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Small-Group and One-to-One Interventions for Children Who "Read" but Don't Comprehend

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For my daughter, Jessie, who was my first and best teacher of how children think, learn, and learn to read.

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PREFACE

All struggling readers are not the same. In this book I share current research and instructional practices for those children we ve come to call *word callers*. These are the children who can read like a dream, with impressive uency, but would be hard pressed to tell you what the text was about. Their high decoding skills and comparatively low comprehension have puzzled researchers and educators for decades. These bright, capable struggling learners crop up in just about every classroom and have been noticed around the globe and across grade levels. Some studies have estimated that word callers make up as much as one third of all struggling readers. Yet discovering just what is awry in their cognitive processes and what teachers can do to set these children on the right path is far from common knowledge. That is, until now!

In this book I share recent research and interventions that have helped these children to make the shift from decoding alone to reading with understanding. My own research and interventions are relatively new, as are some of the other interventions I share in this book; others you will nd in these pages have been around a while longer, but they aren t yet part of many teachers and reading specialists repertoires. My hope in writing this text is to share insights into what makes word callers tick, as well as interventions that are effective in improving these children's comprehension, so that we can help them learn to enjoy the rich meaningful world of reading that they are missing.

It s not often in education that we have such a storybook scenario to helping our at-risk learners, but as you read this book, you too will be excited by the evidence; and when you try the classroom strategies and interventions with children, the outcome will be decidedly positive. Once these children go from just reading words to being able to crack open the meaning of a text, the world is their oyster. Reading becomes a pleasurable experience they seek out, and with a teacher guiding them to books at their appropriate levels, they turn around and begin to rack up the bene ts of reading, from building vocabulary and conceptual knowledge to engagement with the memorable characters of children's literature.

The Time Is Now

When I set out to write this book, RTI (Response to Intervention) was a mere seedling. Now it s in full ower and schools are trying to nd the most thoughtful, well-researched interventions available, so that students who struggle can get the early, intensive boost they need to get on grade level and ourish. The timing of this book couldn t be better, for the interventions in this book are research-tested and developed by educators who were studying struggling readers long before the RTI mandate. Similarly, with its tiered approach to instruction, RTI has raised our awareness of differentiated instruction, and along with that, the instructional potency of small-group instruction. The interventions and lessons in this book

were indeed designed for needs-based, small-group teaching and learning as well as one-to-one settings.

A Variety of Interventions to Try

Just as not all struggling readers are the same, the practices or interventions we use to help them are not the same. Word callers are a particular type of struggling reader, and even within this group, each child is unique, and what helps each child make the shift to meaning is unique. However, as I describe in Chapter 1, what many word callers have in common is an in exible approach to print. They re so focused on the letters and decoding, their minds don t bend and stretch enough to knit together the meaning of the words they are reading. The diverse interventions in this book all address this in exibility, helping these children become more cognitively exible and better able to process meaning alongside letter-sound information. You Il gain a variety pack of classroom practices, from ones as simple as using riddles and other ambiguous language to those as complex as Transactional Strategies Instruction (TSI), wherein you integrate metacognitive strategies during your lessons, something that may take you a little more time to get down pat.

My Assessment and Intervention: The Power of Word and Picture Cards

A centerpiece of this book is the Sound-Meaning Flexible Thinking Assessment and Intervention, a method that involves the accompanying word and picture cards, and one you can use to remarkable effect with your word callers. You can use these cards individually with children (especially useful for reading specialists), or if you re a classroom teacher you can use them with small groups. My research has shown that in as few as ve lessons, word callers begin to unglue from print and become much more able to attend to meaning.



It's fortuitous timing to bring this assessment and intervention to classroom teachers and reading specialists when RTI is on everyone's mind. It can be tough to know which resources are really effective—and for which children they are best suited. With the sound-meaning assessment and lessons, you can be assured of a rm research base to help your word caller children.

Preface IX

A Simple Assessment

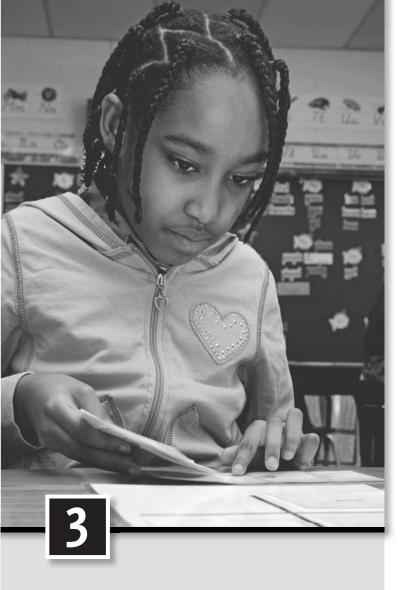
The assessment tells you which children have dif culty focusing on words sounds and meanings at once, which impairs children s ability to get meaning from text. And, your classroom assessments may also indicate the children who are high on decoding unency but relatively low on comprehension.

