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The Effectiveness of Retrospective Miscue Analysis as a Reading Intervention for a Secondary Functional Academics Student

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The Student

“Jack” is a ninth-grade functional academics student diagnosed with brachycephalic syndrome, a birth defect that resulted in abnormal development of his skull, as well as deficiencies in his ability to see, hear, and articulate speech sounds. Jack’s oral intelligibility can be challenging for unfamiliar listeners, but his expressive vocabulary is actually very strong for a student his age. In fact, Jack would be the first to tell you—in eloquent language, no less—that the outward effects of his syndrome often cause people to underestimate his abilities.

In addition to special education services for English language arts and mathematics, Jack receives direct support from a speech and language therapist; Bridgewater State University

an occupational therapist; and me, a teacher of the visually impaired (TVI). As his TVI, I am responsible, through direct intervention and through collaboration with Jack’s teachers, for maximizing Jack’s access to the high school curriculum. Since I began working with Jack at the start of his sixth-grade year, Jack’s individualized education plan has mandated that he be given the opportunity to have a text read aloud to him in lieu of reading it himself due to an intellectual disability. (In addition to my work as a TVI, I’ve been completing graduate work over the past three years to become a licensed reading specialist. My interactions with students like Jack—whose reading difficulties can’t be entirely attributed to their visual impairments—strongly influenced my decision to enter into the reading program and broaden my expertise.)

A brief analysis of Jack’s most recent psycho-educational report delineates the vast discrepancy between his reading strengths and challenges. While his overall intellectual functioning score is low, the report warns against generalizing intelligence measures, considering the variability of his subtest scores. For example, Jack scored below the 10th percentile among same-aged peers on fluency and pseudoword-decoding tests but scored above the top 90th percentile on tests of receptive vocabulary and listening comprehension.

Jack’s functional academics teacher Ms. K and other teachers have reported that Jack can often be found staring off into space when given a text to read silently. Jack also freely admits that some topics are of no interest to him. Considering his difficulties with de-

coding and other reading subskills, it can be hard to determine when his reading performance has been disrupted by intellectual challenges or by a lack of motivation, or perhaps a combination of both.

Jack's stark contrasts in ability provided the impetus for this reading case study and indicated the possible effectiveness of retrospective miscue analysis (RMA) as an intervention for him. (The section that follows, entitled "The Process", describes the RMA intervention in detail.) Using the Reading Miscue Inventory: From Evaluation to Instruction (RMI) by Goodman, Watson, and Burke (2005) as a guide, I set out in this study to improve Jack's overall self-concept as a reader, if only to encourage him to read for pleasure as an adult, particularly about the one topic that has always captivated him: zoology. I hypothesized that, when motivated to read high-interest texts about animals and animal behavior aloud, his strengths in receptive vocabulary and listening comprehension would afford him the opportunity to analyze audio recordings of his readings and talk about his deficiencies more fluently than someone without those strengths.

Prior to the intervention, I interviewed Jack using The Burke Reading Interview Modified for Older Readers. (Goodman, Watson, & Burke, 2005, p. 275) First, I asked him what he does when he's reading and comes across something that gives him trouble. He said he typically rereads the text and determines whether he missed a word or if he "just used it wrong". Jack identified his classroom teacher, Ms. K, a special education teacher, as a good reader who he knows. I asked him

what makes her a good reader. "She doesn't mess up on too many sentences", he said, making reference to her oral readings in class. "And she has a lot of books around, not for class, but for herself." I asked him if he thinks she ever comes across something that might give her trouble when she's reading. He figured she probably does, but he wasn't able to list a specific strategy that she might use to solve the problem. When I asked him what a teacher would do to help a student who was having difficulty reading, he said, "They'd pull out their metaphorical bag of tricks, how to look at the sentence", but again he was unable to provide examples. For the remainder of the interview, Jack expressed confidence in his reading ability, admitting that he is, however, definitely a better listener than he is a reader. The final interview question from the inventory asks the interviewee to name the most difficult things he has ever had to read. For this question, Jack was a little more forthcoming about his challenges: "When I see a giant paragraph, I just become overwhelmed. It's like a giant wall that I have to climb. Sometimes I say to myself, 'Do I really want to do this?'"

