

# The Relationship Between Teacher Knowledge and Effective RTI: When We Know Better, We Do Better

by Carol Tolman

If you knew me, you would likely know how much I adore being surrounded by classrooms full of children soaking up knowledge, hanging on their teachers' every word. So imagine my delight when I visited a first-grade classroom in March and saw children engrossed in their favorite books. One particular boy, sitting off to the side, caught my attention. Appearing to devour a Mo Willems classic, Brayden (not his real name) rapidly flipped through the pages as he shared his enthusiasm for Elephant and Piggie's adventures in *I Will Take a Nap* (2015). Since his teacher understood that to read better you must practice often, she organized daily individual book readings, often referred to as DEAR (Drop Everything and Read) time. Looking over Brayden's shoulder, I could tell that he enjoyed the book as he smiled and laughed at the pictures. I asked if he would mind reading a section of the book out loud, which he did without hesitation, misreading the words 'rested' as 'red,' 'cranky' as 'cool,' and 'floating' as 'fly.' He seemed to look at the first letter of difficult words and simply guess, choosing words that made no sense to the meaning of the story. When I asked him to tell me a bit about what he just read, he said it was about animal friends that fly in the air, clearly not the gist of this adorable story; Elephant and Piggie are taking a nap, not flying. Frustrated with this experience, I left Brayden to his "reading."

When asked, Brayden's teacher concurred with my concern for his lack of progress. She had previously discussed Brayden with team members, suggesting that he "probably had a comprehension issue" and needed Tier 2 or Tier 3 pullout supports with Title 1 or special education teachers to "fix it." She predicted that he would be identified as "special education" by third grade. Beyond that, she was out of options and at a loss for what to do. At a loss, that is, until she learned what she needed to know to have an impact on all students.

## Teacher Expertise Makes All the Difference

Armed with high-quality professional development, data analysis, appropriate instructional materials, and coaching supports, Brayden's teacher became adept at meeting his needs, ameliorated his reading and spelling difficulties, and avoided a referral. Just how did she do this? By developing an understanding of how the English language is organized, learning the science behind how brains process text, and teaching in a diagnostic-prescriptive manner. These, and other topics, are thoughtfully and thoroughly covered throughout this issue of *Perspectives*. I will focus on this last idea to illustrate my point: When teachers know better, they do better. Response to Intervention (RTI) does not work without knowledgeable teachers. And, while not all reading issues can be ameliorated during Tier 1 instruction, many can.

## A Diagnostic-Prescriptive Approach to Instruction

Please know that I, too, once struggled to have an impact on my weak students' progress. When faced with students who did not learn to read the typical way, I tried harder, kept them in for recess, taught my lessons a little louder, held after- and before-school tutoring sessions, and employed parents to provide more review of what I taught in the classroom ... as if that was going to make a difference. More of the same ineffective, uninformed instruction led to the same disappointing results.

So, what does work? Let's revisit Brayden's situation to identify what an expert teacher, armed with the knowledge of how to teach reading, can do based on classroom observations and expert error analysis.

Earlier, we saw that Brayden misread the word 'rested' as 'red,' 'cranky' as 'cool,' and 'floating' as 'fly.' Can you identify specific error patterns? What parts of each word were read accurately? Inaccurately? What can this tell us? Review Table 1 to identify Brayden's strengths and weaknesses:

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TABLE 1. Word Analysis

Target Word	Error	Initial letter-sound	Final letter-sound	Middle letter-sounds	Other observations?
rested	red	correct	correct	Accurate vowel sound; missing three letter-sounds.	-ed morpheme omitted; this has been taught.
cranky	cool	correct	incorrect	Missing five letter-sounds; inserted wrong letter-sounds.	Brayden has not been taught that -y says /ee/ at the end of a multisyllable word.
floating	fly	correct	incorrect	Correct initial blend 'fl,' inaccurate with the rest of word.	Vowel team 'oa' and suffix -ing has been taught; Brayden should be able to read this word.

