New York State Education Department
Office of Special Education
Educational Partnership

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Identifying and Intensifying Intervention: What to Do and How to Do It

Produced by the Technical Assistance Partnership for Academics

New York State Education Department
Office of Special Education
Educational Partnership

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Today's Facilitators

Name

Introduction and Objectives

Introductions

NAME   ROLE   DISTRICT   SCHOOL   POPULATION SERVED

Learning Objectives

Participants will be able to identify and differentiate between **skill-based, fluency-based**, and **performance-based** interventions

Participants will learn when each of these approaches is appropriate, given the nature of the observed problem.

Participants will learn how to titrate the intensity of intervention to the learner as a response to instruction

Schedule of Events

Review how assessment can inform instruction so interventionists can problem-solve.

Review a case example to guide discussion

Define and differentiate between three families of academic interventions

Practice categorizing academic interventions

Review methods to intensify these types of interventions

Defining Intervention

Intervention entails the purposeful and selective intensification of elements of instruction for an individual or group of students beyond that which is typically delivered to all.

So, intervention = instruction.

To understand what makes good intervention, we need to understand what makes for good instruction. The principles are the same.

Skill x Treatment Interactions I

When formulating an intervention, you use assessment data to determine:

- The appropriate intervention given the nature of the instructional deficit.

The appropriate amount of intervention given the severity of the instructional deficit.

When a pattern of scores is used to predict the best treatment, this is called a skill x treatment interaction.

- This is the treatment most likely to be successful in remediating the problem, given the data observed.

Skill x Treatment Interactions II

- When we say data, we mean:

  Data that is quantifiable

  It's meaning is easily understood

  That is reliable and a valid measure of the problem

  That can be used formatively (repeatedly over time)

- For example, Reading CBM (R-CBM) has been shown to be a reliable and valid indicator of reading fluency. It:

  Results in a numerical score (words correct per minute), representing a student's oral reading fluency rate, which can be easily graphed

  Can be used repeatedly over time.

  Has evidenced reliability and validity as a measure of fluency

Sample Data Table

Torie's scores were as follows:

Titles	R-CBM	NWF	WRF	MAZE
Score	30 Words Count	50 Correct Letter Sequences 8 Words Read Correct	20 Words Read Fluently	3 Correct
Accuracy	91%	92%	88%	100%
Benchmark	Intensive Support Needed	Strategic Support Needed	Strategic Support Needed	Intensive Support Needed

Sample Data Skill v. Performance

We did a skill v. performance deficit analysis to figure out whether Torie COULD exhibit the target behavior (reading fluency) under different conditions. We told her she could get a prize if she beat her old score on a new R-CBM passage.

R-CBM w/o reinforcement (from sample data)	R-CBM w/ reinforcement
30 words correct	35 words correct

So the difference is 5 words correct, or a 14% difference

Sample Data Problem Statements

From Torie's data, we can develop several problem statements.

A problem statement requires the following information:
- The condition under which the behavior occurs

- Observed performance

- Goal performance

Sample Data - Torie

- When presented with a 2nd grade R-CBM probe, Torie reads 30 wcpm in one minute with an 8% error rate. An average peer reads at least 51 wcpm in one minute with less than 10% error.

- When presented with a 2nd grade NWF probe, Torie reads 50 cls in one minute with an 8% error rate. An average peer reads at least 55 cls in one minute with less than 10% error.

- When presented with a 2nd grade WRF probe, Torie reads 20 wr in one minute with a 12% error rate. An average peer reads at least 30 wr in one minute with less than 10% error.

- When presented with a 2nd grade MAZE probe, Torie achieved a score of 3 in one minute. An average peer achieves a score 5 correct.

Sample Data Torie Continued

Thinking aloud about Torie's data

Torie's accuracy across skills is marginally adequate. It seems like she can decode and correctly identify words.

Reading fluency is a problem.

The fluency problem is likely carrying over to comprehension. Slow readers often struggle to comprehend text.

This does not seem to be a performance issue (i.e., she can, but she won't). It seems she does not yet have the right skills to read fluently.

Sample Data Goal Setting

So let's set a goal for reading fluency

Torie is reading 30 wcpm. With good instruction, she probably can gain +2wcpm/week.