In the passage below, the authors of the RMI give a more methodical explanation of the trepidation Jack might feel when he's asked to "climb" that "giant wall" of text:

Many readers, even proficient readers, tend not to correct if there are too many low-quality miscues clustered in the same phrase or clause. Such a situation results in the reader 'short-circuiting'; that is the reader produces a structure that he or she does not know how to unravel or does not choose to

take time to sort out. (Goodman, Watson, & Burke, 2005, p. 87)

The Intervention

RMA is a reading strategy lesson that encourages readers to reflect on their own reading process by listening to audio recordings of their readings. Research has indicated that students who participate in RMA become more proficient and confident readers (Goodman, Watson, & Burke, 2005). According to the authors of the Reading Miscue Inventory (RMI),

The gap between what students think they should do as readers and what they actually do often causes them to lack confidence in their ability, especially when they come to difficult or unpredictable texts. Discussions about how they read allows them, often for the first time, to realize that what they thought was wrong...is exactly what they should do to construct meaning. (Goodman, Watson, & Burke, 2005, p. 205)

When reading aloud, a reader's observed response doesn't always correspond to the expected response. This phenomenon is referred to as a "miscue" in the RMI to "avoid the negative connotation of errors...and to avoid the implication that good reading does not include miscues" (Goodman, 1969, p. 13). Through RMA, readers begin to differentiate between high quality miscues (syntactically and semantically acceptable miscues that show that the reader is predicting and making sense of what he or she is reading) and low-quality miscues (miscues that disrupt syntax and

meaning).

The Process

All instruction and assessment for this case study took place in a resource room at Jack's high school. Jack was comfortable with this setting, as he was already being seen there on a weekly basis for direct special education services. I met with Jack for the purpose of this study once a week for 30 to 60 minutes at a time over a four-week period.

All of the texts used for the RMA strategy lessons were taken from issues of *Science World* by Scholastic, Inc. (2016), a periodical classroom magazine containing science-based news stories that would be challenging for Jack but also of very high interest to him. Below is the RMA procedure I used with Jack:

1. I recorded Jack as he read aloud from a large print version of an unfamiliar text at his instructional level. (Based on an informal assessment of Jack's reading ability using word lists from the Qualitative Reading Inventory: 5 [Leslie & Caldwell, 2011], Jack's instructional reading level is grade six.)
2. I asked Jack to complete a reading strategy lesson from the RMI.
3. Without Jack present, I listened to the audio recording of his reading and notated his miscues using a standard coding system. I then transferred the information to a summary sheet for analysis (Figure 1). (Below is an abbreviated version of the summary sheet I used for each session. A comprehensive summary sheet would

Figure 1
RMI Summary Sheet

Text	Miscue	Graphic Change			Syntactic Change? / Meaning Change	Self-corrected?
		Beginning	Middle	End		
					/	
					/	

have many more rows.)

4. When Jack returned for another session, we listened to the audio recording from the previous session together, and I asked him to follow along using a line guide and a copy of the text. I stopped the recording periodically to point out miscues, gradually releasing the responsibility of identifying the miscues to Jack as we proceeded from session to session. (At first, I was sure to emphasize miscues that indicated good use of reading strategies to bolster Jack’s self-confidence.)

5. After each playback, I initiated a discussion with Jack about the reading process using some of the guiding questions below:

- Was the miscue corrected?
- Does the miscue sound like language?
- Did the miscue make sense based on what you’ve already read?
- Why do you think you made this miscue?

- Did the miscue interfere with your understanding of the text?

Below is a summary of the four RMA strategy lessons.

Session One

Borrowing from the RMI strategy lesson entitled “Estimate, Read, Respond, Question” (Goodman, Watson, & Burke, 2005, p. 217), I asked Jack to look over a question-and-answer dictation of an interview between a *Science World* reporter and an Australian biologist with specialized knowledge of a tiny, colorful spider native to Australia (Romain, 2016). I instructed Jack to scan the entire article, to estimate how far he could read with good comprehension, and to make a check mark at the spot where he would like to stop reading and review his comprehension. The article began with a three-paragraph section introducing the spider and the featured biologist. Jack marked the end of this introductory section as the place where he would like to stop. I then recorded him reading the section. Af-

terward, he was able to adequately summarize what he had read. I then chose to focus on text structure, since it appeared that Jack hadn't recognized that the remainder of the article used a question-and-answer format. I pointed out that the rest of the article looked different from the introduction. "The print appears to be in a different font", I said, "and it seems to alternate between highlighted and non-highlighted text". He still didn't recognize, or at least wasn't able to articulate to me, that the remainder of the article represented the transcript of a back-and-forth interview. I told Jack that it's important to look over the length and format of an article before diving into it. "That way", I said, "you'll have a better idea of how to go about reading it. It might even help you decide whether or not you want to read it at all."

