
MTSS CONFERENCE 2024

Writing Interventions within an MTSS Framework: Pairing Strategy Instruction with Technology Tools

Dr. Michael Dunn
Janet Bowers, PhD Student - writing example(s),
assessment, Janet's experiences/expertise

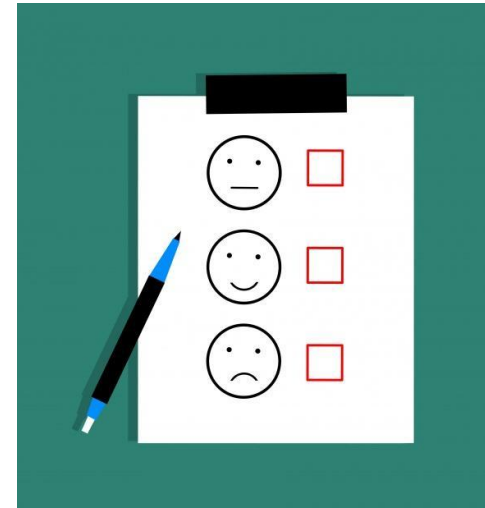
August 2, 2024, 10:00-11:15am

Abstract

- ❑ Many students struggle with writing. Writing researchers have offered a number of ideas for intervention programming. This conference session will review research/evidence-based practices and strategies for writing (e.g., self-regulated strategy development) and how technology tools (e.g., apps, Artificial Intelligence such as ChatGPT) can be ethically part of writing activities for narrative, informational, expository, persuasive, and argumentative types of texts from second grade (when writing instruction typically begins in earnest) to grade 12.
- ❑ What data or evidence of impact will you share that supports your best practice?
- ❑ The session will include a summary of the first author's writing intervention research with students in schools as well as findings from other researchers in the professional literature.

Mentimeter

1. What aspects of writing/writing instruction do you find challenging?
 - a. Please begin your answer with “writing” (meaning your personal writing experience) or writing instruction.
2. What aspects of writing do feel students find challenging?
3. What strategies or tools have you found to be helpful?



Writing: Forest vs. the Trees

- ❑ Writing is complex and multi-faceted process.
- ❑ To become a better writer, one needs to be reading high-quality examples regularly/daily
- ❑ A positive mindset and work ethic is needed to improve over time
 - ❑ the challenges of struggling writers often having learned helplessness (i.e., I have not had success with this in the past, why should I try again...?)



Writing: A Challenge for Many students with Disabilities

Defining Learning Disabilities

1. Oral expression
 2. Listening comprehension
 3. Math calculation
 4. Math problem solving
 5. Reading decoding
 6. Reading comprehension
 7. **Reading fluency**
 8. Written language
- Skills associated with Reading fluency:
- phonemic awareness
 - speech perception (background noise)
 - vocabulary skills
 - phonetic working memory Recalling phrases from memory
 - syntax and semantics

Students with other Cognitive Disabilities (examples):

- Autism/PDD
- Intellectual Disability
- OHI-ADHD

Students with Physical Disabilities (examples):

- Deafness/Hearing Loss
- Visual Impairments

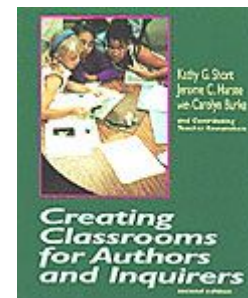
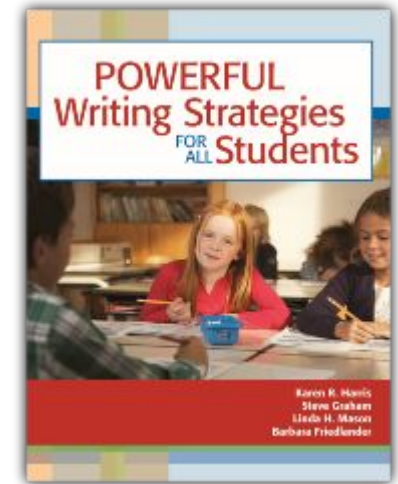
As many as 75% of 4th and 12th-grade students across the US cannot write at a proficient level (NAEP-Writing, 2017)

Multi-Tiered Systems of Support: Processes for Writing



GENERAL EDUCATION: EXAMPLE BEST PRACTICES FOR WRITING

- Reading and writing complement each other
- Read and write daily
- Free writing – students write on a topic of choice
- Review high and low-quality examples
- Review rubrics per each genre of writing
- Use of speech to text for writing...an option



What does the Research suggest?