So in six weeks, a realistic goal for Torie would be reading about 42 wcpm. That's not a final goal – it doesn't catch her up to her peers yet – but it's a reasonable short-term goal.
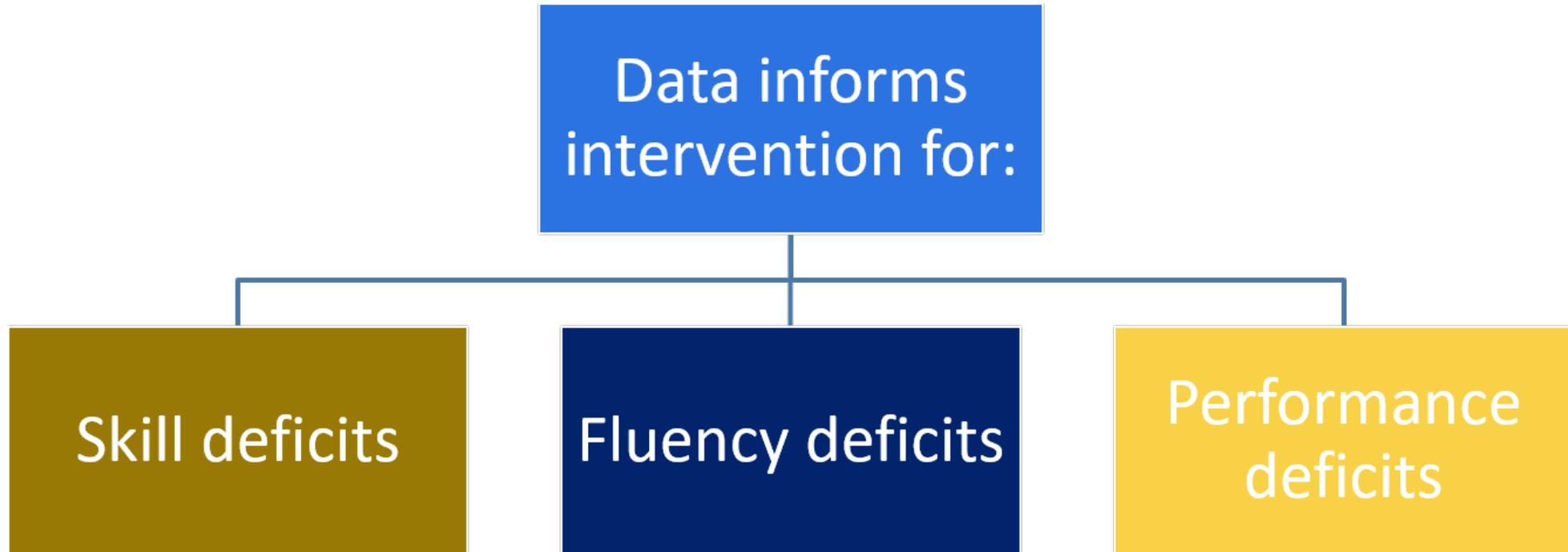
- Deno et al., 2001

Sample Data Questions

Given Torie's scores, how do we program intervention to meet her needs?

What should that intervention look like?

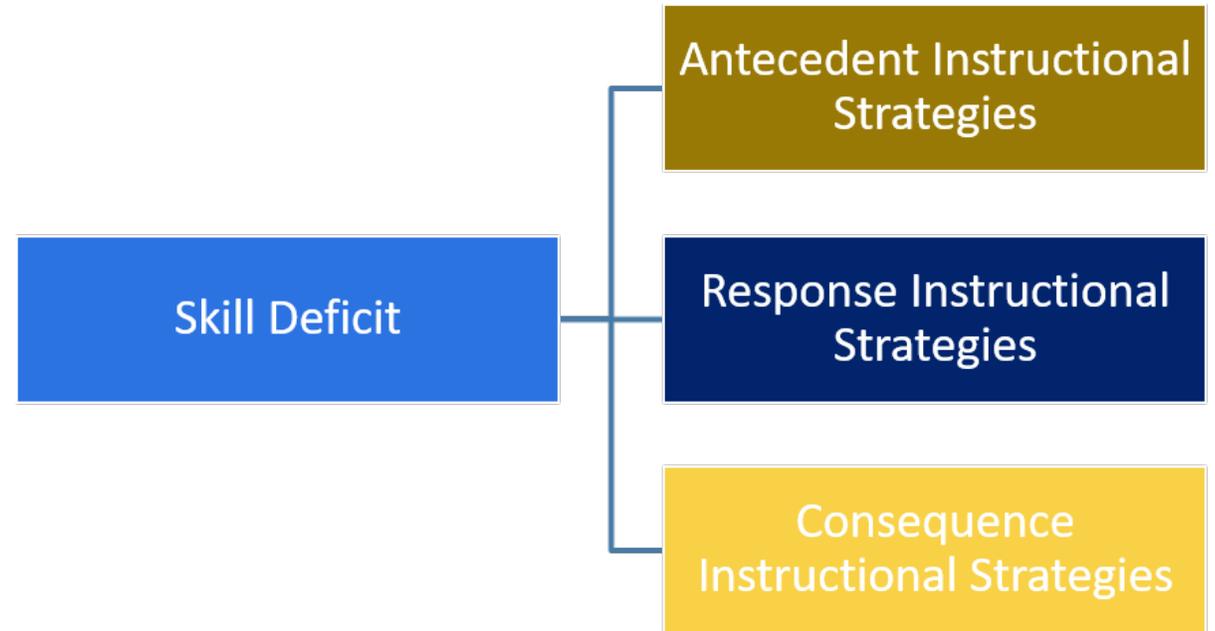# Choosing Amongst Interventions I

We can use data to choose between three types of interventions:

Data informs intervention for:

Skill deficits

Fluency deficits

Performance deficits

Choosing Amongst Interventions II

A skill deficit is defined as an observed lack of accuracy, such as when a student makes many mistakes when orally reading.

