Analyzing Student Data Project

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As educators, we know that there is much more to reading than comprehension, although reading comprehension is the end goal, it is important to recognize that there are several factors that contribute to a successful reader (Stahl, et al. 2020). In reviewing the Cognitive Model (Stahl, et al., 2020) it is important to recognize that phonological awareness, decoding, vocabulary knowledge and strategic knowledge (and more!) all play into a reader's success in comprehending a text. In this case study, I review the assessments administered to William, a second grader and Sarah a fourth grader.

William- Second Grade

Analysis of Assessment Data

To gain a deeper insight into William as a reader, several assessments were administered. The first assessment that William completed was the Informal Phonics Inventory (Stahl et al., 2020). This assessment, "provides a convenient means of monitoring specific skill acquisition" (Stahl et al., 2020, p. 113). In general, students learn these important phonics skills along a skills progression. The three subtests that the Informal Phonics Inventory follows provides this structure: consonant sounds, consonant digraphs and beginning consonant blends (Stahl et al., 2020)). These skills should be mastered first, "if a child knows them, we do not have to teach them. If a child doesn't, we do." (Stahl et al., 2020, p. 113). Following the individual consonant sounds and consonant digraphs and blends we assess a child's understanding of phonemic awareness using real words. Target phonemes including short vowels, words with silent e, long vowel digraphs, diphthongs and r-controlled vowels are assessed.

Based on the Informal Phonics Inventory scoring guide, William has mastered the consonant sounds subtest, scoring a 16/20. William also scored a mastery level in consonant digraphs, with a score of 4/5. The first area that William received a 'review' score is in the

subtest of beginning consonant blends, with a 15/20. This score reflects the rest of the data received from the Informal Phonics Inventory scoring either a 'review' or 'systematic instruction' score in the remaining 6 subtests (final consonant blends, short vowels, silent e, long vowel digraphs, diphthongs, and r-controlled vowels). In reviewing the Common Core State Standards (National Governors Association, 2010), it appears that William is behind grade level in distinguishing long and short vowels when reading regularly spelled one-syllable words and knowing spelling- sound correspondences for additional common vowel teams (CCSS.ELA-LITERACY.RF.2.3.A & CCSS.ELA-LITERACY.RF.2.3.B). The subtests short vowels in CVC words and silent e show these deficits.

The next assessment William was guided through was the Fry Sight-Word Inventory (Fry, 1980). William was given the first 100 words. The Fry Sight-Word Inventory helps gain insight on the words that a reader can recognize by sight. Sometimes referred to as high frequency words, it is important to make the distinction. A sight word is any word that a child can recognize by sight. Fluent readers have a large sight word inventory because the words have been orthographically mapped in their brain (Stahl, et al., 2020). High frequency words are words that are "words that occur most often written in English" (Stahl, et al., 2020, p. 114). The relationship between sight words and high frequency words is that "all high-frequency words must eventually become sight words if a reader is to be fluent" (Stahl, et al., 2020, p. 114).

William was able to identify 94/100 of the sight words given to him. The criteria for correctly identifying a word are, "if a student takes more than 0.5 second to produce the pronunciation or perceptibly 'sound it out', then that word cannot reasonably be judged a sight word" (Stahl, et al., 2020, p. 116). The words William struggled with include he, what, were, been, now and find. William was able to self-correct the word 'he' (he initially said 'his'). Based

on the Common Core State Standards (National Governors Association, 2010), and the data

available, I have determined that William is meeting grade level expectations (CCSS.ELA-

LITERACY.RF.2.3).

William also completed the Elementary Spelling Inventory (Bear et al., 2019). This

assessment helps an educator determine the spelling stage that a student is in. To administer,

students are asked to spell a word. The word is accompanied in a sentence to clarify meaning.

William was asked to spell the first 10 words. He mastered the first word and then

struggled with the remaining 9 words. More specifically, this assessment shows that William has

mastered his beginning consonant and final consonant sounds in words. The areas of focus, as

determined by this assessment include digraphs, short vowels, common long vowels, and blends.

Referencing the Common Core State Standards, William is behind grade level based on his

spelling stage. I estimate that William's spelling stage is Beginning readers/letter name spellers

(Bear et al., 2020). This stage is most appropriately linked to the first grade reading level. At the

end of second grade, William should be successfully distinguishing long and short vowels.