The Lessons

The sound-meaning sorting lessons help change the way these children think about print by *requiring* that they coordinate words meanings and sounds. That is, the lessons help word callers wrap their minds around both decoding and meaning, enabling them to make the critical shift to meaning-focused reading. Effective in multiple formats, the sound-meaning lessons can be delivered in a typical small-group format in weekly 20- to 30-minute sessions for up to ve children at a time. However, for word callers who may need extra help, these lessons can be used more intensively with individual children in 10- to 15-minute daily lessons.

Taken together, the collection of research-tested interventions in this book provides a wide variety of ways to reach a group of struggling readers for whom we have typically had few instructional resources. Despite their variety, the common goal of these interventions is to *open children's minds to meaning* by helping them think more exibly about print, giving them access to the rich world of reading that has been just out of their reach.

X Preface



Who Are Your Inflexible Thinkers?

A Quick Classroom Assessment*

Imagine a third grader, Brittany (a fictitious but representative student), who is sitting across from me one afternoon at a quiet table in her classroom. I am a researcher visiting Brittany's school to study the role of flexible thinking in reading comprehension, and Brittany is excited to leave her regular classroom activities to play "reading games" with me. We are looking at some cards with printed words, such as the words in Figure 3–1, which can be sorted by initial sound and word meaning to assess Brittany's flexible thinking about print. For all intents and purposes, Brittany appears to be a typical student. She is bright and engaged. She decodes fluently. However, she struggles with comprehension.

FIGURE 3-1

A Set of Sound-Meaning Sort Words

bear	bunny	bird
boat	bus	bike
tiger	turkey	toad
train	truck	tracto

After demonstrating a 2×2 sort with a different set of words, I ask Brittany to sort the words in Figure 3–1 in two ways, just like I showed her: by how the words sound and by what the words mean. As you might imagine after reading the list, the words can be sorted into four piles of three cards each, divided according to sound (/b/ or /t/) and meaning (vehicles or animals). See Figure 3–2 for a correct sort of these cards, which divides them by sound and meaning along the columns and rows of the matrix, respectively.

Well, even though I have just shown Brittany how to do the 2×2 sort, and even though I explain that she should sort two ways, just like I showed her, Brittany sorts the cards into only two piles: a pile of words that start with the /b/ sound and a pile of words that start with the /t/ sound (see Figure 3–3). When I correct her sort (so that it looks like Figure 3–2) and ask her

^{*}Coauthored with Elizabeth A. Coppage

"Why do you think we would sort them this way?," Brittany seems to experience a flash of insight, exclaiming, "Oh! I just did the sounds. I have to think about whether they're animals or transportation, too!"

FIGURE 3-2

A Correct Sort of the Sound-Meaning Sort Words in Figure 3-1

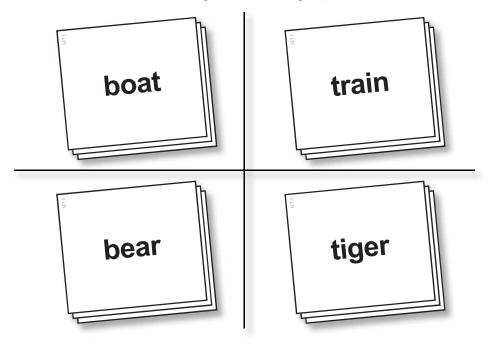
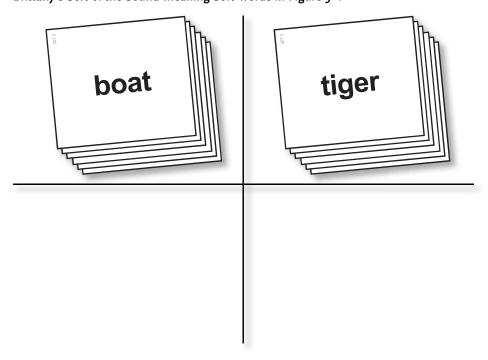


