Reading Corps Research Base – K-3 Model

This document provides the evidence-base for the Reading Corps K-3 model. Specifically, research supporting the assessment tools and strategies, reading interventions, and the importance of coaching, are presented within a Response to Intervention (RtI) framework.

Response to Intervention:
Response to Intervention (RtI) is an instructional framework that systematically utilizes assessment data to make instructional decisions, as well as decisions regarding resource allocation (Burns & Gibbons, 2008; Fuchs & Fuchs, 2006; Fuchs, Fuchs, & Compton, 2012). As such, RtI is placed within the general education context because it requires quality core instruction for all students (Tier 1), and calls for universal screening for all students. The assessment data collected in Tier 1 allows educators to determine whether students require additional support to reach proficiency in a particular academic skill area (i.e., reading and math). The Reading Corps model aligns well with the RtI framework because students who are served by Reading Corps members are essentially receiving Tier 2 support; students are eligible for the program based on screening data. Research has demonstrated the effectiveness of this approach at reducing special education referral rates (Marston, et al., 2003; Bollman, Silberglitt, & Gibbons, 2007; Burns & Gibbons, 2008; VanDerHeyden, Witt, & Gilbertson, 2007), and improving reading outcomes (Callender, 2007; Gettinger & Stoiber, 2007; O’Connor, Harty, & Fulmer, 2005; Vellutino, et al., 2008).

Assessment:
Curriculum-based Measurement (CBM) is a general outcome measure that is accurate, efficient, and sensitive to growth (Deno, 1986; Deno, 2005; Deno, Mirkin, & Chiang, 1982). Over twenty years of research has found evidence for the validity and reliability of CBM tools (Baker, Smolkowski, Katz, Fien, Seeley, Kame’enui, et al., 2008; Burke & Hagan-Burke, 2007; Deno, 1986; Fuchs et al., 2004; Good, Simmons, & Kame’enui 2001; Hintz, Callahan, Matthews, & Williams, 2002; Howe, Scierka, Gibbons, & Silberglitt, 2003; Marston & Magnusson, 1988; Shinn, Good, Knutson, Tilly, & Collins, 1992; Wayman, Wallace, Wiley, Tica, & Espin, 2007). The Reading Corps model uses this assessment tool for benchmarking, three times per academic year. These instruments are also used for weekly progress monitoring of students receiving tutoring support, allowing for timely data-based instructional decision-making to accelerate student progress.

Reading Acquisition:
The National Reading Panel (2000) identified the “Big Five” areas of reading instruction: phonological awareness, phonics, fluency, vocabulary, and comprehension. Each reading domain has a direct relationship with overall reading achievement. Reading acquisition is an iterative process by which development of lower level skills (e.g., phonological awareness, phonics, and fluency) and higher level skills (e.g., vocabulary and comprehension) interact to strengthen one another, and in turn, overall reading achievement improves (Hoover & Gough, 1990; Tilstra, McMaster, van den Broek, Kendeou, & Rapp, 2009). The Reading Corps interventions address three of the five areas directly, while addressing vocabulary and comprehension implicitly. The development of, and proficiency in, these lower level skills are the best indicators of overall reading achievement, before a student ‘reads to learn’ (see
Theory of Automaticity, LaBerge & Samuels, 1974; Chall, 1983; NRP, 2000; Snow, Burns & Griffin, 1998). Literacy experts on staff at Reading Corps thus identified these skills as the target of the program’s interventions.

Interventions:
These interventions were derived from published experimental research in which effective instructional practices in reading were presented. The Reading Corps’ intervention protocols were developed and field-tested by the St. Croix River Education District in Rush City, Minnesota. Reading Corps members implement these interventions with students daily, in a one-on-one setting.

Phonological Awareness (PA) is defined as the knowledge that individual sounds and parts of words (i.e., morphemes and syllables) make up oral language; it is predictive of, and has a strong correlational relationship with, early reading skills and overall reading achievement (Ball & Blachman, 1991; Brady, Fowler, Stone, & Winbury, 1994; Cunningham, 1990; Ehri, Nunes, Willows, Schuster, Yaghoub-Zadey, & Shanahan, 2001; Goswami, 2000; NRP, 2000; Snider, 1995; Stahl & Murray, 1994).