We see it when the behavior is done with high inaccuracy or at a very low fluency level

Skill Deficit

Antecedent Instructional Strategies

Response Instructional Strategies

Consequence Instructional Strategies

Choosing Amongst Interventions III

Interventions for Skill Deficits

Antecedent Supports	Response Supports	Consequence Supports
Specific, explicit cues to provide a correct response.	Additional opportunities to respond. Varying the way responses occur.	Immediate feedback for each answer.

Examples for Each Support

Antecedent Support Examples	Response Support Examples	Consequence Support Examples
"This word is "why". What is this word?" Student is directed to look at a model of a spelling word prior to copying the problem/word	Student repeats the task multiple times. Student writes and orally identifies a letter.	Student is provided immediate feedback on the accuracy of each word identified correctly.

Example Interventions for Skill Deficits

Incremental Rehearsal

Flashcard Card Drill and Practice

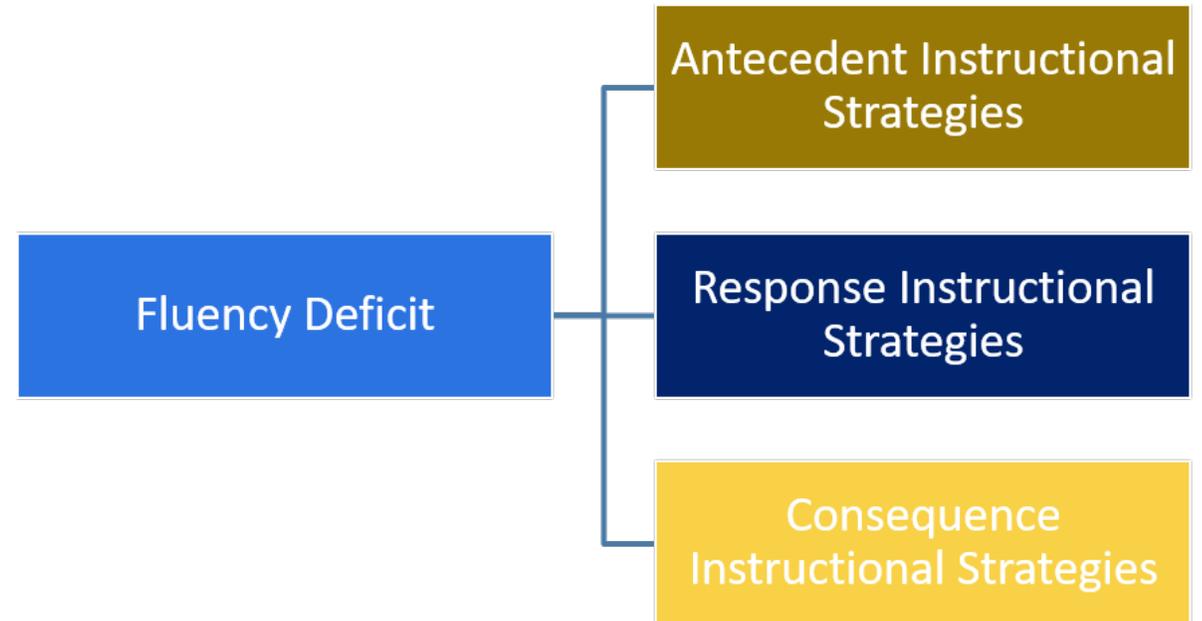**Cover-Copy-Compare**

Word Boxes

Choosing Amongst Interventions IV

A fluency deficit is defined as a lack of speed in using the behavior.

We see it when the behavior (i.e., reading) we observe is done accurately, but slowly.

Lack of attention to fluency is a chronic problem in our educational system (NRP, 2000)

Fluency is needed before students can apply skills in new areas.

Fluency Deficit
- Antecedent Instructional Strategies
- Response Instructional Strategies
- Consequence Instructional Strategies

Choosing Amongst Interventions - V

Interventions for Fluency Deficits

Antecedent Supports	Response Supports	Consequence Supports
Setting a specific time to respond.	Providing additional opportunities to respond (Drill).	Feedback after session. Self Graphing