## Abbreviation

RTI: Response to Intervention

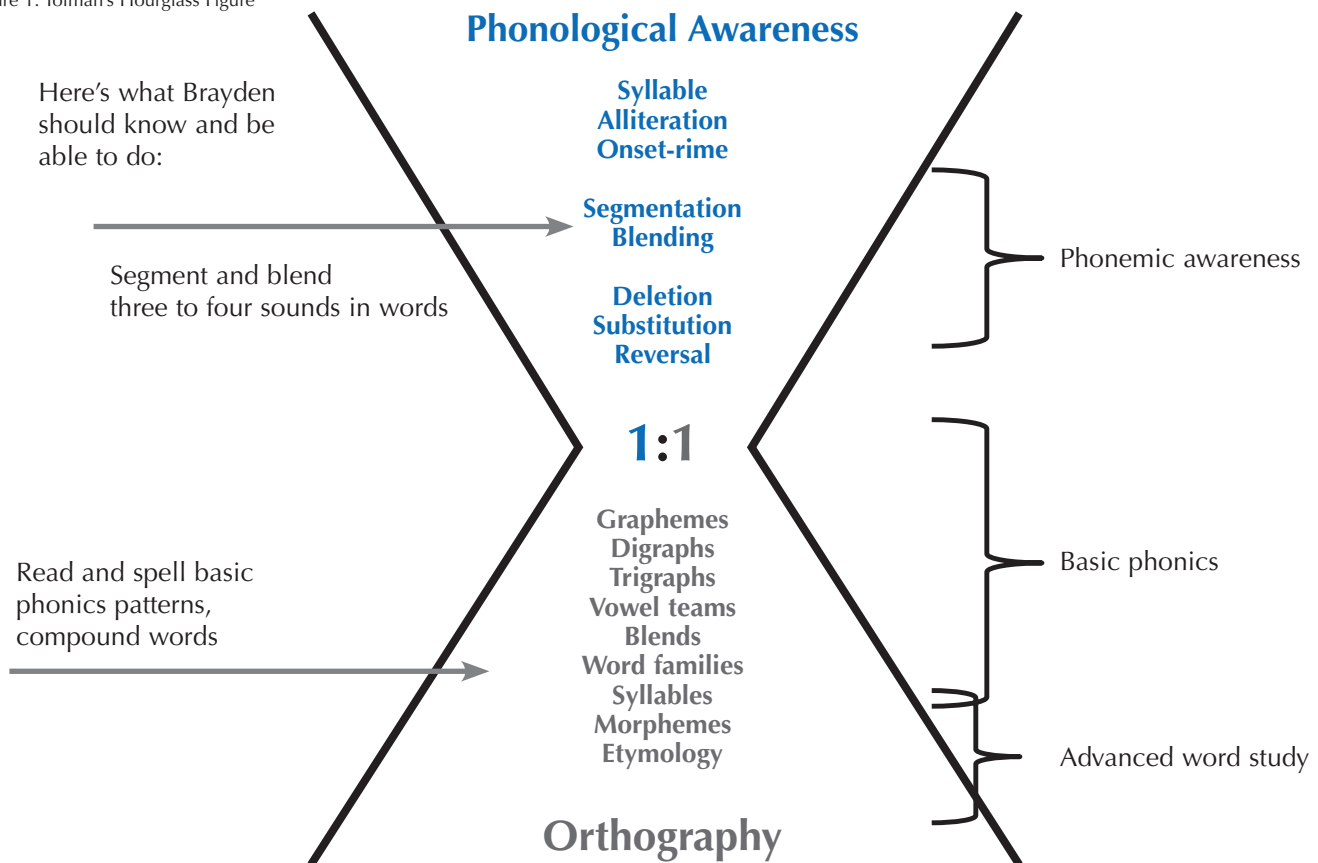
Brayden’s teacher noticed that all initial sounds were read accurately. Initial sounds of words are easiest to decode; the last sounds of words are the next easiest to read and spell. However, Brayden appeared to simply look at the beginning of these words and guess, perhaps based on context and pictures. He guessed inaccurately, missed most middle and ending sounds, and misunderstood the author’s message. Often, errors of these types happen when students are encouraged to look at the beginning of the word and guess based on context, an inefficient way to read. Other times, such errors are due to weak phonology, or the inability to be aware of individual sounds within words when reading and spelling. In Brayden’s case, he seems able to decode initial sounds, is inconsistent with final sounds, and is inaccurate with middle sounds.