Knowing spelling-sound correspondences for common vowel teams and recognizing and reading

grade-appropriate irregularly spelled words (CCSS.ELA-LITERACY.RF.2.3). A quick but

important distinction to make here is the difference between decoding, reading words, and

encoding, writing words (Stahl et al., 2020).

The final assessment William completed was an Informal Reading Inventory (Leslie &

Caldwell, 2010). An Informal Reading Inventory (IRI) is designed to take a comprehensive look

at a reader (Stahl et al., 2020). Through this assessment we are looking at all three pathways of

the Cognitive Model (Stahl et al., 2020): automatic word recognition, language comprehension

and strategic knowledge. After administering the IRI, the teacher decides of the student's reading level which ranges from independent, instructional and frustration (Stahl et al., 2020).

William's data collected from the IRI shows that the topic was a familiar topic. Further, this means that William should have some background information to help him with his language comprehension. The next thing we look for is the fluency rate, the number of words read per minute. William read 91 words per minute: this falls within the acceptable range for a second grader. In fact, William's score puts him slightly above grade level based on the QRI 5 Fluency norms. William had a total of 15 miscues with 9 miscues that changed the meaning. This means that this passage is at William's instructional level based on number of miscues. Based on the number of ideas recalled and the questions, William is in the frustration level. As an educator of William, I would want to administer another leveled IRI. Overall, I would deem this passage to be on the cusp of frustration and instructional.

Common Core (National Governors Association, 2010) expectations state that William should be self-correcting and rereading as necessary (CCSS.ELA-LITERACY.RF.2.4.C). Therefore, I would say that William is behind grade level for this expectation.

Goals for Instruction

McKenna, Stahl, and Flanigan's Cognitive Model (2020) addresses the underlying components of reading comprehension. It is important to consider a child's success regarding each of the 3 pathways: automatic word recognition, oral language comprehension and strategic knowledge (Stahl et al., 2020). Based on all the data collected from William, there are two instructional goals I would like to dive deeper into. Both goals rely heavily on improving and strengthening William's automatic word recognition through phonemic awareness instruction.

The first goal I have created for William is in building his phonemic awareness. The Informal Phonics Inventory (Stahl et al., 2020) and the Elementary Spelling Inventory (Bear et al., 2019) showed us that William is lacking in some foundational skills. I am specifically excited to work on William's knowledge of consonant blends. Scoring a 6/12 in this subtest in the Informal Phonics Inventory (Stahl et al., 2020) and making several mistakes in consonant blends on the Elementary Spelling Inventory (Bear et al., 2019), I think that William's automatic word recognition would vastly improve.

This area of focus is so important because "word recognition difficulties underlie the vast majority of reading problems" (Stahl et al., 2020, p. 11). A reader needs a solid base of decoding knowledge to become a successful reader. The Common Core's (National Governors Association, 2010) foundational skills in reading stresses the importance of knowing and applying grade-level phonics and word analysis skills in decoding words (CCSS.ELA-LITERACY.RF.2.3).

While systematic instruction in consonant blends will help William become a more successful reader, it is important to note that phonics skills are learned in a progression. Focusing first on consonant blends is best to begin with but the other areas of concern will still need to be addressed: short vowel CVC words, vowel digraphs, silent e, vowel diphthongs and r controlled.

The next instructional goal William would benefit in is explicit instruction in short and long vowels. This distinction proved to be difficult throughout the various assessments William was given. Often, William flipped the vowel sound (short when supposed to be long, long when supposed to be short) and this caused confusion in decoding and therefore meaning. The Elementary Spelling Inventory (Bear et al., 2019) showed that William made 4 errors in common long vowels and 3 errors in short vowels.

Working intensely on building up William's phonemic awareness will lead to more success throughout all of pathway 1. Specifically, I am excited to see how William's growing knowledge and understanding of phonograms, chunks of letters, will lead to progress in his contextual knowledge. Based on the data from the IRI, I considered a goal in improving context knowledge or the idea that "readers use information from context to minimize the use of letter-sound information to recognize words" (Stahl et al., 2020, p. 11). Reluctant readers often struggle in decoding a word and guess based on the first sound. William showed this in his Fry sight-word assessment as well. However, I am not making this a goal for William yet because, "as decoding improves, reliance on context diminishes" (Stahl et al., 2020).