Examples for Each Support

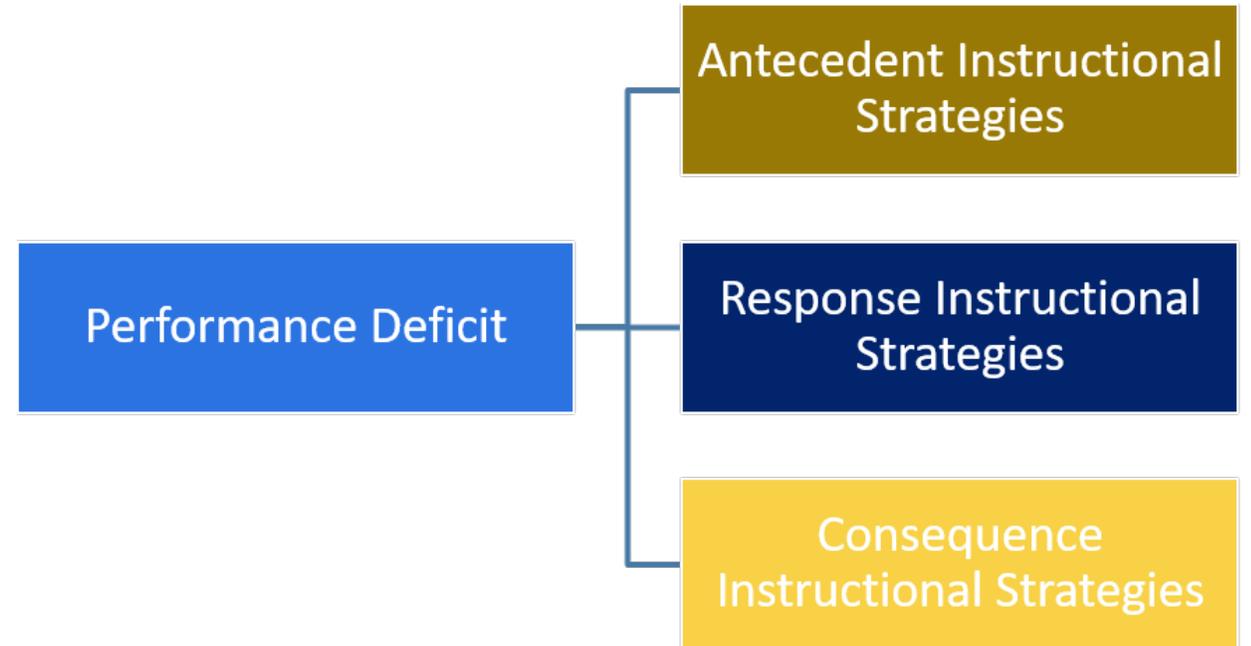| Antecedent Support Examples	Response Support Examples	Consequence Support Examples
Telling a student he has one minute to show his best reading (i.e., encourage speed).	Repeat a brief session several times over in a session.	Providing feedback on all words incorrect AFTER the session ended. Have the student chart their own progress to build understanding and excitement.

Example Interventions for Fluency Deficits

Repeated Readings

Explicit Timing

Wide Reading

Choosing Amongst Interventions VI

A performance deficit is defined as an observed lack of accuracy and/or fluency, despite the student having the skill.

We see it when the behavior is done with low accuracy or fluency, but only in certain environments.

Sometimes students can show both a skill/fluency deficit AND a performance deficit.

Performance Deficit

Antecedent Instructional Strategies

Response Instructional Strategies

Consequence Instructional Strategies

Choosing Amongst Interventions - VII

Interventions for Performance Deficits

Antecedent Supports	Response Supports	Consequence Supports
Setting a goal. Allowing the student choice of intervention.	Allowing the student choice of response.	Self-graphing. Feedback and reinforcement for target behavior

Examples for Each Support

Antecedent Support Examples	Response Support Examples	Consequence Support Examples
Tell the student they will get a prize if they beat their old score.	Telling the student they can orally present the answer or write it down.	Allowing the student to graph their project, providing verbal and tangible reinforcement for performance.

Example Interventions for Performance Deficits

Behavior plan for work productivity.

Threading reinforcement for performance into intervention.

Ample verbal reinforcement throughout the intervention.

Choosing Amongst Interventions - Activity

With a partner, review the provided list of interventions:

Categorize each intervention for target deficits:

- Skill
- Fluency
- Performance

Identify each instructional strategy used in the intervention:

- Antecedent
- Response
- Consequence

Break

Back to Torie I

- **So, what would work for Torie?**

- **Let's look at the data again:**

Titles	R-CBM	NWF	WRF	MAZE
Score	30 Words Count	50 Correct Letter Sequences 8 Words Read Correct	20 Words Read Fluently	3 Correct
Accuracy	91%	92%	88%	100%

R-CBM w/o reinforcement (from sample data)	R-CBM w/ reinforcement
30 words correct	35 words correct

Back to Torie II

So, Torie is:

Borderline accurate in her observed reading. She can sound out letters quickly but struggles a bit with blending them fluently.

Her scores are similar (< 20% difference) whether reinforcement is offered or not.

She lacks reading fluency.

Back to Torie Activity

So Torie is borderline accurate, lacks fluency and seems motivated i basic 2nd grade readin

What intervention fror your toolkit might wor for Torie?

Take 5 minutes and discuss with a partner

Back to Torie III

A good intervention that includes heavy repeated practice, end-of-trial feedback, and some accuracy/skill building is Repeated Readings with Listening Passage Preview.

This involves having the student read the same passage several times over, with feedback. Prior to the first reading, the teacher models the read-aloud.

Returning to Skill x Treatment

So, in this case, we used Torie as an example of using data to inform treatment.