1. **Phoneme Blending:**
   **Objective:** Students increase skill in phoneme blending (Snider, 1995).
   - Explicit instruction in phoneme blending aids in decoding words when learning to read (Adams, 1990; Bos & Vaughn, 2002; Ehri et al., 2001; Snider, 1995).
   - Phoneme blending is one of two PA skills that are most useful for students learning to decode (mean $d = .67$; Ehri et al., 2001; NRP, 2000; Santi, Menchetti, & Edwards, 2004).

2. **Phoneme Segmenting:**
   **Objective:** Students increase skill in phoneme segmenting (Snider, 1995).
   - Phoneme segmenting is one of two PA skills that are most useful for students learning to decode (mean $d = .67$; Adams, 1990; Ball & Blachman, 1991; Bos & Vaughn, 2002; Ehri et al., 2001; NRP, 2000; Santi, Menchetti, & Edwards, 2004).
   - Students who receive instruction in phoneme segmenting learn to read and spell more easily (Castiglioni-Spalten & Ehri, 2003; NRP, 2000).
   - In an experimental study (Castiglioni-Spalten & Ehri, 2003), students who used blocks to engage in phoneme segmenting demonstrated a significant and large effect size ($d = 1.53$) for this skill. Students in the treatment group also demonstrated higher accuracy in word reading.
   - In an experimental study (Blachman, Tangel, Ball, Black, & McGraw, 1999), explicit phoneme awareness instruction resulted in statistically significant improvements in phoneme segmenting for the treatment group. These students also demonstrated greater improvement in overall reading in a delayed (1 and 2 year) follow-up.
**Phonics** is knowledge of letter-sound correspondence, and the ability to decode and recode individual sounds or onset-rime combinations (Armbruster, Lehr, & Osborn, 2001; Chard & Osborn, 1999; Ehri, 2005; Ehri & Wilce, 1987; Goswami, 1999; NRP, 2000).

3. **Letter Sound Correspondence:**
   **Objective:** Students increase fluent identification of letter sounds.
   - Most students benefit from explicit instruction in the relationship between letters and sounds (Adams, 1990; Adams, 2001; Chard & Osborn, 1999).
   - In an experimental study (Blachman et al., 1999), explicit instruction in the alphabetic code resulted in significant improvements in letter-sound correspondence for the treatment group. These students also demonstrated greater improvement in overall reading in a delayed (1 and 2 year) follow-up.

4. **Word Blending:**
   **Objective:** Students increase skill in blending letter sounds to make simple words.
   - Once students have learned letter-sound correspondence, they are able to engage in word blending with explicit instruction (Adams, 2001; Anthony, Lonigan, Driscoll, Phillips, & Burgess, 2003; Chard & Osborn, 1999; Goswami, 2000; Greaney, Tunmer, & Chapman, 1997).
   - In an experimental study that included explicit instruction in word blending (McCandliss, Beck, Sandak & Perfetti, 2003), there was a significant difference in decoding abilities (as measured by the WRMT-R Word Attack and Word Identification subtests; CTOPP Blending Nonwords subtest) for students in the treatment group (greater improvement), as compared to students in the control group.

**Fluency** is the quick and accurate reading of text, accompanied by reading with expression (Armbruster et al., 2001; Dowhower, 1991; Chard, 2002; Chard, Vaughn, & Tyler, 2002; NRP, 2000; Sindelar, Monda, & O'Shea, 1990). Direct instruction in fluency may impact overall reading proficiency (Rasinski & Hoffman, 2003).

5. **Duet Reading:**
   **Objective:** Students increase reading fluency and expression via delayed modeling for word reading (Blevins, 2001; Dowhower, 1991; Mathes, Simmons, & Davis, 1992; Weinstein & Cooke, 1992).
   - Duet Reading may be used for students who have a low reading rate; the delayed modeling by the teacher can encourage a faster reading rate, which increases fluency and the student’s ability to comprehend the text (LaBerge & Samuels, 1974; Rasinski, 2002).
   - In a modified duet reading procedure (Fiala & Sheridan, 2003), two of three students (in a single-subject design) significantly improved WCM, as measured by CBM-R. Students met or exceeded the expected gains for word growth per week.
6. **Repeated Reading with Comprehension Questions:**

*Objective:* Students increase fluent passage reading via multiple text readings, while guided by comprehension questions.