FIGURE 3-3

Brittany's Sort of the Sound-Meaning Sort Words in Figure 3-1



This opening vignette illustrates the inflexibility we typically see in word callers' thinking. These children are less able to hold words' sounds and meanings in mind at once and flexibly switch between them. Not surprisingly, in a recent study comparing word callers to skilled comprehenders, word callers performed significantly more poorly on this assessment than their peers with better comprehension (Cartwright and Coppage 2009). Like these children, Brittany performed poorly on this assessment, focusing solely on sound for her sort. When I showed her a correct sort, she had an "aha!" moment because she realized that meaning was important, too; she also realized that she had not been thinking about it. This is the first step on the way to learning how to deliberately consider both sounds and meanings while reading. (I should note that children may also demonstrate inflexible thinking on these sorts by focusing only on meaning and not on sounds. In these cases, too, children demonstrate an inability to coordinate multiple components that are important for skilled reading.)

Who Are Your Inflexible Thinkers? An Assessment to Try

Now I'd like to share a cognitive flexibility assessment I developed, which you can use to determine the degree to which your students can think flexibly about sounds and meanings of printed words (Cartwright 2002, 2006, 2007, 2008c; Cartwright et al. 2006; Cartwright, Isaac, and Dandy 2006). In this chapter I provide step-by-step instructions for performing the brief (5–10 minutes) flexible thinking assessment, the reproducible worksheet necessary for scoring the assessment, and average scores for strong readers and word callers across grade levels for comparison purposes, so that you know what to expect from your students. Finally, the materials you need to conduct the assessment accompany the book and can also be used to teach flexible thinking (a process described in Chapter 4), which improves reading comprehension. The ability to assess students' flexible thinking about words' sounds and meanings offers the opportunity to

- explain the inflexibility you might have observed in your students, which may contribute to their comprehension difficulties
- determine which of your students might benefit from additional exercises to improve flexible thinking, and thus comprehension
- measure your students' flexible thinking before and after you administer interventions (or at the beginning and end of marking periods) to assess whether your students' flexible thinking has changed, and
- improve flexible thinking about print, using the assessment materials for a flexible thinking intervention, which is described in Chapter 4.



INSIGHT FROM CHILDREN'S THINKING

Reading requires flexible attention to many aspects of texts, but word callers are typically less cognitively flexible than their peers. This flexible thinking assessment enables teachers to determine whether students can consider flexibly both sounds and meanings of print, providing important diagnostic information to inform instruction for struggling students.

The Research Base

As we learned in Chapter 2, research findings on children's thinking from fields in the Learning Sciences, such as cognitive development, neuroscience, and educational psychology, has focused on executive control processes, or those deliberate goal-directed mental activities that support academic tasks, like reading. Struggling comprehenders' difficulty with understanding what they read may sometimes be explained in terms of a particular executive control process, cognitive flexibility, which is the ability to consider multiple aspects of a task at once and mentally switch between those task features (Cartwright et al. 2010; Jacques and Zelazo 2005). Sorting tasks are particularly well suited to assessing cognitive flexibility because they enable us to see easily whether children can switch between multiple aspects of the sorted objects (Inhelder and Piaget 1964; Jacques and Zelazo 2005). Some of these tasks require children to sort along one dimension, say color, and then switch the sorting rule and sort by shape (e.g., the Dimensional Change Card Sort, Zelazo et al. 2003), whereas other tasks have children sort by multiple dimensions at once (e.g., the multiple classification task, Bigler and Liben 1992; Cartwright 2002; Inhelder and Piaget 1964). And, although many researchers have found relations between general assessments of cognitive flexibility (such as thinking flexibly about colors and shapes of objects) and reading ability (e.g., Arlin 1981; Briggs and Elkind 1973; Cohen, Hyman, and Battistini 1983; Reiter, Tucha, and Lange 2004), their work didn't tell us exactly how cognitive flexibility might be related to reading.