Instructional Strategies

To help improve William's phonological awareness, and his awareness of phonemes specifically, I would like to utilize Elkonin boxes (Stahl et al., 2020) to help William see where each phoneme of a word fits. I think that this will help specifically in William's understanding of consonant blends, then short vowels, and finally long vowels. I feel that the visual and motor requirements are beneficial to a student that is trying to strengthen their sound knowledge.

The next strategy I would implement is using decodables with the targeted consonant blends and vowel sounds that we have practiced. Reading Rockets (Decodable Text Sources, 2022) discusses the importance of using decodable text sources for real-world reading application of the skills learned. Specifically, I would find high-interest decodables so that William maintains motivation while practicing these skills.

Finally, I would incorporate the use of phonics games to help reinforce the important phonemes we have learned and reviewed. I found a few games that William would benefit from on the Florida Center for Reading Research website (*Phonological Awareness*, FCRR, 2005).

The first game I would introduce William to is a phonics game working on letter-sound correspondence. This game has onset and rime cards that can be used to make words. I would use this game first because it uses the consonant blends. The next game builds from the letter-sound correspondence game but now has pictures to help build the words. I like that this game incorporates pictures to help show the target word. The slight variation of this game includes pictures of items that are almost the same- for example, crown and clown. I think it would be beneficial for William to see the patterns in clown and crown or thread and bread. This game would be more challenging but would lend itself as a challenge. The final game focuses on vowel digraphs. I anticipate using this game after William has fully understood and made the distinction between short and long vowels.

Sarah- Fourth Grade

Analysis of Assessment Data

To understand Sarah better as a reader, she was given the Elementary Spelling Inventory (Bear et al., 2019) and 2 different levels of Informal Reading Inventories, a guided reading level P and Q.

The Elementary Spelling Inventory (Bear et al., 2019) helps an educator see what encoding or spelling phonemic skills a student has. This assessment can also help identify what spelling stage a student is in. Based on Sarah's data she mastered initial and final consonants, short vowels, digraphs, other vowels, and inflected endings. Sarah did miss one common long vowel /oa/ in throat as well as the soft /c/ sound in cellar. Additionally, Sarah struggled with the unaccented final syllable in cellar. Despite these outliers, Sarah's big area of focus is in bases and root words and advanced affixes. Sarah missed both features in the words that have them scoring a 0/5 in both categories. Referencing this data, I would put Sarah at an intermediate reader/syllable and affixes speller level (Bear et al., 2020). With the correlating reading level being from late third grade to sixth grade I think that Sarah falls within the expected range. The foundational reading skill from the Common Core State Standards (National Governors Association, 2010) suggests that Sarah might be slightly behind. The standard states that students should be using morphology (roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context (CCSS.ELA-LITERACY.RF.4.3.A).

The next test Sarah completed was a narrative Informal Reading Inventory (Leslie & Caldwell, 2010) with a guided reading level P. The Informal Reading Inventory, IRI, assessment looks at a student's overall reading comprehension. This includes automatic word recognition,

language comprehension and strategic knowledge as seen in the Cognitive Model (Stahl et al., 2020).

The beginning of the IRI asks questions to help build some background knowledge. Based on the score, the topic is deemed familiar or unfamiliar. Sarah's score tells us that she is familiar with the topic. Sarah had 11 miscues, counting 1 error that was self-corrected. Only 4 of the 11 miscues changed the meaning. This data tells us that Sarah was reading at an instructional level. Sarah read 71 words per minute. This falls within the expected range of fourth graders. Following the passage there are implicit and explicit questions to answer as well as a retelling checklist. Finally, Sarah struggled with the end of passage comprehension questions. She scored a 8/47 ideas recalled and 5/8 questions answered. These scores correlate to a frustration level. Consulting the Common Core State Standards (National Governors Association, 2010), Sarah is lacking a bit in standard CCSS.ELA-LITERACY.RF.4.4.