- Repeated Reading is the most documented oral reading fluency intervention (Chard, 2002; Samuels, 1997).
- Students demonstrated a significant increase in words read correct per minute (WCM) with additional repeated readings (from one to three; Chard et al., 2002; Sindelar et al., 1990).
- The Theory of Automaticity (LaBerge and Samuels, 1974) states that if students are able to automatically and accurately decode at the word level, more cognitive resources will be available for text comprehension.
- Students gain further comprehension of the text (recall) with each reading (Chard et al., 2002; Samuels, 1997; Sindelar et al., 1990).
- When guided to answer comprehension questions after each reading, students in a treatment group increased by 13 WCM, as compared to students in the control group who only increased by 2.28 WCM, which demonstrated a significant difference between groups (Therrien, 2006). The mean effect size for comprehension was significant and moderate ($d = .48$; Therrien, 2004).

7. **Stop Go:**

*Objective:* Students increase reading fluency by paying particular attention to punctuation and phrasing.

- Developing prosody, or expression, can help increase oral reading fluency (Blevins, 2001; Rasinski & Hoffman, 2003; Rasinski, Padak, Linek, & Sturtevant, 1994).
- Once students have acquired proficient decoding skills, they are able to engage in prosodic reading (Schwanenflugel, Hamilton, Wisenbaker, Kuhn, & Stahl, 2004).

8. **Newscaster:**

*Objective:* Students increase fluency and prosody via adult modeling (Armbruster et al., 2001; Stahl, 2004).

- Providing students with the opportunity to preview the text, via adult modeling, leads to higher oral reading fluency (Mastropieri, Leinart, & Scruggs, 1999).
- A combination of repeated reading and previewing, or modeling, results in increased fluency and overall reading proficiency (Rasinski & Hoffman, 2003).

9. **Pencil Tap:**

*Objective:* Students increase reading fluency through corrective feedback.

- Corrective feedback (via modeling) explicitly indicates to students what the error is and allows student to make error corrections (Chard, 2002; Hattie & Temperley, 2007; Howell & Nolet, 2000; Lysakowski & Walberg, 1982; Pany & McCoy, 1988; Tennenbaum & Goldring, 1989; Wanzek, Vaughn, Wexler, Swanson, Edmonds, & Kim, 2006).
An explicit, **multi-component** approach to intervention development is supported in the literature (Edmonds et al., 2009; Chard et al., 2002; Lyon, Alexander, & Yaffe, 1997; Mercer, Campbell, Miller, Mercer, & Lane, 2000).

10. **Great Leaps:**
   **Objective:** Students increase fluency in phonemic awareness, letter names and sounds, decoding, site word and phrase recognition, and connected text reading.
   - In an experimental study (Mercer, Campbell, Miller, Mercer, & Lane, 2000), which included students previously classified with a Specific Learning Disability, all students made significant gains in reading level assessments (as measured by Great Leaps grade level assessments) as well as in WCM on CBM-R probes. The effect size for the treatment group was significant and large ($d = 2.01$ to $13.43$ for grade level assessment; $d = 1.52$ to $2.55$ for WCM; Tennenbaum & Goldring, 1989).

**Coaching and Fidelity:**
Reading Corps members receive multiple layers of support (e.g., coaching) to ensure model fidelity, including fidelity to assessment administration and intervention implementation (Bradley, Danielson, & Doolittle, 2007; Burns & Gibbons, 2008; Kame’enui, 2007; Vaughn, Cirino, Wanzek, Wexler, Fletcher, Denton, et al., 2010). Including a coaching component increases the likelihood of implementing a given skill correctly to 95%, as compared to just 5% when a skill is simply demonstrated (Fixsen & Blase, 2006; Fixsen, Blase, Naoom, Van Dyke, & Wallace, 2009). In the Reading Corps, members are directly observed by both the Internal Coach and the Master Coach, using a standardized, objective observation tool to provide corrective feedback (see AIRS; Burns & Gibbons, 2008). Implementation integrity must be observed in order to attribute the student’s response to the intervention. Without implementation integrity, it is not clear whether progress is a response to the intervention (Burns & Gibbons, 2008; Fuchs, Fuchs, Compton, Bouton, Caffrey, & Hill, 2007), or whether other factors are contributing to the outcomes (whether positive or negative). Fidelity checks within the Reading Corps model are conducted at least bi-weekly by the Internal Coach, and monthly by the Master Coach for new sites.

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References


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