We used a pattern of high and low scores observed from measurement of direct academic skills (NWF, ORF, WRF, MAZE) to plan a specific course of intervention.

Research shows this works for direct, research-based measures, like CBM, but not for indirect measures. For example, we couldn't use a measure of working memory to predict which math intervention might work best.

Back to Torie IV

We implement the intervention x15min/day, 4 days a week.

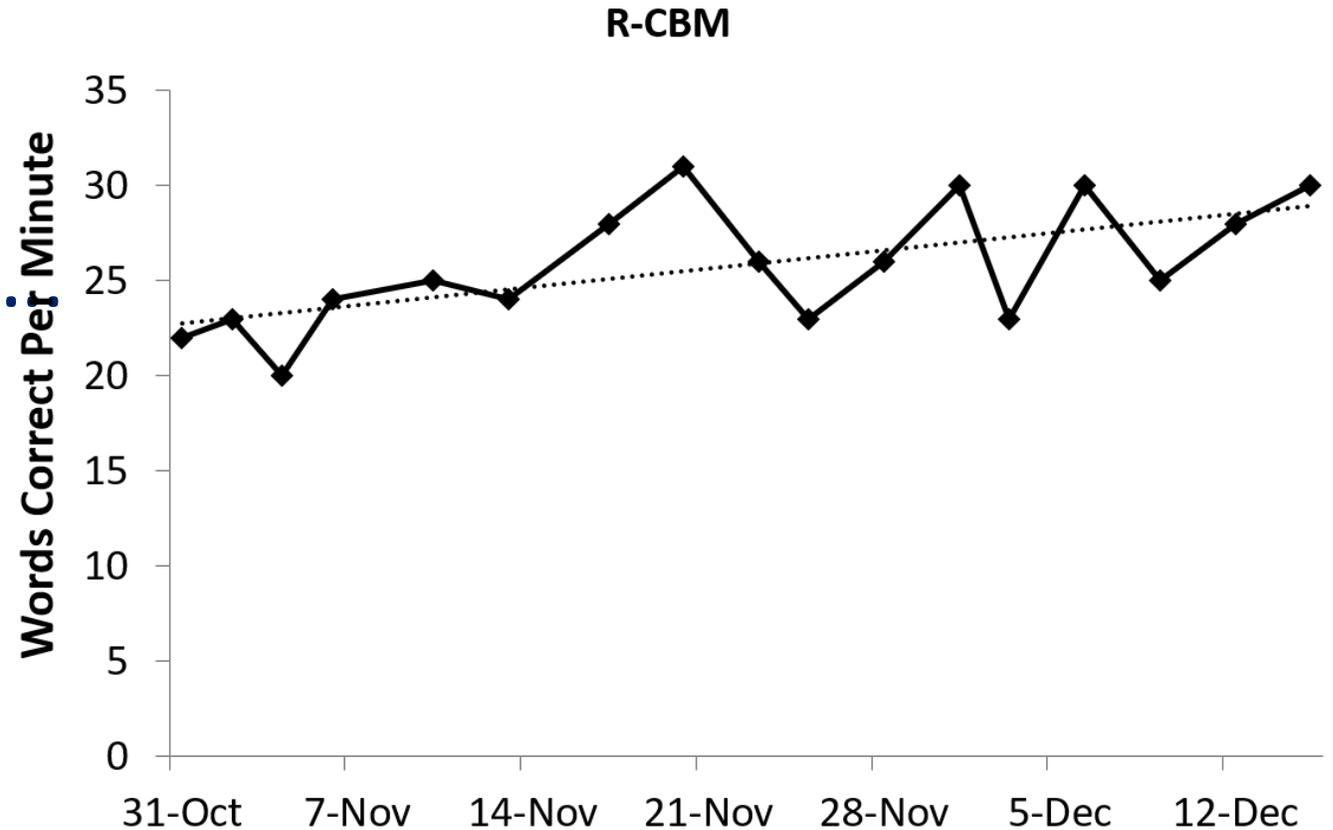We plan to evaluate progress after six weeks of implementation.

Intensifying Intervention - I

We identified and implemented an intervention for Torie, but…

How did that go?

We monitored x2/week using R-CBM probes

R-CBM

Intensifying Intervention Activity

So there was upwards progress, but it was shallow.

It's too early to change the intervention outright or consider Tier 3. We don't want to throw the baby out with the bathwater.

How can we intensify the intervention?

Intensifying Intervention - II

Intensification IS NOT simply making smaller groupings

What about "smaller" will make the intervention more "intense"?

- The additional practice?
- Ability to introduce a more diverse array of evidence-based instructional techniques?
- Possibility for more corrective feedback?

Research on smaller/individualized groupings as an intervention modification shows mixed results.

Intensifying Intervention - Dose & Sessions - I

One obvious option – increasing the amount of intervention

We can increase the dose (i.e., how many times we run the intervention components in each session)

And the number of sessions

So overall intervention time becomes dose x sessions

Intensifying Intervention - Dose & Sessions - II

Duhon et al (2009) conducted a study where they administered a quick (2min) class wide math intervention once a day.