Writing intervention	No. of studies	Effect size
Strategy instruction	20	1.02
SRSD	14	1.17
Non-SRSD	6	0.59
Adding self-regulation to strategy instruction	6	0.50
Text structure instruction	9	0.59
Creativity/imagery instruction	4	0.70
Teaching transcription skills	8	0.55
Grammar instruction	4	−0.41
Prewriting activities	8	0.54
Peer assistance	4	0.89
Product goals	7	0.76
Assessing writing	14	0.42
Adult feedback	5	0.80
Peer/self-feedback	10	0.37
Word processing	10	0.47
Extra writing time	5	0.30
Comprehensive writing programs	25	0.42
Process approach	16	0.40
Other comprehensive programs	9	0.55

**Effect size
scale:**

.8 = large

.4 =
moderate

.2 = small

Graham, S., McKeown, D., Kiuahara, S., & Harris, K. R. (2012). A meta-analysis of writing instruction for students in the elementary grades. *Journal of Educational Psychology*, 104(4), 879–896. <https://doi.org/10.1037/a0029185>

Small-Group Discussion and Mentimeter Summary

1. What do the results from the previous slide suggest to you?
2. Does this affirm or contest what you/your school does with writing practices?
3. What lingering questions you have about these research findings?

Mentimeter

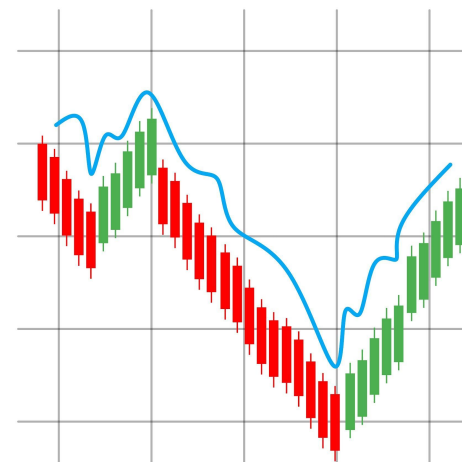


Assessment and Intervention Cycle

	Universal Screening 1	Intervention Programming	Universal Screening 2	Intervention Programming	Universal Screening 3	Intervention Programming
September						
Fall months						
January						
Winter months						
March						
Spring months						

Curriculum Based Measurement

- “CBM focuses on using existing curriculum materials and goals as a basis for selecting and creating the tasks on which student performance is measured” (Deno, 1993, p. 3).
- Assessing students’ skills over time to determine if a dual discrepancy exists (i.e., low performance and little or no growth over time)?
- The data chart should note a measurement of behavior and academics skills.



CBM for Writing
Examples:

- Number of Words Written
- Correct Writing Sequences
-

Deno, Stanley L., "1. Curriculum-Based Measurement" (1993).
Curriculum-Based Measurement. 3.

<https://digitalcommons.unl.edu/buroscurriculum/3>

TWS – total writing sequences

Since the first word is correct, it is marked as a correct writing sequence.