I wondered whether we might be able to assess flexibility in thinking about *specific* aspects of reading, and I created the sorting task with which I opened the chapter, adapted from other work in cognitive development (Bigler and Liben 1992; Inhelder and Piaget 1964). This task requires children (or adults) to sort words by sound and meaning simultaneously, to assess the degree to which they can think flexibly about these particular components of print (Cartwright 2002). Sound-meaning flexibility (also called graphophonological-semantic cognitive flexibility) contributes to reading comprehension in beginning readers (Cartwright et al. 2010), second to fourth graders (Cartwright 2002), and adults. As

you might expect, sound-meaning flexibility improves across the lifespan, and it varies within grade levels, with some children performing better than some adults (Cartwright, Isaac, and Dandy 2006). More important for our discussion, at-risk readers are about half as flexible as their typically developing peers (Cartwright 2008c), and as noted above, word callers are less than half as flexible as good comprehenders (Cartwright and Coppage 2009). This kind of reading-specific cognitive flexibility has particular relevance for teachers, as it can be taught, resulting in improvements in reading comprehension (Cartwright 2002, 2006; Cartwright, Clause, and Schmidt 2007). The exercises used to teach it will be described in Chapter 4.

Giving the Assessment: Materials, Steps, Scoring Tips

This quick assessment provides a way to determine how well readers can think about two aspects of print (sound and meaning) at the same time. The assessment is administered individually and takes approximately 5 to 10 minutes for most students. During the assessment, you will model the sound-meaning sort with one set of words, and then students will sort four sets of printed words by sound and meaning at the same time into a 2×2 matrix, just like the cards in Figure 3–2. Correct sorts force students to think beyond sounds and also focus on meaning. Thus, the assessment provides an index of their ability to think about both features at once and flexibly switch between them.



Materials

To perform the assessment, you will need the following materials. Although nine sets of word cards and the 2×2 matrix accompany the book, you will only need five sets of word cards for the assessment. (See Figure 3–4 for lists of words in each of the sets.) The four extra word sets can be used for posttesting your students at a later time.

- five sets of twelve word cards (one to teach the task, four to assess the student)
- 2 × 2 matrix
- stopwatch
- Assessment Scoring Sheet (see Figure 3–5 for the reproducible sheet)
- a clipboard (to hold the scoring sheet in your lap, out of the student's view)
- a pencil or pen to record scores

Answers to Teachers' Frequently Asked Questions

in your classroom. In this section I provide a few of the most common questions I have received about this assessment, along with answers, to help you get started time, you may have some questions about how it might work with your students As a classroom teacher or reading specialist trying this assessment for the first

To whom should I administer this assessment? Should I assess all of the students in my class? ö

of your students have difficulty coordinating words' sounds and meanings, other words' sounds. Each of these patterns tells you a bit about your students' thinking and can help you determine whether your students need additional instructhat you can use to plan your instruction. For example, you may find that some Because children within each grade level (and even adults) vary on this assessment, it may provide useful information about individual students' processing tional support to help them process and coordinate particular aspects of print. students may focus only on meanings, and still other students may focus on Ä

Q: Can I administer the assessment in small groups?

A: No, this is an individual assessment. You must time each student's sorting, and the student must provide explanations for correct (or corrected) sorts. These are best accomplished in a one-to-one format so that you can accurately assess each individual student's level of flexible thinking.

Q: What if my student cannot read the words on the cards?

A: A basic assumption underlying this assessment is that students have at least a moderate level of decoding skills because we want the assessment to measure flexible thinking—not whether a student can decode words. If your student has a great deal of trouble decoding the words for the assessment, then his or her reading difficulties probably extend beyond comprehension, and that child's scores will likely be significantly affected by decoding difficulties. In these cases, students may need more decoding work before they are ready to work on flexible thinking. Occasionally, students might have trouble with a word here or there, despite adequate decoding skill, and in these cases, you should provide the correct pronunciation (or meaning) for the student. (For example, I have had students ask me what a bonnet is, and I tell them, "It's a kind of hat.") When you introduce the assessment you should remember to tell your student, "If you don't know a word, it's okay. I can help you," so that your student knows to ask for help when needed.

Q: When should I administer this assessment of flexible thinking?

A: You could test your students' flexible thinking at the beginning of the school year to see where they are in relation to one another and in relation to other children who have been tested (see Figure 3–7). This beginning-of-year assessment will help you determine whether your students are able to coordinate flexibly the sounds and meanings of print and may help you determine which students might benefit from exercises designed to increase their flexible thinking to improve comprehension (Chapter 4). Assessment results might help you choose which students to include in small-group flexible thinking lessons (see Chapter 4). You might also decide to repeat the assessment at later points in the school year, especially after flexible thinking and/or comprehension interventions, to determine whether your students' flexible thinking has improved. Another way you might consider using the assessment is as a targeted diagnostic tool when you believe some of your students are particularly inflexible thinkers about print. The assessment will help you determine, for example, whether students are sound-focused, like typical word callers, in which case they might need additional, targeted lessons to improve their focus on sounds and meaning simultaneously.