If a given student didn't respond, they intensified to x5 times a day.

If the student didn't respond to that, they intensified to x10 times a day!

Most students responded to the base level of intervention. Some didn't.

Of those that didn't (3 students), two responded to x5. The last student responded to x10.

Intensifying Intervention - Dose & Sessions - III

So the take-home point:

One way to intensify intervention may be to increase the dose of the intervention and/or the amount of sessions.

This has been shown to work for many, but not all, students

We may not know what the right amount of intervention is until we progress monitor.

Intensifying Intervention – Dose & Sessions - IV

Schutte et al. (2015) spaced, or distributed, student practice

Time in intervention was equal across conditions, but distributed across:

One session

Two sessions

Four sessions

Distributing the practice resulted in learning "sticking" better.

G.M. Schutte et al. / Journal of School Psychology 53 (2015) 149–159
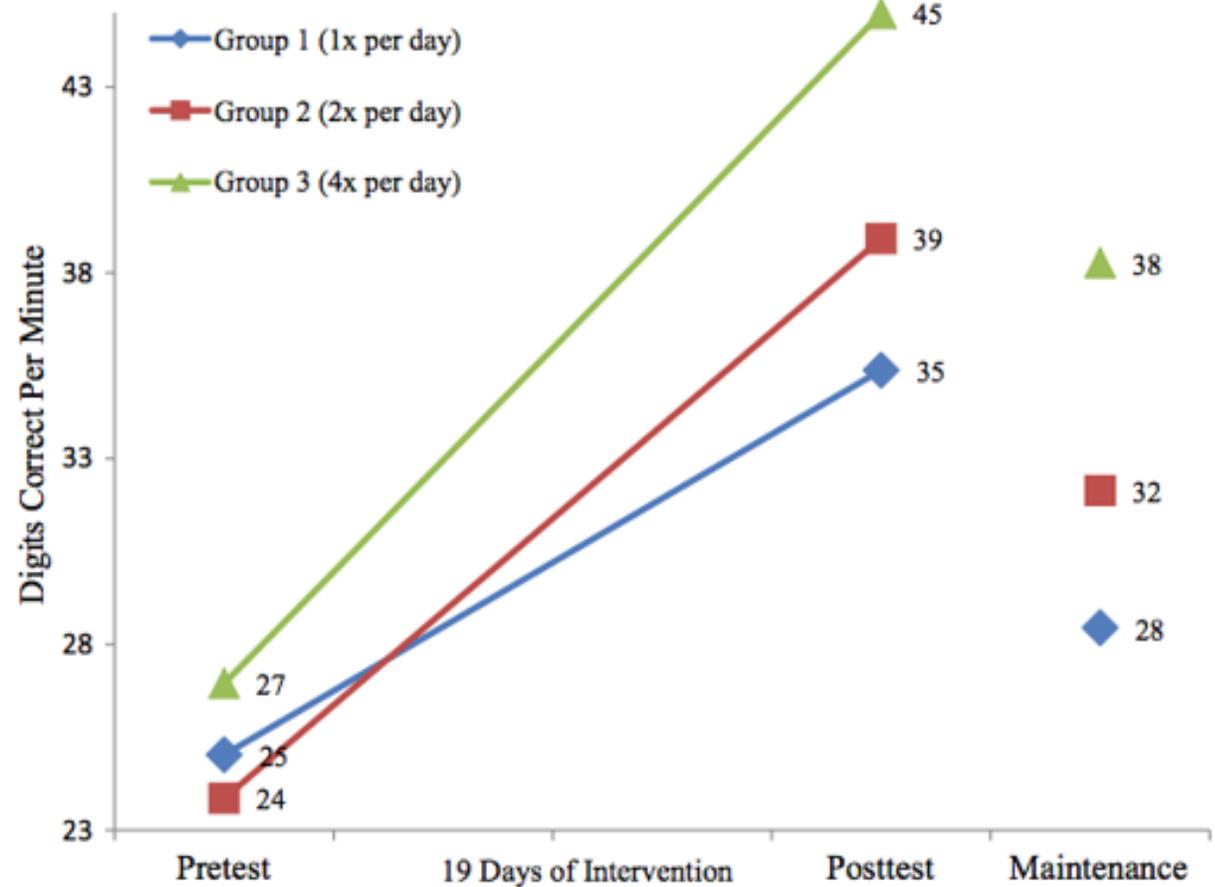
Fig. 1. Group fluency growth in DCPM after intervention and retention over time.

Intensifying Intervention – Goal Setting - I

Research shows students respond well to having set goals and feedback on their progress.

This is seen in research as usually beating one's previous score

- This gives them an explicit goal to work towards.

- Interventionists can share improvement from progress monitoring with students to motivate them to continue to improve.

Intensifying Intervention – Goal Setting - II

Research shows students respond well to having set goals and feedback on their progress.

Commonly, this is done visually and orally.

- Present a graph of their progress. Ask them to review and/or help complete it with data from the last or present session.

