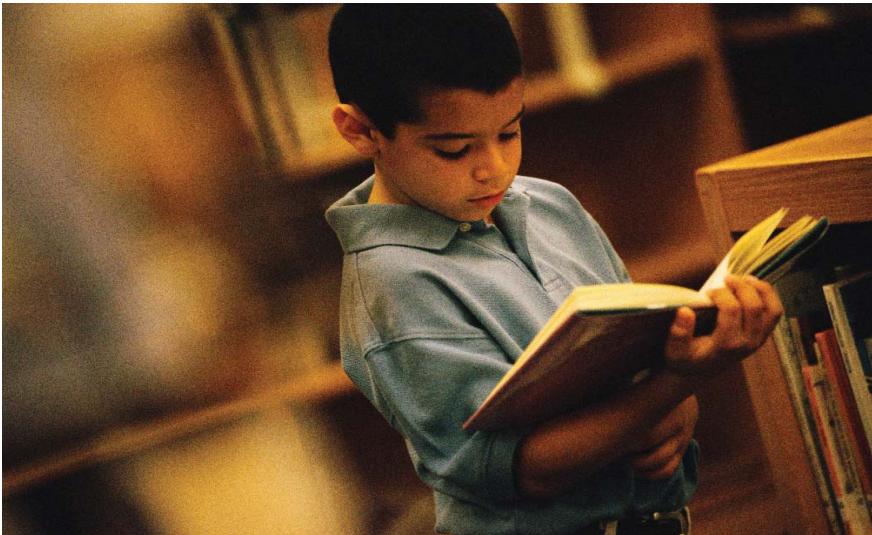# Boosting Fluency and Comprehension to Improve Reading Achievement

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From a concerned special education teacher:

Do you know a student in your class who reads one . . . word . . . at . . . a . . . time . . . in . . . a . . . very . . . slow . . . and . . . halting . . . manner? Do you enjoy listening to him or her read aloud? Does it only get worse when the student is presented with grade-level reading material? Being a special education teacher for fourth and fifth grade students, I am happy that my student, James, is reading anything at all. However, like most students with learning disabilities, James really struggles with reading. Listening to James read grade-level material aloud is almost painful. I watch James concentrate so hard on each and every sound, syllable, and word, that by the end of the sentence, he has no mental energy left to even understand what the passage is about! I can understand why James avoids reading at all cost. Even when I encourage him to read, it seems that he is unaware that the words in front of him come together to form a coherent story. He is not even able to answer simple factual comprehension questions. The reading material is only getting harder and as a fourth grader, James needs to be able to read to learn.

Does James sound like a student in your class? Chances are good that if you teach struggling readers, you have encountered numerous students with similar concerns. In fact, many students with reading disabilities have difficulties with reading fluency or active text comprehension, or both (Billingsley & Wildman, 1988; National Institute of Child Health and Human Development, 2000; Therrien, 2004). Unfortunately, problems in either or both of these areas virtually ensure that students will fail to comprehend.

Fortunately, instructional strategies designed to help students with reading fluency and active text comprehension have been developed and empirically validated. Researchers have found two interventions, repeated reading and question generation, to be effective (National Institute, 2000). Teachers have found it easy to use these interventions to improve their students' ability to read fluently and increase comprehension. This article provides a brief overview of the interventions and details how teachers can combine them into a supplemental reading strategy.

The Reread-Adapt and Answer-Comprehend (RAAC) Intervention

For students who have difficulty with both fluency and active text comprehension, repeated reading and question generation (see boxes, "All About Fluency" and "What Does the Literature Say") can easily be combined into one supplemental intervention entitled Reread-Adapt and Answer-Comprehend (RAAC). We recommend that teachers use this program with students with instructional reading levels between first and third grade. Figure 1 lists who can benefit from the intervention and includes any learners who have difficulties comprehending what they read.