This is not a complete picture of his ability to read, however. An expert teacher knows to look beyond errors in text and include informal decoding surveys, screeners with both real and nonsense words in isolation. Administering and analyzing a phonics screener would be an important next step to gather information on Brayden’s decoding skills. His teacher did not yet understand the importance of a phonics screener, but she did have classroom writing samples. Keeping his decoding errors in mind, Brayden’s teacher analyzed his spelling errors with an eye towards understanding what he knows, and does not know, about the sound-symbol relationship of the English language.

### The Importance of Informed Error Analysis

Spelling errors are a window into a child’s knowledge of the alphabetic principle, if you know what you are looking for...and that’s a big IF! To understand what Brayden should know and be able to do with phonological awareness and basic phonics, I will refer to my Hourglass figure (Figure 1), a graphic that outlines the importance of representing both phonemes (sounds) and graphemes (letter or letter patterns that represent individual sounds) for reading and spelling. As a first grader, Brayden should be able to segment and blend words consisting of three to four sounds, or CVC, CCVC, and CVCC patterns. (Here, C stands for a consonant sound, not a letter; V stands for a vowel sound, not a letter.) We see this phonological progression outlined in the top portion of the Hourglass figure. Additionally, he should be able to connect letter and letter patterns (graphemes) to these phonemes to read and spell words that include beginning and ending blends. The scope and sequence for first-grade reading and spelling includes compound words, basic vowel teams (oa, ea, ai, ay, ee), silent e long vowel patterns, and inflectional endings (-ed, -ing, -s, -es, -er, -est). See to the article, “Working Smarter, Not Harder” (Tolman, 2005) for a more thorough review of this topic.

Figure 1: Tolman’s Hourglass Figure



Armed with an understanding of what Brayden should know and be able to do, his classroom teacher analyzed errors based on the phonological, orthographic, and morphological layers of language. What, exactly, does this mean? Let's consider Figure 2, Brayden's mid-year, Grade 1 writing sample.

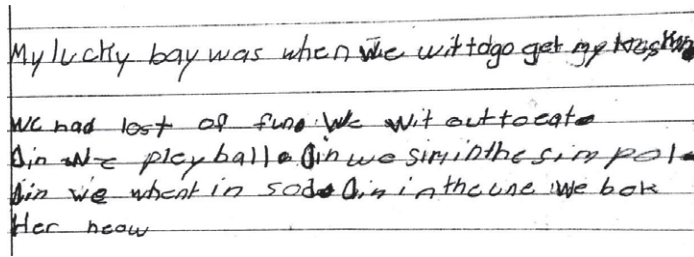


Figure 2: My Lucky Day

Translation:

My Lucky Day

My lucky day was when we went to go get my cousin. We had lots of fun. We went out to eat. Then we played ball. Then we swim in the swim pool. Then we went inside. And in the ? we brought her home.

When we understand the structure of the English language, this writing sample and Brayden's reading errors tell us a lot. For example, Brayden could benefit from the following support from his classroom teacher during both Tier 1 whole group and Tier 2 small group instruction:

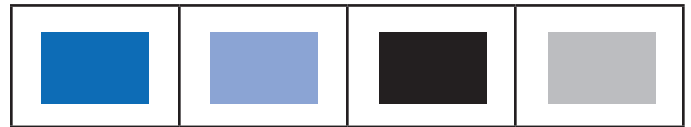
**Phonology**

**'then' misspelled as 'din'**

Describe and model how to form the sound /th/ in the mouth. Brayden's teacher noted that he pronounces 'this' as 'dis.' No wonder he misspelled that word. Discussions about where your tongue is placed for /th/, using mirrors, reinforces how to produce the correct sound. Follow this with connecting the letters 'th' to /th/ and provide plenty of opportunities to read and spell this and other words with digraph th.