- Identify on the graph what the student's next goal is.

- Provide specific reinforcement for meetings short-term goals.

Intensifying Intervention – Feedback - I

Research shows students respond well to having explicit and immediate feedback regarding their response.

This is seen in research as usually feedback item-by-item or at the end of a task (reviewing what was correct and incorrect).

Intensifying Intervention – Feedback - II
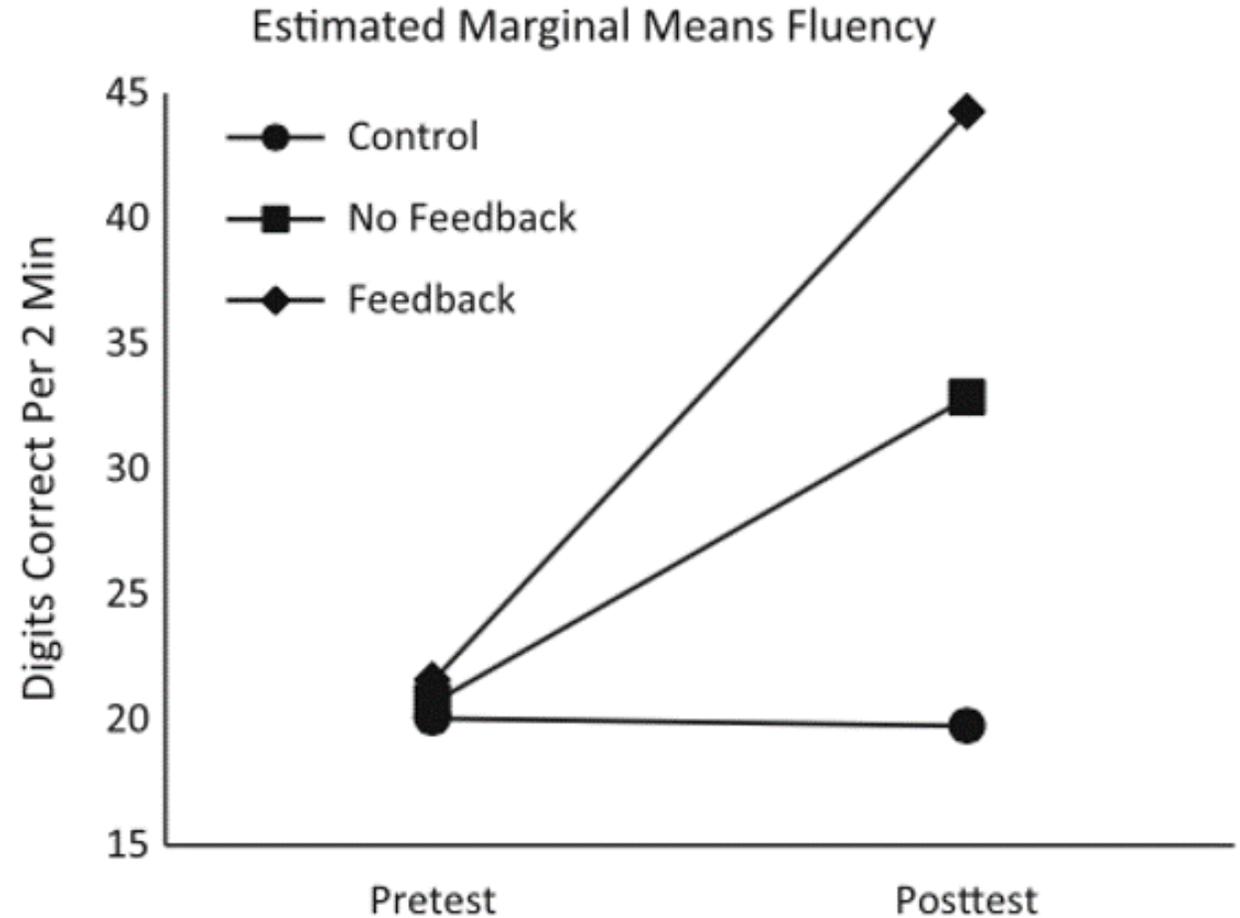
Duhon et al. (2015)

48 2nd grade students

3 level group design

Control

Explicit Timing + Goal Setting + Reward

Explicit Timing + Goal Setting + Immediate
Feedback + Reward

Estimated Marginal Means Fluency

Control
No Feedback
Feedback

Digits Correct Per 2 Min

Pretest   Posttest

Intensifying Intervention – Set Size/Scope

Say we are doing a flashcard intervention for letter names. Should we teach ALL letter names at once? 10 at a time? 5?

One way we can intensify is to reduce the amount of information being taught and use the extra time to increase repetitions of that information.