Session Two

Without Jack present, I listened to the audio recording of him reading the introduction to the spider article and notated and analyzed his miscues. I determined that Jack made nine uncorrected miscues in all, three of which changed the meaning of the text (low-quality miscues). When Jack returned the next week, I played the audio recording from the previous session and asked him to follow along. I stopped the recording periodically to point out miscues, and we discussed the difference between high-quality and low-quality miscues. Below is an example of a miscue Jack made that didn't change the meaning of the text (high-quality miscue):

Expected response: "This job has made Otto an expert at studying very small creatures."

Observed response: "This job has made Otto an

expert at the study of very small creatures."

(Romain. 2016, p. 12)

Together, Jack and I concluded that only one of the three low-quality miscues extensively changed the meaning of the text:

Expected Response: "Peacock jumping spiders are only about 3 millimeters (or about an eighth of an inch) long"

Observed Response: "Peacock jumping spiders are only about 3 millimeters (or about eight-and-a-half inches) long" (Romain. 2016, p. 12)

Jack admitted that he didn't know the difference between an eighth of an inch and eight-and-a-half inches. (On his most recent psychoeducational evaluation, Jack scored in the first percentile among same-aged peers in mathematics and math fluency.) I demonstrated for Jack with my two index fingers the difference between the two values and pointed out, as light-heartedly as I could, that the only miscue he made that changed the meaning of the text wasn't even a reading mistake at all; it was a math mistake!

Because Jack struggled to identify text structure in our previous session, I borrowed from the RMI strategy lesson entitled "Schema Story" for our next reading (Goodman, Watson, & Burke, 2005, p. 207). Using scissors, I cut up a five-paragraph introductory passage into five sections, one for each paragraph, then scrambled the paragraphs and asked Jack to read them and arrange them in a sequence that made sense. The article was about animals that haven't evolved much over millions of years. I again recorded him reading. After he

finished, he was able to sequence the second, third, and fourth paragraphs correctly but needed help identifying the opening and closing paragraphs. Ironically, sorting the middle three paragraphs required a more nuanced understanding of language and meaning, whereas both the opening and closing paragraphs contained glaring indicators of where they should be found (an extremely large “H” in the word “how” at the start of the opening paragraph and, below the closing paragraph, the author’s name in large type). I reminded Jack of the importance of analyzing the overall structure of a text, and I again showed him the remainder of the article to put the passage into context, pointing out that what he had read was only the introductory section of a larger article.

Session Three

Without Jack present, I again listened to the audio recording of him reading. This time, I determined that he had made 13 uncorrected miscues in all, and that 6 of them had changed the meaning of the text. Before playing the audio recording, I reviewed with him the difference between high-quality and low-quality miscues. We discussed reading strategies that indicate the use of high-quality miscues, such as skipping words that don’t affect meaning or substituting hard-to-decode words with synonyms. When I played the recording for him this time, I again stopped the recording periodically to point out miscues but occasionally asked him to point out his own miscues, which he was able to do independently.

For our next reading, I borrowed from the RMI

strategy lesson entitled “Language Experience” (Goodman, Watson, & Burke, 2005, p. 217). I asked Jack to read another five-paragraph introductory passage that I had cut out from *Science World*. This time the article was about the molting process of Antarctic penguins (Free, 2016). After he finished reading the passage, I instructed him to paste the passage onto a larger piece of paper. Above the pasted passage, bold lines indicated the need for a headline and subheading. I showed Jack examples of headlines and subheadings from other articles in the publication. I told him I would scribe while he dictated to me what he thought should be the heading and subheading for the passage he had just read. Jack chose “Penguins Getting New Coats? You’ve never seen anything like this before. When penguins molt.” I again showed him the remainder of the article and pointed out that the article was really just an assortment of images and captions about penguins that was lacking a cohesive, linear format. I pointed out that an article like this might be less challenging and more likely to be read for fun than the previous two articles.