^It^ was^ dark^ .^ Nobody^

Because the period is considered essential punctuation, it is joined with the words before and after it to make 2 correct writing sequences.

could seen the^ trees^ of

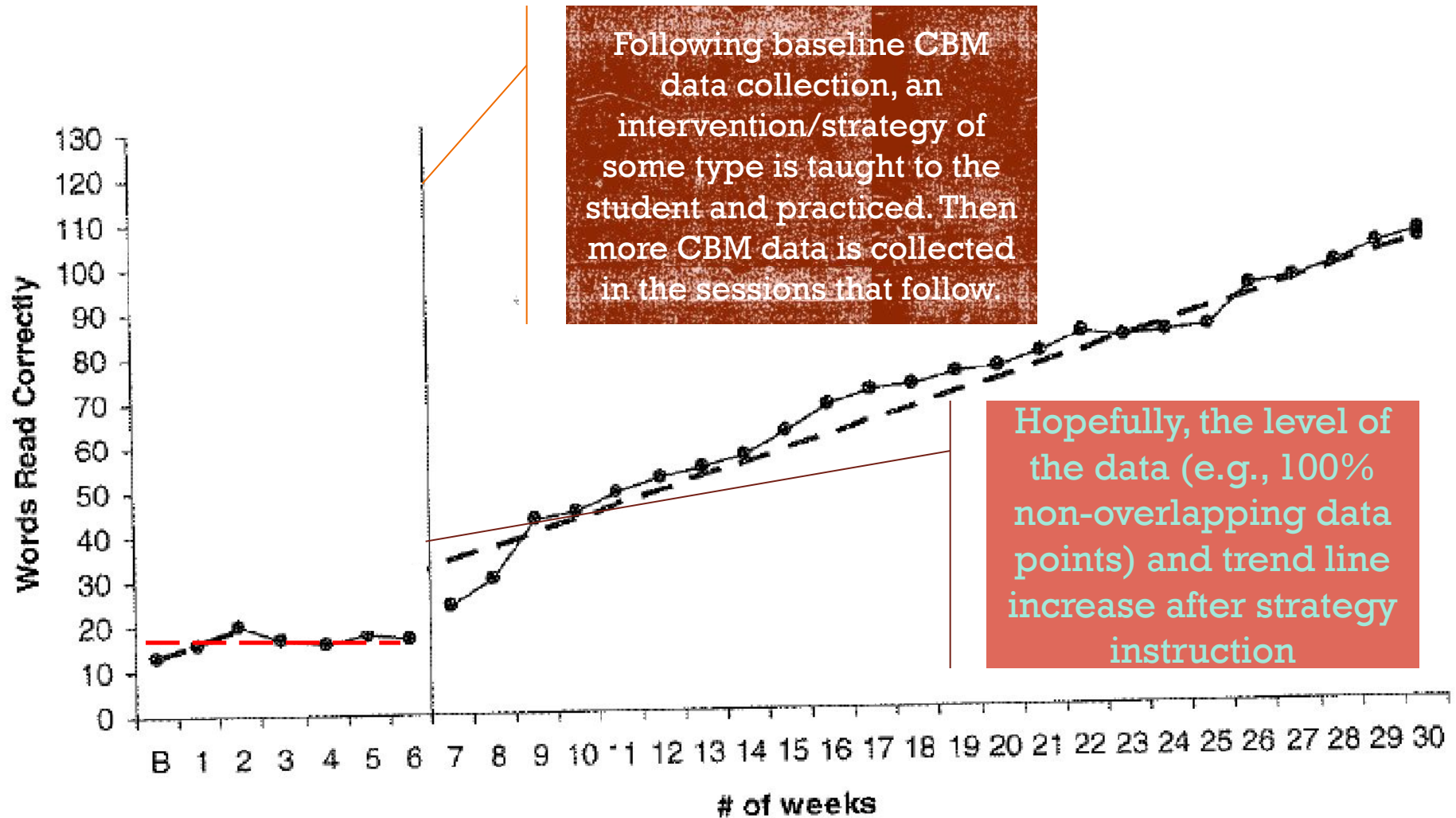
^the forrest.

Grammatical or syntactical errors are not counted .

Misspelled words are not counted.