Getting Started: Seven Steps to Better Readers

Figure 2 describes the seven instructional steps in the RAAC intervention. The program integrates the essential

All About Fluency

Reading fluency, the ability to read with speed, accuracy, and proper expression (Kuhn & Stahl, 2003), is a critical skill for comprehension. Dysfluent reading is slow, halting, and laborious. The reader must intently concentrate on each and every word using all their cognitive resources to decode the text. This in turn leaves virtually no cognitive resources for comprehension (Adams, 2000; LaBerge & Samuels, 1974).The reader's ability to decode sight words may be occurring at a phase where he or she would benefit from fluency.

Phases of Fluency. Ehri (2005) has proposed four phases students go through when developing into mature sight word readers:
- Pre-alphabetic.
- Partial alphabetic.
- Full alphabetic.
- Consolidated alphabetic.

A student at the "consolidated alphabetic" phase will have retained many sight words in memory and benefit from the ability to read new words through the use of more sophisticated decoding skills (Ehri, 2005). Therefore, fluency aids sight word reading, which promotes better passage reading. But listening to a student read individual words or passages in a dysfluent manner is frustrating for both the student and the educator.

Reading Fluency and Students With Disabilities. Kuhn and Stahl (2003) conducted a review of both developmental and remedial reading practices. They found that fluency interventions produced constructive outcomes. Unfortunately, fluency instruction still remains significantly unexploited. If both developmental and remedial reading practices occur sparingly in school, a question arises as to how pervasive reading problems are for students with reading disabilities.

Although demographic statistics that specifically examine reading fluency and students with reading disabilities are not available, evidence would suggest that the problem is extensive.

For instance, beyond Kuhn and Stahl's review, Chard, Vaughn, and Tyler (2002) found 24 published and unpublished studies that report positive effects of building reading fluency for elementary students with reading disabilities. Further, a study by Pinnell and colleagues (1995) found that almost half of a representative sample of fourth graders was unable to read grade-level material fluently. A representative sample would include students with disabilities.

Considering that students with disabilities are often in general education settings for core classes such as social studies and science, many students are most likely provided with reading material above their instructional level. If students encounter text at frustration level, comprehension difficulties may occur, mostly because of students' inability to read fluently.

elements of repeated reading and question generation (Rosenshine et al., 1996; Therrien, 2004). To improve reading fluency, students reread until a performance criterion is reached and receive feedback on word errors. To improve their comprehension-monitoring ability, students read each passage purposely, in an attempt to adapt and answer question-generation prompts, such as "Who is the main character?" and "Where is the story located?"

Intervention Requirements

Before implementation, the teacher must tailor the intervention for individual students' needs by making three decisions: performance criterion, type of prompts to use, and selection of reading material.

Performance Criteria. Select an appropriate performance criterion/goal for each student. The intervention requires passages to be reread until students reach a satisfactory level of fluency. Typically, this is accomplished by

requiring students to reread passages until they reach a certain number of correct words per minute (cwpm). The appropriate number of words per minute will vary based on students' instructional reading level. The following are suggested performance goals of number of correct words per minute for students at first- through fourth-grade reading levels based on norms reported by Hasbrouck and Tindal (2005):

- First grade, 53 cwpm
- Second grade, 89 cwpm
- Third grade, 107 cwpm
- Fourth grade, 123 cpm

We recommend that teachers use this program with students with instructional reading levels between first and third grade.

Question Prompts. Write appropriate prompts to guide question generation. The more naive the learner, the higher level of prompts required. Considering that RAAC targets students reading at a first- though third-grade level, we suggest using story-structure prompts (extremely high level of prompting) with learners reading at a first- and second-grade level or single-word prompts (high level of prompting) with learners reading between a second- and third-grade level.

When deciding which prompts to use, consider that the ultimate goal for

What Does the Literature Say About Fluency and Comprehension?