Session Four

When reading the penguin article, Jack produced nine uncorrected miscues, and only one changed the meaning of the text. During the audio recording, I stopped the recording at the end of each sentence, regardless of whether or not the sentence contained a miscue and asked Jack if he noticed one or not. He laughed at himself when we identified the one miscue that changed the meaning of the text:

Expected Response: “Their feathers interlock like shingles on a roof, keeping them warm and

dry, whether they're waddling on ice in Antarctica or diving off the coast of New Zealand."

Observed Response: "Their feathers interlock like shingles on a roof, keeping them warm and dry, and the weather that they're waddling on ice in Antarctica or diving off the coast of New Zealand." (Free, 2016, p. 12)

Not only did the miscue change the meaning of the text, it didn't conform to an acceptable grammatical structure, meaning that it was syntactically unacceptable. (The RMI states that a sentence can have "acceptable syntactic structure without having acceptable meaning", but a sentence without syntactic acceptability will always be semantically unacceptable [Goodman, Watson, & Burke, 2005, p. 79]). I asked Jack why he found this particular miscue so funny. He said, "Because it doesn't even make sense." I agreed. Jack explained in his own words that the word "whether" led him astray; he assumed the word was its homophone, "weather". This led to a discussion about the interrelationship between syntactic and semantic structures, but in more conversational terms: I said that if an observed response doesn't sound like the language we use when we're talking, it doesn't stand a chance of making sense. (I was careful not to mention the author's intentions. The RMI explicitly states on p. 79 that "no one knows exactly the author's meaning, unless the author is present to provide such information" [Goodman, Watson, & Burke, 2005].) I reminded Jack that the context we use to confirm the meaning of words can be found after the word as well in front of it, and that you don't always have to make a decision on the spot. There are no rules

against skipping or re-reading.

Reflection

I set out in this study to improve Jack's overall self-concept as a reader by giving him the opportunity to reflect on audio recordings of his own readings. A week after the four sessions were completed, I interviewed Jack using the same set of questions I used prior to the intervention. Unfortunately, I discovered that he hadn't committed any of the RMA terminology to memory, terms like "miscue", "high-quality", "low-quality", "text structure", "context", "language", and "meaning". While I can't say that the four sessions had any long-term effects, I do feel that the process itself was extremely informative in its own right. By the fourth session, Jack could identify his own miscues and decide whether or not a miscue had disrupted the meaning of the text, whereas he depended entirely on me for both skills at the start of the intervention. This indicated to me that the prospect of applying an intervention like RMA, one that equips students to confront their weakness by activating their strengths, could be an effective process with repeated use for someone like Jack, who carries with him a wide array of strengths and weaknesses.

Perhaps a more informative function of trialing the RMA process with Jack was an entirely unexpected one. By borrowing from RMI strategy lessons designed to encourage readers to "attend to the context of circumstance and situation" (Goodman, Watson, & Burke, 2005, p. 203), it became clear to me that it's very challenging for Jack to look at the entirety of a

text and appreciate its purpose and structure. While the read-aloud accommodation in his education plan is designed to maximize his access to information, the resulting lack of visual engagement with text may have had the unintended effect over the years of limiting his ability to analyze text structure. This effect was most apparent in Session Two, when Jack was able to accurately sort three paragraphs based on semantic information but then jumbled the first and last paragraphs, both of which should have been placed correctly just by looking at their visual features.

Obviously, to say that Jack should now be required to read texts for himself just so he can better analyze text structure would be over-reactive and counter-productive. The read-aloud accommodation has served him well over the years, ensuring that he, someone with compromised decoding skills and strong listening skills, has the utmost access to written subject matter in class. Perhaps a happy medium would be to ensure that a text's structure is visually previewed with him prior to the read-aloud, thus encouraging him to fathom the entirety and purpose of the text prior to digesting its individual parts. This is an idea I'll be sure to propose to his special education team the next time his education plan comes under review.

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