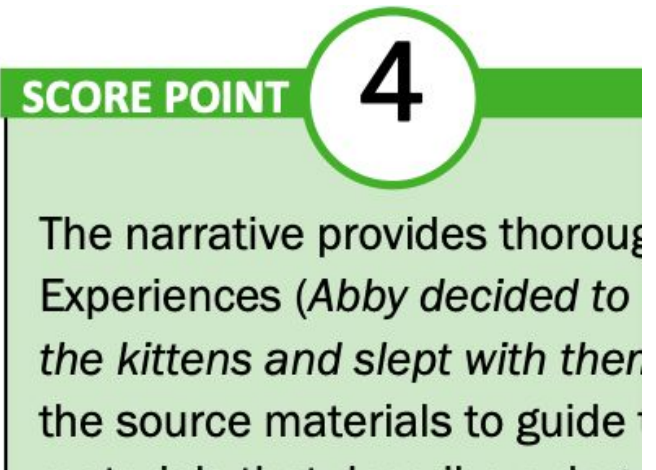
A TYPICAL CBM GRAPH

(Deno, 2003)



Example Sources for Scoring Students' Writing

- EasyCBM
- AIMSweb
- Smarter Balanced Scoring Guide ([SmarterBalanced.org](https://smarterbalanced.org))
- AI tools such as ChatGPT



A graphic for a score point. It features a green horizontal bar at the top with the text "SCORE POINT" in white. To the right of this bar is a large white circle containing the number "4". Below the bar and circle is a light green rectangular box containing text.

SCORE POINT **4**

The narrative provides thorough
Experiences (*Abby decided to*
the kittens and slept with them
the source materials to guide

4TH GRADE-, GOAL-LEVEL TEXT

Jack's Trip to the Fair

For his tenth birthday, Jack wanted to invite two of his friends, Ben and Larry, to go to the fair that coming Saturday. With his mother's help, Jack wrote the words and made the illustrations on the cards. He took them to school the next day to give to his friends. Ben and Larry told Jack the next day that their parents were ok with them going to the fair.

On Saturday morning, Jack ran outside to check the weather and was relieved to see a bright blue sky. His mother said, "Well, it looks like a perfect day for a day at the fair. After breakfast, we can drive to your friends' homes to pick them up."

As Jack and his mother drove to the Ben and Larry's street, Jack noticed some dark clouds forming in the sky. "Oh, I hope it isn't going to rain," he said, remembering that the fair was no fun last year when it rained.

The rain and wind began as Jack and his mom pulled into Ben's driveway, he and Larry got in the car. By the time they arrived at the fair, it was sprinkling but the clouds were passing and sunshine was in sight.

"Get your tickets to enter the fair here!" a man yelled as he pointed to the entrance gate. Jack's mother gave him a hug and said, "I am so pleased that the rain has ended and the sunshine is back. I know how much you wanted to come to the fair today with Larry and Ben."

After passing through the entrance gate, Jack saw four more of his friends gathered at the ice cream tent. When they spotted Jack, they cheered and began to sing "Happy Birthday." Jack, Ben, and Larry ran to greet their classmates. Jack was surprised to find a table with an ice cream cake and some presents. After eating some hot dogs and some cake, the boys began going on some of the rides and visiting the animal barns. Jack had a great day with all of his friends! "I love going to the fair," Jack told them. "We do too!" They all agreed that they wanted to come back another time someday.

- Clear introduction, main event, and conclusion.
- Use of paragraphs.
- Use of voice.
- Almost completely correct use of grammar and syntax.

Post test, Paragraphing

I would like to
become a ~~air~~ ^{air} plane pilot.
I would go over the
~~Pacific~~ ^{Ocean} and
back. I would go from
Maine to Mexico ~~and~~ from
Washington ~~D.C.~~ ^{N.C.} to
Washington ~~state~~ ^{state} from
Alaska to N.M. ~~A from~~
~~and~~ ~~to~~ ~~A from~~ ~~N.Dak.~~ ~~to~~
S. Dak. ~~my plane~~ I would have
one hundred seats.
I would have ~~four~~ ^{four} engines.
and then I would
create
?