Comprehension difficulties are often not resolved solely by improving students' reading fluency. Although reading fluency is a necessary prerequisite, more is needed for comprehension. Good readers monitor their comprehension as they read, ensuring they glean important information from the text. Similar to James, many poor readers on the other hand, do not monitor their understanding as they read. These students "word call," and are not aware of the mistakes they make. Word call occurs when a student is not reading for comprehension. The words are read as though they were presented in isolation. Such students do not integrate the information in the passage in order to obtain a basic understanding of the topic at hand. These students lack metacognitive skills; awareness of and regulation of their own cognitive processes (Billingsley & Wildman, 1990).

Research has indicated that unlike good readers, poor readers do not automatically monitor their comprehension while reading (Wong and Jones, 1982). Students with learning disabilities, in particular, are often characterized as passive learners who do not engage in active processing of information (Griffey, Zigmond & Leinhardt, 1988). A lack of comprehension monitoring often results in a failure to fully comprehend the reading, regardless of the student's ability to read the material fluently.

Reading Fluency/Repeated Reading. Repeated reading is "a reading program that consists of rereading a short and meaningful passage until a satisfactory level of fluency is reached" (LaBerge & Samuels, 1974, p. 404). Recent literature reviews indicate that repeated reading is an effective intervention for improving reading fluency for students with and without disabilities. (Meyer & Felton, 1999; Therrien, 2004). Students with

instructional reading levels between first and third grade are most likely to benefit from fluency instruction (Kuhn & Stahl, 2003).

We have found three essential instructional components that can maximize the effectiveness of repeated reading (Therrien, 2004):

- Students should read passages aloud to an adult who is able to give effective feedback.
- An adult should give corrective feedback on word errors.
- Students should reread passages until students achieve fluency at a reading level commensurate with that of their peers (i.e., reading with satisfactory speed, accuracy, and expression).

Vital to repeated reading success is the use of passages at a difficulty level that requires students to reread the selection a sufficient number of times to achieve satisfactory fluency (typically, 3–4 times). If students read passages satisfactorily in one or two readings, teachers should select more difficult material. If students consistently need more than four readings to achieve fluent performance, teachers need to select easier passages. To better ensure student confidence, when initiating a repeated reading program, start with passages at an independent level (i.e., word accuracy of 90% or greater).

Text Comprehension Monitoring/ Question Generation. Question generation is a text comprehension strategy defined broadly as having readers generate and answer questions during reading (National Institute, 2000). It consists of a range of interventions geared to the sophistication of the learner. The ultimate goal of question generation instruction is for students to acquire the ability to strategically monitor their understanding while reading. Readers

must, therefore, create, modify, and answer questions before, during, and after reading—questions that enable them to acquire a satisfactory depth of knowledge.

Many learners acquire this strategic knowledge passively through indirect instruction, such as teacher modeling and their own interactions with print. Some students, however, especially students with disabilities, fail to acquire strategic knowledge unless explicitly taught.

Overall, question-generation research has indicated that interventions that provided students with procedural prompts to cue question generation were more successful than interventions that provided no prompts (Rosenshine, Meister, & Chapman, 1996). Further, research indicated that the level or concreteness of the prompts (i.e., easy to teach and apply) should vary, depending on the skill of the learner and the type of material being read, with a high prompt level for naive learners and a lower prompt level for more skilled learners.

The use of story-structure questions (e.g., "Who is the main character?" or "How did the main character feel?") to guide question generation is appropriate for the most naive learners, while more sophisticated learners should instead use single-word prompts (e.g., "who, what, where, when?"). A trade-off ensues with higher prompt levels being easier to teach and apply but less generalizable (e.g., story structure prompts are only useful with narrative passages) and lower level prompts being harder to teach and apply but more generalizable (e.g., "who, what, where, why?" can be used to answer expository and narrative passages but provide less direction than story structure prompts).

students is to acquire a strategy to guide their active text comprehension outside of the intervention. Therefore, it may be prudent to transition students using the story-structure prompts into

using single-word prompts after they have been involved in the intervention for an extended period of time. It is also important to encourage use of the prompts outside of the intervention.