Q: How do I incorporate this assessment into the school day?

A: You might train a teacher's aide to administer the assessment while you are working with small groups during your language arts block, or you might test individual children while the rest of the class is at literacy centers. Another option is to work with your reading specialist who can pull students out of class to perform the assessment.

- Q: I gave the instructions for the assessment and modeled a correct sort and explanation for my student, just as the directions suggested. But, my student doesn't seem to get the task. What should I do? Can I repeat the directions?
- **A:** In the research on flexible thinking, we did not repeat the directions for students because this would have given some students extra support that other students did not have. The scores in Figure 3-7 are based on assessments with directions that match those described in this chapter. If we were to provide extra support by repeating directions for some students and not others, we would not be able to compare results meaningfully across children, and comparisons to the scores in Figure 3-7 would also lose their meaning. If your student seems stuck, encourage her by saying something like, "Just sort them two ways like I showed you, by how they sound and what they mean. Do your best!" Remember, during the assessment students sort four different sets of cards, one set at a time, and the assessment process itself provides formative feedback for the students. If your student sorts incorrectly, you will correct the sort and then ask her for an explanation for your corrected sort (e.g., why would we sort them that way?), and this process often helps students understand the nature of the task because they see how a correct sort looks. Usually, across the four card sets in the assessment, students will improve from the first set to the last. Remember, too, that children at all elementary grade levels, first through fifth, have received scores of zero on this assessment, indicating very limited flexibility. So, variation in student ability is to be expected.

Q: My student wants to know how she did on the assessment. What do I tell her?

A: Just as you would with any assessment, offer encouragement and motivation and praise your student's efforts on the task without revealing details of her performance (e.g., "You worked really hard and did a great job!"). With this assessment, we genuinely want to know how students think about print to provide us useful diagnostic information about their cognitive flexibility. So, in that sense, there are no right answers, only interesting ones.

Q: My students want to spread out the cards on the table or look at them all in their hands before they put them in the matrix. Is this allowed?

A: Yes, your students are permitted to look at the cards in any way they choose, but you should not do so when you model the sort. When you model the sort, you should hold the stack of cards in your hand and place them, one card at a time, into four neat stacks (of three cards each) in the 2 × 2 matrix. When you give your students each set of cards for the assessment, remember that timing of each sort begins when your student *looks* at the first card in his or her hand (because that indicates the point at which your student begins thinking about the cards) and ends when the last card is placed in the matrix. Once you begin timing, your student can spread the cards out on the table, look through all the cards in her hand, or arrange and rearrange them in the matrix, if needed. You should not prompt these activities, but you should allow them if the student chooses them. Your student's sorting time will include all the time spent thinking about the cards until sorting is complete.

Q: Why do I have so many word sets in the materials that accompany the book?

- **A:** We gave you multiple sets so that you would have enough word sets to pretest and posttest your students at different points during the school year, perhaps before and after an intervention or at the beginning and end of a marking period. You have nine sets. Choose one (perhaps the first set) to be your demonstration set. Then, the remaining eight sets can be used to assess students, four at pretest and four at posttest. Use the same demonstration set to model correct sorts and explanations both times. New sets are provided for posttest in order to ensure that students aren't improving in flexibility simply because they are using familiar words.
- Q: This task seems so different from reading real texts that I am skeptical about the relation between it and reading comprehension. Are they related, and how does this skill transfer to students' reading comprehension?
- A: The ability to think flexibly about sounds and meanings of print (measured with the assessment presented in this chapter) is significantly related to reading comprehension across the lifespan: in beginning readers (with a correlation of 0.61, Cartwright et al. 2010), in second to fourth graders (with a correlation of 0.70, Cartwright 2002), and in adults (with a correlation of 0.58, Cartwright 2007). Think about sound-meaning flexible thinking as a skill that *enables* comprehension rather than a skill that *transfers to* comprehension. The ability to think flexibly about the many aspects of print helps students to shift attention from words to meaning. Readers who can easily and flexibly consider meaning alongside letter-sound information will be better able to construct rich meanings while reading. However, readers who cannot think flexibly about both letter-sound information and meaning will be limited in their ability to derive meaning from text.

How Does This Help You?



Questions to Consider

- Do you have students now whom you think might have difficulty with this assessment? Why do you think so?
- At what points in the academic year would it be useful to assess your students' flexible thinking?
- How might flexible thinking assessment results affect your instruction: individual, small-group, or whole-group?

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