**'went' misspelled as 'wit,' 'swim misspelled as 'sim,' 'lots' misspelled as 'lost'**

Provide small group phonemic awareness instruction with words that include four sounds, with blends in the beginning (CCVC) and blends at the end (CVCC). Help students manipulate colored blocks to represent each sound in a word you say, first without seeing the letters. Once Brayden develops an awareness of four sounds in words, he will be more likely to accurately spell and read words with these patterns.



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**TABLE 2. Target Words and Sources of Confusion**

Target Word & Misspelling	Phonological confusion with speech sounds?	Orthographic confusion with letter patterns?	Morphological confusion with meaningful units?
Day – bay		b/d confusion	
Went – wit	Omission of nasal /n/ *, vowel confusion		
Lots – lost	Difficulty sequencing CVCC pattern		
Then – din	Confusion between /d/ and /th/, vowel confusion		
Played – play			Dropped inflected ending -ed
Swim – sim	Omission of /w/ in CCVC word		
Swimming – sim	Omission of /w/ in CCVC word	Has not been taught the doubling rule for adding endings with a vowel suffix	Omission of inflected ending -ing
Pool – pol	? not sure if he is aware of /oo/ vowel sound	Has not been taught how to spell vowel team oo	
Went – whent		Use of 'wh' for 'w'	
Inside – in sod	Confusion between /i/ and /o/	Lack of awareness of compound word structure	
Brought – bok	Confusion of /t/, /k/ and omission of /t/	Has not been taught spelling of vowel team 'ough'	

\* Virgules, or the slash marks around letters, are used here to denote sounds, not letters. For example, /m/ represents the sound of the letter m, not the visual of the letter m.

Say words like 'flat,' 'brash,' 'clap,' and 'stop' first. Notice that these are CCVC words with blends in the initial position. Use a routine similar to this, where T = teacher and S = student:

- T says the whole word.
- S repeats the whole word.
- S says each sound in the word in order as S moves one block into a box for each sound.
- T asks S to touch each sound, in different order, identifying the sound that block represents.
- T asks S to blend all sounds to repeat the word.
- T takes time to explain the meaning of unknown words, such as 'brash,' or the multiple meanings of words, such as 'clap' with your hands and a 'clap' of thunder.

Note that these activities are effective for all students. Effective instruction uses the diagnostic-prescriptive approach, based on data, to know exactly what sound-letter patterns to teach, when, to whom, for how long. To make the best use of Tier 1 or Tier 2 time, Brayden's instruction needs to begin at the CCVC level.

### Orthography

Address the b/d confusion, a common error with young writers. For example, explain that your lips begin /b/ looking like a closed straight line. They then pop open as you pronounce the sound /b/. The physical shape of the letter 'b' does the same by beginning with a straight line, then making a round circle much like the popping open of the mouth. This instruction connects phonology to orthography in a multisensory approach.

Many of Brayden's errors involve spelling patterns not yet taught in Tier 1; we cannot hold him accountable for these spellings. When reviewing his writing, simply tell him how to spell words like 'pool' and 'brought.' It's OK at this point that he misspelled these words. Misspellings of patterns not yet taught directly is not a reason for referral for extra help in Tier 2, 3 or special education services.

Give Brayden and his classmates a spelling inventory, but not just any spelling inventory. Effective spelling surveys include all phonics patterns that have been taught to date, in increasing order of difficulty. Call out a word in isolation, embed it in a sentence, and ask students to write each word on appropriately lined paper. Analyze errors made out of context to ensure you cover the complete scope and sequence of skills expected to be mastered at that time, devoid of the distractions found when writing a passage. Although writing samples shine a spotlight on what students know and are able to spell, screening both reading and spelling skills out of context best identifies what a student understands about letter-sound combinations.