Be careful to write complete sentences.

LEARNING DISABILITIES IN WRITING

Writing involves three basic processes	Challenges that each phase of the writing process poses
Planning what to say and how to say it	Difficulty choosing a topic
Translating plans into written text	Difficulties with spelling and visual/motor integration Difficulties with working memory to simultaneously manage spelling, idea generation, story progression, and sentence creation
Reviewing to improve existing text	Have a lack of experience with published texts (i.e., these students are often not avid readers to see what good writing looks like) Reciprocal benefit of reading and writing skills practice

(Graham, Collins & Rigby-Wills, 2017)

NWCS – number of words spelled correctly

I woud drink water from the ocean.....06
and I woud eat the fruit off of.....07
the trees. Then I woud bilit a.....05
house out of trees, and I woud.....06
gather firewood to stay warm. I.....06
woud try and fix my boat in my.....07
spare time.02
Correctly Spelled Words = 39

Using Word without ChatGPT assistance:

It was dark. Nobody could seen the trees of the forrest.

Can you correct this sentence? It was dark. Nobody could seen the trees of the forrest.



Certainly! Here's a corrected version of the sentence:

"It was dark. Nobody could see the trees of the forest."

Changes made:

- Replaced "seen" with "see" to correct the tense.
- Corrected "forrest" to "forest" (spelling error).



WRITING INTERVENTION COMPONENTS

- Planning
- Revising
- Evaluating
- Monitoring
- Knowledge of genre characteristics
- Automaticity in spelling and text generation
- Set goals
- Partnering
- Feedback from others

MNEMONIC STRATEGY INSTRUCTION (MASTROPIERI & SCRUGGS, 2014)

- **Mnemonic** is any learning technique that aids information retention in the human memory.
- **Mnemonics** aim to translate information into a form that the brain can retain better than its original form (Wikipedia).

Story Writing

Start thinking about WWW, W=2, H=2 questions

Think about your answers and illustrate them.

Organize and say your story out loud.

Revise your text's ideas and type it on the iPad.

You can make edits and read it to others.

Decoding

Discover context

Isolate pre/suffix

Separate pre/suffix

Say the stem

Examine the stem

Check with someone

Try the dictionary

MNEMONIC STRATEGIES IN MICHAEL'S WRITING RESEARCH



- **A**sk (who, when, where?...)
- **R**eflect with art
- **T**ext – type/edit prose for a final copy

- **S**tart thinking about WWW, W=2, H=-2 questions
- **T**hink about your answers and illustrate them.
- **O**rganize and say your story out loud.
- **R**evise your text's ideas and type it on the iPad.
- **Y**ou can make edits and read it to others.

Analyze published argumentative-essay texts for genre and structure about your chosen topic's points of view.

Revue keywords and then create sentence phrases with websites and apps.

Generate a plan to argue your idea(s).

Use your thoughts to say an oral draft.

Express your ideas by generating a first draft and then editing for a finessed typed text.

STOP + DARE – ARGUMENTATIVE ESSAY WRITING

1. **S**uspend judgment – list the points for both sides of the argument and consider all possible sides.
2. **T**ake a side – read through the list of points for both sides and determine which side you believe is more persuasive.
3. **O**rganize your ideas – select the strongest ideas. It might be helpful to number them in order of importance.
4. **P**lan more as you write – continue planning as you write. Use the DARE strategy as you proceed with writing.