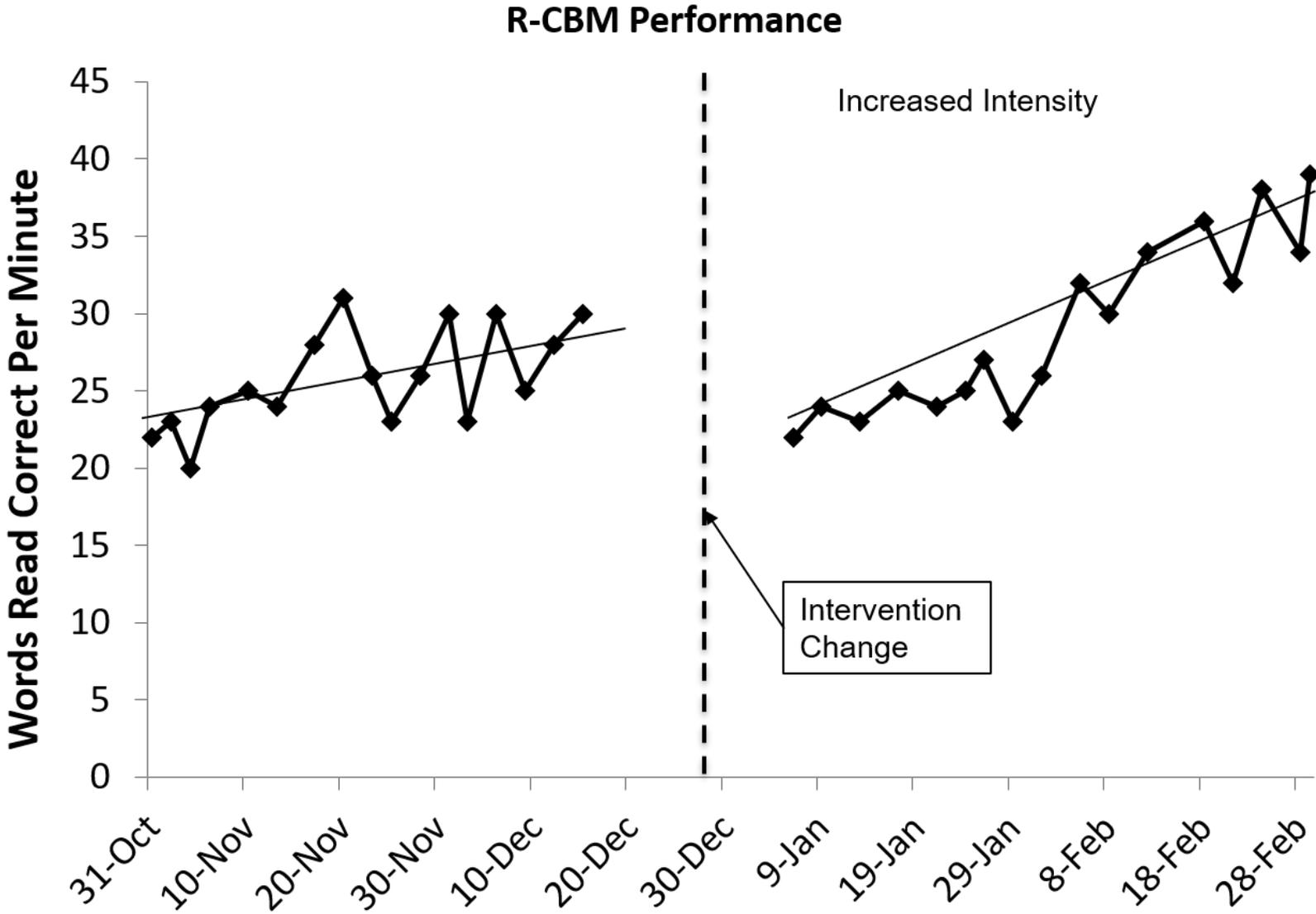Beginning ranges of 8-10 items, if teaching individual letters/words, is typical.

Intensifying Intervention – I

We intensified for Torie

We doubled the dose – 15min/x2 a day.

We also added goal setting (Torie must beat her score from the last cold read and graphs that progress herself).

R-CBM Performance

R-CBM Performance

Increased Intensity

Intervention Change

Intensifying Intervention – II

Intensification goes both ways

Putting students with mild/moderate deficits into highly intensive, resource rich environments is a waste of resources including:

- Staff
- Materials
- Space
- And most importantly, student time!

We want to use data and experience to predict the best environment and use progress monitoring to revise, as necessary.

Action Planning for Intervention Intensification - I

Identify an intervention that you've delivered. What was one of your "go to" strategies for students at-risk of a given reading problem?

What were the antecedent and consequence strategies engrained in that strategy? What about the intervention leads to change?

What was the dose and how many times did you administer it a week?

Action Planning for Intervention Intensification - II

Now, consider:

Three ways you could intensify the intervention if you observed no or low response to instruction.
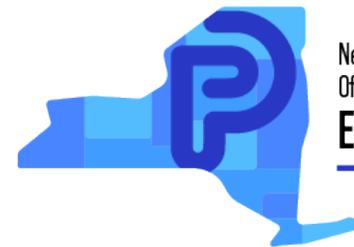
Why might these changes work?

 What part(s) of the intervention do they target?

What data would you use to monitor progress and make these decisions?

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