### Morphology

Because basic inflected endings have been taught in grade 1, Brayden should be able to spell 'played' and 'swimming.'

although he may not know why we double the 'm.' Simple inflected endings are expected to be mastered in grade 1, including plural -s, -es, past tense -ed, comparative -er, -est, and -ing. Revisit lessons in Tier 2 small group instruction with students who show weaknesses in these areas as seen in their reading and spelling.

### Accuracy First, Then Automaticity

Once students are accurate with specific sound-spelling correspondences, copious amounts of "eyes on the page" reading practice with these patterns cements them into what researchers term the "word form area." (Dehaene, 2009; Kilpatrick, 2015; Siedenberg, 2017). This means that students become so automatic reading words that they use very little cognitive desk space to decode. This automaticity allows readers to free up their mental capacity and focus more on thinking about the meaning of what they are reading. Comprehension is the end goal of reading, after all.

By the end of the year, Brayden met expected benchmark scores for first-grade students. He read more fluently, spelled more accurately, and discussed what he read with peers and his teacher. Although comprehension is a weakness for some poor readers, upon closer look, that was not Brayden's issue. And that prediction regarding becoming a special education student? No longer discussed.

### A Caveat

Teacher expertise is essential for effective implementation of RTI instruction. Part of this expertise is recognizing when student performance deviates too far from the language learning needs of the grade level, necessitating Tier 3 supports and/or referrals for specialized instruction. With this in mind, consider another student's writing sample from Brayden's first-grade classroom (Figure 3).

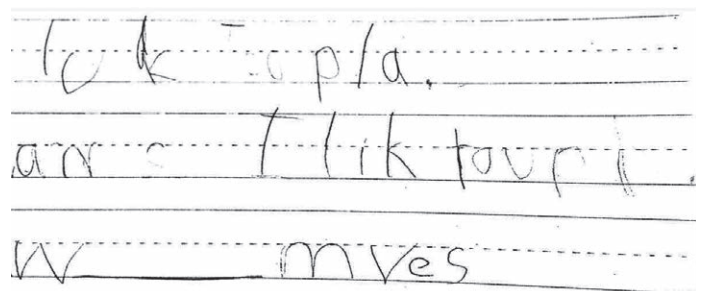


Figure 3: My Lucky Day

Translation:

Like to play.  
And I like to ?? with movies

It is apparent that this student continues to struggle with many foundational skills. Further informal and formal assessments are needed to pinpoint areas of strength and weakness, information that leads to best practices for this particular child. As this writing sample shows, Tier 3 specialized programming



is needed for some students. In these cases, classroom teachers are essential team members in collaboration with specialists and support staff. Expertise across the team becomes key, and communication to reinforce and support all programming is imperative.

Ultimately, our goal is to support all students with the skills and strategies necessary to read and spell accurately and automatically, allowing them to think deeply about what they read and write. Table 2 offers resources to help achieve these goals.

For some students, Tier 1 supports meet these needs. Although not a perfect sample, I leave you to ponder another first grader's writing, a sample decidedly more advanced than Brayden's (Figure 4). What else would you need to know to support this student? What can he do? What can't he do?

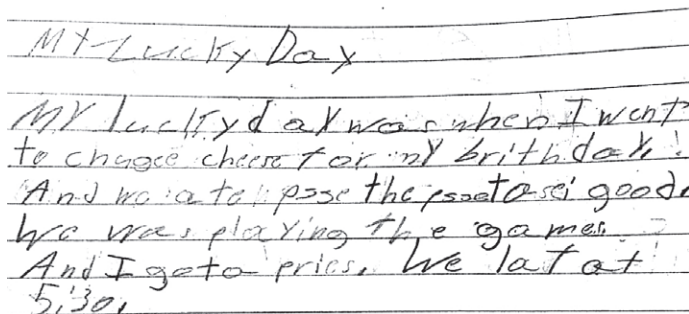


Figure 4: My Lucky Day

Translation:

#### My Lucky Day

My lucky day was when I went to Chuck E Cheese for my birthday. And we ate pizza. The pizza is good. We was playing the games. And I got a prize. We left at 5:30.

#### References

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#### TABLE 3. Texts Supporting Quality Instruction

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