With an overall score suggesting overall instructional, potentially frustration. Sarah was given an expository level Q IRI. A fourth grader should be reading between levels P and S (Stahl et al., 2020, p. 47). Unlike the previous IRI Sarah completed, she was not as familiar with this topic. She had 8 miscues, 4 of which changed the meaning. This shows that the passage, based on accuracy suggests it is an instructional level. Sarah read 75 words per minute, falling within the expected range for a fourth grader. In this passage, much like the last, Sarah struggled with the comprehension questions. Sarah scored 2/57 ideas recalled and within the frustration level for questions answered. These findings once again show that Sarah is behind grade level in comprehending grade level texts.

Goals for Instruction

Reviewing the data collected from the Elementary Spelling Inventory (Bear et al., 2019) and the Informal Reading Inventories (Leslie & Caldwell, 2010), I have found two areas of need for Sarah. With the knowledge that we read to comprehend what we are reading, I think that Sarah would benefit by growing her abilities in the automatic word recognition pathway and strategic knowledge (Stahl et al., 2020).

The importance of automatic word recognition should not be diminished, even in the older grades. Through Sarah's Elementary Spelling Inventory, Sarah is lacking knowledge in base words, roots, and affixes. Explicit instruction in this area will help Sarah be able to decode and understand the words that she sees in grade level texts. Morrow and Gambrell (2018) express the importance of word study in a reader's schedule. Looking at the data from the spelling inventory helps us to see the current orthographic knowledge Sarah has (Morrow & Gambrell, 2018). An expectation, as outlined in the Common Core, shares that fourth graders should understand morphology. Further, "being able to identify and understand the meaning units or morphemes (prefixes, suffixes and roots) that comprise multisyllabic words can aid in the development of students' vocabulary knowledge" (Ganske, *Best Practices in Vocabulary Instruction*, 2018, p. 209).

The next goal I have created for Sarah falls within the strategic knowledge pathway (Stahl et al., 2020). An important question to consider is if comprehension is limited from poor strategies? Based on the data collected, I think that Sarah's reading comprehension could be strengthened through strategic knowledge instruction. Often suggested in earlier grades, strategy instruction helps students make sure that they are monitoring their reading as they go. In both the IRI passages Sarah was given, her fluency, familiarity with the topic and miscues suggested that the passage was well within the instructional range. Sarah had considerable struggles to answer

both the retelling portion and answer the explicit and implicit questions at the end of the passage

causing her to score in the frustration level. Giving Sarah strategies to help her monitor her

reading as she goes will help improve her overall reading comprehension.

Instructional Strategies

To help with Sarah's understanding of morphology, and grow her knowledge in base

words, prefixes, affixes, and roots, I would utilize a word study. Though all students could

benefit from this instruction, I would want to make sure that Sarah is receiving explicit and

targeted instruction. One activity I would implement would be word webs so that Sarah can

understand the way a word can break apart into morphemes (Morrow & Gambrell, 2018). I

would begin with familiar words and the common roots we see in our everyday language

(Ganske, *Best Practices in Vocabulary Instruction*, 2018, p. 210). Eventually, my hope is that

Sarah would be able to distinguish and identify the different prefixes, affixes, and root words.

To further support Sarah's understanding of morphemic structures, I would play the

'Affix Fit' game from Florida Center for Reading Research (*Phonological Awareness*, FCRR,

2005). In this game, students sort the base words and affixes and are asked to create the words by

using affixes with a base word. McKenna, Flanigan and Stahl (2020) suggest that "utilizing

activities that require students to break and manipulate word parts and rebuild is essential to

word study instruction" (p. 129).

Supporting comprehension through the implementation of strategies is important in

making sure a student is fully understanding the text they are reading. There are several

strategies to incorporate and facilitate growth in this area. One instructional strategy that is

suggested includes explicit strategy instruction. It is suggested to "begin instruction with explicit

teaching, model the application of the strategy and provide guided practice" (Stahl et al., 2020, p.

213). I especially think that the 'think aloud strategy' (Stahl et al., 2020) would be a good way for Sarah to see how a reader actively thinks through their reading. Showing a reader when to stop and monitor for comprehension is important.

Reading Rockets (Adler, 2001) outlines several other strategies to utilize when teaching students text comprehension including metacognition, graphic organizers, answering questions, generating questions and summarizing. I think that another great instructional strategy for Sarah would be to include graphic organizers. These can help students organize their thoughts as they are reading and helps to cue the reader on important story elements (if applicable) that they may miss (Stahl et al., 2020).

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