. We work to strengthen the structural components through a consistent process of implementation that supports teachers' efforts to reach every student.

CogREAD's administration system facilitates monitoring of students who need extra help, digitally tracks student progress, and streamlines documentation and reporting in fulfillment of RTI and CCSS requirements. The administration system has a built-in assessment function, relieving the instructor of a grading and administrative burden and enabling remote access to results, which are cross-checked with academic testing, such as DIBELS, to validate student progress.

Attitude, motivation, and performance-character trait development

In the New Orleans first-grade study cited above, most of the students lacked confidence in their ability to learn. They had difficulty grasping basic concepts required to do the training and were inclined to give up easily. We developed protocols to supervise, coach, mentor, and motivate the students to complete the training successfully.

To expand on our own insights on mentoring needs, we also rely on and recommend Carol Dweck's work on mindset (2007), research on intrinsic motivation summarized by Daniel Pink (2009), research on the factors that help children succeed reported by Paul Tough (2011), and insights on mastery and mindfulness from George Leonard (1991). We incorporate the essence of this research in our program going forward.

In our work to support children who need extra help, we particularly value insights gained on the role played by shame when a child struggles to read, as presented in the public television series "Children of the Code" (2013). First grade and increasingly Kindergarten are a rite of passage for all children, but especially children who struggle to learn, many of whom come to school with shaky hopes. Early success predicts future success (Hernandez, 2012) and is essential to build confidence and prevent the labeling and shame that inevitably ensues when children perform poorly on assessments, are assigned to the low reading group, and feel the sting of perceived failure.

We also directly teach performance-character traits through the wisdom stories we use to introduce the Fry Sight Words: values of planning, persistence, focus, and skill development. Performance-character traits are further developed through our service learning model and system of peer mentoring. We find that children who have struggled to learn are often the best coaches, and that children who learn easily can benefit through the mentoring process from learning empathy for those who struggle.



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