1. **D**evelop a topic sentence

2. **A**dd supporting ideas

3. **R**eject the other side

4. **E**nd with conclusion

Writing Intervention Lesson Plan	
Time (mins)	<u>Writing Intervention Phase and Activity Descriptions</u>
	<u>Baseline (about 5 sessions)</u>
25	Students plan and write about a CBM cartoon picture (no dialogue balloons) or on another topic of their choosing (10 minutes to plan, 15 minutes to write).
	<u>Intervention phase (45 minutes per session; after sessions of SRSD Training)</u>
3	Meet and greet
7	Student reads or listens to a page or two from a book; discusses the reading with the intervention teacher
5	Spelling practice: students write 3-5 words from the reading; intervention specialist reviews words/provide corrective feedback
5	<p>Writing sentences: with a picture book, the intervention specialist has students verbalize some simple sentences. The intervention specialist writes them on a white board. Students copy. The intervention specialist reviews students' writing and provides corrective feedback.</p> <p>Combining sentences: The intervention specialist writes two sets of simple sentences on the white board. She asks students to rephrase each pair into one combined sentence with and, but, or. She writes them on the white board. The students then write them.</p>
25	<p>Students practice applying the STORY mnemonic strategy.</p> <p>On selected days, students begin with doing a CBM probe: students do a cartoon (or personally-chosen topic) story probe assessment (10 minutes to plan, 15 minutes to write).</p>

Self-Regulated Strategy Development (SRSD) - Steps for Teaching the Ask, Reflect, Text Strategy

Step 1: Develop and Activate Background Knowledge: In the first session, dialogue with the student to determine the what components about good stories are already known.

Stage 2: Discuss the Strategy: At session two, explain the Ask, Reflect, Text strategy to the student to illustrate the benefits in learning and using it. The student needs to commit to learning and using Ask, Reflect, Text.

Stage 3: Model the Strategy: In session three, the teacher demonstrates how to use the Ask, Reflect, Text strategy. The teacher needs to verbalize all thoughts so that the student has a concrete example of how the strategy works in terms of the thoughts process and the text on the page.

Stage 4: Memorize the Strategy: Also at session three, the student needs to memorize the strategy which will facilitate its implementation.

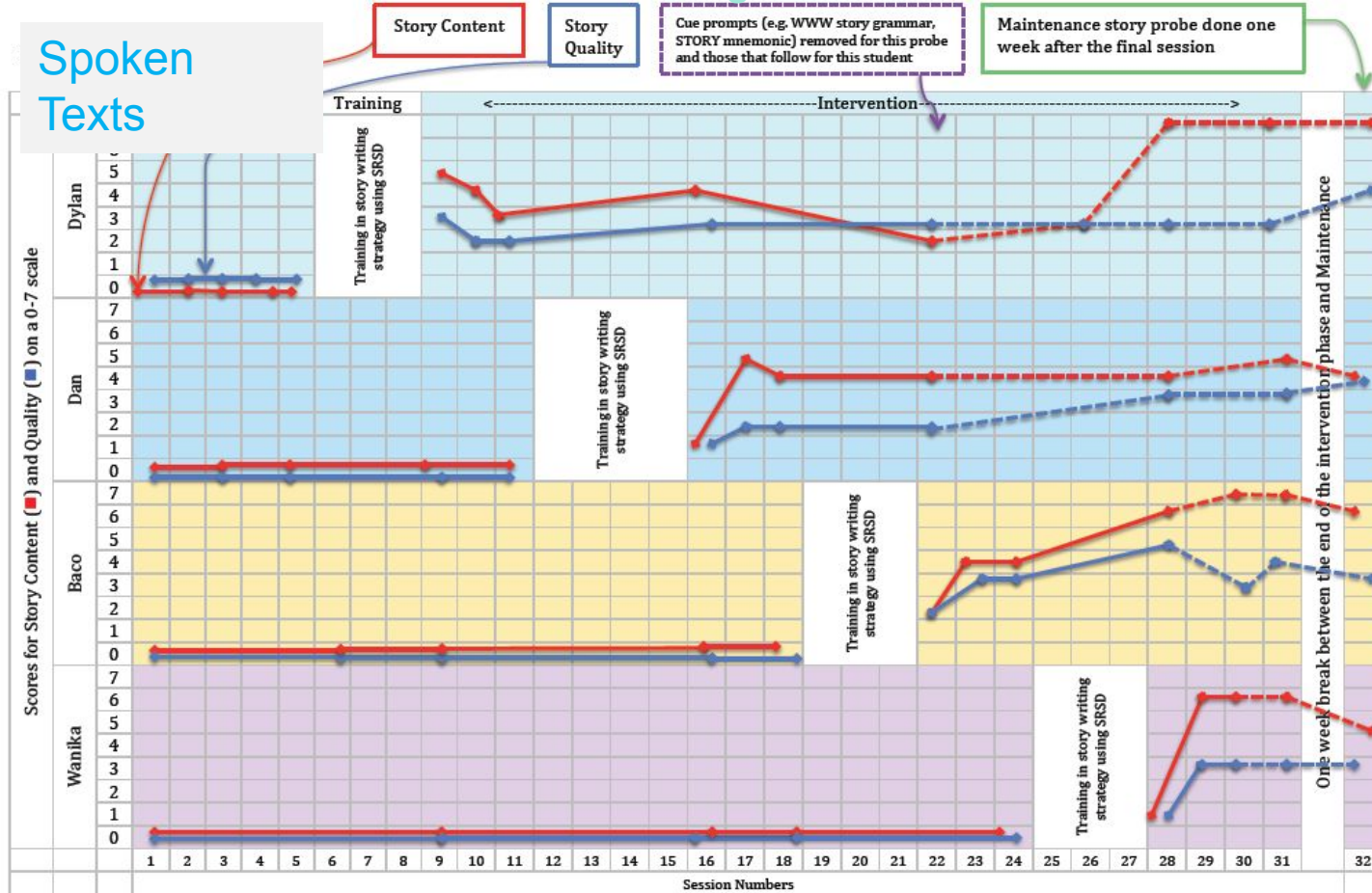
Stage 5: Support the Strategy: In sessions four and five, the teacher helps the student with the initial trials in using Ask, Reflect, Text. This assistance is faded over time to promote independence.