Reading Material. Select appropriate reading material for the program. Use of appropriate reading material is key to successful implementation. Reading material must be suitable for both

repeated reading and question generation interventions. Consequently, passages should be relatively short and each passage must contain a complete idea or narrative. The following are recommended passage lengths based on instructional reading level:

- First grade, 53–66 words.
- Second grade, 89–111 words.
- Third grade, 107–133 words.
- Fourth grade, 123–153 words.

(Note: Ranges indicated would enable a student reading at the 50th percentile, as reported by Hasbrouck & Tindal, 2005, to read the passage in 1 to 1.25 minutes.)

Unlike repeated reading interventions alone, students cannot simply reread a section of a larger passage because this would compromise the question-generation strategy. A passage used with James, the student mentioned previously, was 111 words; therefore, it was an appropriate length for use in the RAAC intervention.

Student Results: Back to James

James has been involved in the intervention for 4 months. When he reread a comprehension-fluency test passage, he performed much better than before, both in fluency and comprehension.

During the intervention, James answered the "who, what, where, when, how, and why" questions the teacher gave him; and the teacher actively mentored James on how to adapt and answer the questions to get a complete understanding of the passage. This often required James to make infer-

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Figure 2. Reread-Adapt and Answer-Comprehend (RAAC) Intervention Sequence

Step 1: Prompt Student. "Read this story the best you can and as quickly as you can. Pay attention to what you are reading, as you will need to answer a few questions."

Step 2: Read Prompts. Ask student to read question-generation prompts ("who, what, where, when, how" questions, such as "Who is the main character?" "Where does the story take place?").

Step 3: Reread. Ask student to reread passage aloud until reaching goal—
- No less than 2 times.
- No more than 4 times.

Step 4: Correct Errors.
- If student pauses during reading, correct word and have student repeat.
- Correct all other errors after passage read and ask student to repeat them.

Step 5: Praise. Provide feedback to student on improvements in speed and accuracy.

Step 6: Adapt and Answer. Ask student to adapt and answer questions you have placed on cue cards.

Error correction process:
a. If no answer or incorrect answer first time, prompt student to look for information in the passage: "See if you can find the answer in the passage."
b. If no or incorrect answer second time, point to sentence(s) where answer can be found and prompt: "See if you can find the answer in this sentence."
c. If no or incorrect answer third time, provide answer and point to where you found the answer.

Step 7: End and Adjust. When session ends, adjust the reading material for next time:

Adjust the difficulty of the reading material for use in the subsequent session using the following guidelines.
- If, for three sessions in a row, the student was unable to reach the fluency goal in four readings, lower the reading material to be used in the subsequent session by one grade level.
- If, for three sessions in a row, the student reached the fluency goal in two readings or less, raise the reading material to be used in the next session by one grade level.

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ences integrating information provided in the passage with his prior knowledge of the topic at hand.

James has made improvements in both his reading fluency and ability to adapt and answer the question-generation prompts.

He began reading passages at a first-grade level and now is working on third-grade passages. He is also proficient at adapting and answering the story-structure prompt questions. James's teacher will soon begin using the single-word prompts with him.

James's improvement has even resulted in increased reading achieve-

ment outside of the RAAC intervention. A curriculum-based fluency measure (DIBELS) indicated that James is now reading grade-level material at 12 correct words per minute faster. As James successfully increases the connections he makes between the printed text and the meaning it conveys, his reliance on

external prompts will transform to an internalized version of the strategy. We believe that his fluency will continue to improve, his understanding will improve, and he will blossom as a reader.

Final Thoughts

Combining repeated reading and question generation into a single intervention (RAAC) allows students to work on two skills essential for comprehension—fluency and active text comprehension. The intervention is easy to implement and requires a minimal amount of instructional time per session (about 10 minutes per passage reading).

Encouraging increasingly complex inference generation is a powerful aspect of the question generation portion of the intervention. Many students, both with and without disabilities, can benefit from direct instruction in such cognitive strategies.

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