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Strategy Example (by Kate)

Ask		Reflect	Text	
Answers to WWW, W=2, H=2 questions		Students sketch/paint ideas for their story:	Students write the text of the story.	
WWW	<ol style="list-style-type: none"> Who is the main character; who else is in the story? When does the story take place? Where does the story take place? 		<p>One day there was a mother raccoon who worked at a hospital. She goes to work at 7:30 in the morning and leaves at 10:00 or 11:00 oclock at night. One rainy day she had a patient's frog come to the hospital with broken arm. It was raining so hard that the frog slipped on the ladder. They put him in a room. Then the electricity went out. Then the frog started to say help I need a nurse. Then Mrs. Raccoon the nurse came in and said what can I help you with. The man said that I couldn't fill my figure. Mrs. Raccoon had to put a cased on him in the dark. The electricity finally came on. The frog was so happy to have his arm fixed until he saw the bill. Finally, Mrs. Raccoon got to go home early and make dinner for her family.</p>	
W=2	<ol style="list-style-type: none"> What does the main character do; what do the other characters want to do? What happens when the main character tries to do it? 			
H=2	<ol style="list-style-type: none"> How does the story end? How does the main character feel; how do the others feel? 			

Research Study (2016) with Grades 4-5 students who struggled with Writing



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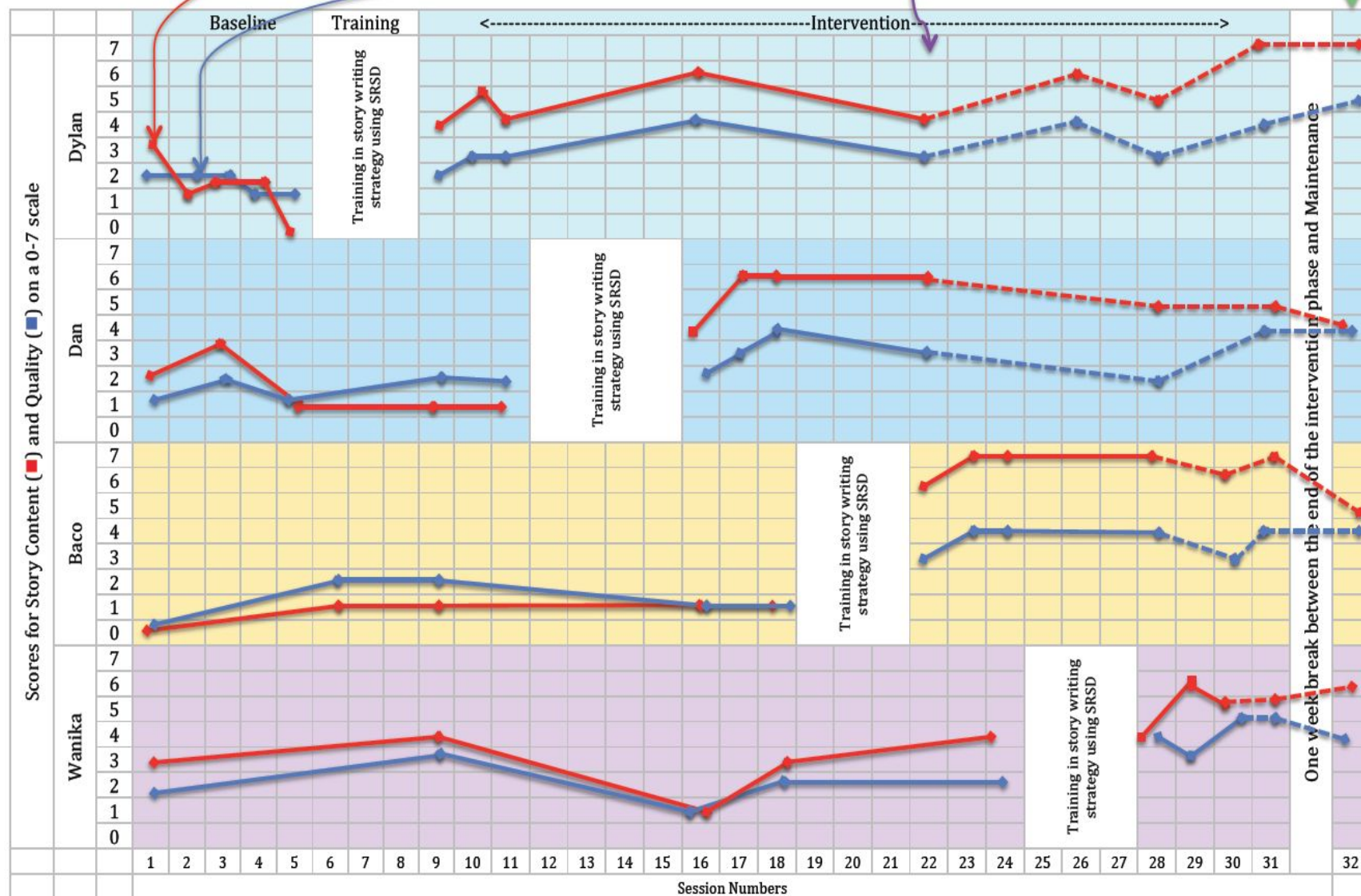
Written Texts

Story Content

Story Quality

Cue prompts (e.g. WWW story grammar, STORY mnemonic) removed for this probe and those that follow for this student

Maintenance story probe done one week after the final session



Summary thoughts about this data and its design

1. The intent was to offer **students who struggle** with writing a new strategy and assess how they would do with it?
2. Students had choice in the topics of books for beginning part of each lesson
3. Students had choice in what they wanted to write about after learning the STORY mnemonic
4. This writing intervention involved more than “behaviorist” forming associations between stimuli and responses; there were ideas, concurrent nature of writing, ...
5. How to help students “maintain” their learning long-term?



TECHNOLOGY TOOLS FOR WRITING

- Websites
- Apps
- Webtools for writing assessment
 - Artificial Intelligence