What happens when we run out of tiers?

Research-Based Approaches to Intensive Intervention

Devin Kearns, Ph.D.
Goodnight Distinguished Professor in Early Literacy

Overview

- What is **intensive intervention**?
- What is **data-based individualization**?
- What is **required to do** data-based individualization?
  - Programs
  - Progress monitoring
  - Adaptations
  - Teaming

Objectives
You'll be able to...

- define intensive intervention
- describe data-based individualization (DBI)
- enumerate the steps in the DBI process
- explain why this approach to DBI can lead to major increases in student achievement

 1056

Objectives
You'll be able to...

- **define intensive intervention**
- describe data-based individualization (DBI)
- enumerate the steps in the DBI process
- explain why this approach to DBI can lead to major increases in student achievement

 1058

What are intensive interventions?

academic supports
for students

with	either	or
persistent difficulties	**identified disabilities**	**at risk for them**

even after	in
evidence-based systematic instruction	Tier 1 & Tier 2
	and Tier 3 in some cases

 1061

Why intensive intervention?
All students deserve the best education

Endrew F. decision

We **strive** to maximize student learning	Students need different levels of support to maximize learning	
a typical chair for everyone	a sturdier chair for some students	a very carefully constructed rugged chair for just a few students
Tier 1	Tier 2	**Intensive intervention** **Tier 3**

 1062

How to make intensive intervention work: A decision-making system

is an approach to **identifying** specific challenges

has the key features of

- **increasing support** to address those needs
- increased **individualization**
- increased **intensity**
- being **driven by data**

based on student response

1063

How to make intensive intervention work: A decision-making system for...

- **identifying** specific challenges
- providing **high-quality intervention**
- **individualizing** when needed
- increasing **intensity** when needed
- using **data** to make every **decision**

1064

Intensive Intervention

Student Case Study
Bobby Washington

Student Case Study: Bobby Washington

- in Grade 3
- in Clayton Independent School District

1066

Student Case Study: Bobby Washington

Performance on Grade 3 Fall Benchmark Assessment

A Kitten Named Cream Cheese

Have you ever made a wish that came true? Not Alex. Every birthday, he would cross

1068

Student Case Study: Oral Reading Fluency

A Kitten Named Cream Cheese

Have you ever made a wish that came true? Not Alex. Every birthday, he would cross his

Have you **ee, ee, eever,** made a **wuh, ih, shuh, wish**? that **comes** true? Not Alex. **Eever, eever, ee,** every **birth, day, birthday**!, he will cross his

Bobby looks at the page and reads. He uses his finger to keep track of the words.

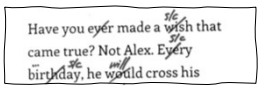
Word	Response	Type
ever	ee, ee, eever	vowel
wish	wuh, ih, shuh, wish	s/c fluency
came	comes	tense
every	eever, eever, ee	s/c vowel
birthday	birth, day	s/c compound
would	will	irregular high-freq word

for entire response (only part shown):
46 words, 7 errors
39 correct words per minute

1070

Student Case Study: Oral Reading Fluency

A Kitten Named Cream Cheese



Have you **ee, ee, eever,** made a **www...iii...shhh... wish**? that **came** true? Not Alex. **Eeevvver, eever, ee,** every **birth, day, birthday**!, he will cross his

Bobby looks at the page and reads. He uses his finger to keep track of the words.

Word	Response
ever	ee, ee, eever
wish	www..iii..shhh, wish
every	eeevvver, eever, ee
birthday	birth, day
would	will

Case Study: Bobby Washington Performance on ESI

Incorrect responses

Word	Response
jury	jure
scratched	scracht
clown	cloun
score	scor
cycle	sikel
crossing	crossg
valley	valy
refuse	refyuz

Early V

Case Study: Bobby Washington Grade 3 Screening

ELMS

The Early Literacy Measurement System

Student Performance Report

Student	Robert Washington
Grade	3
Reporting Period	Fall
Assessment Type	Benchmark
Data of Assessment	3 September 2023
Benchmark	75 CWPM
Student Score	38 CWPM
Score Percentile	2

Case Study: Bobby Washington Grade 3 Screening

Data of Assessment	9 September
Benchmark	75 CWPM
Student Score	38 CWPM
Score Percentile	2

severe difficulty

Case Study: Bobby Washington Programs used in Clayton Independent School District

Case Study: Bobby Washington Reading Instruction History

	Fall	Winter	Spring
K			
1			
2			

Pause & Process: Understanding Bobby's Needs

- Summarize the data to paint a picture of Bobby's needs.
- Decide what factors might be contributing to his difficulty.
- Think about what to do next.

 1087

Case Study: Bobby Washington Summary of instruction & Results

Instructional history

- received Tier 1 instruction with **varied use of the Tier 1 program**
- received Tier 2 instruction from the classroom teacher using a **supplemental component of the Tier 1 program**
- received instruction from the reading specialist in Grade 1 and Grade 2 using a **stand-alone supplemental reading intervention** called *Words to the World*

Results and Consequences

- shows limited progress on all benchmarks
- has lower scores at each benchmark test point
- was referred for special education evaluation
- has **severe, persistent reading difficulty**
- will need very **intensive intervention**
- will be a focus **DBI student**

 1088

Case Study: Bobby Washington So … what is next? …

- Intensive intervention is essential

 1089

Objectives You'll be able to…

- define intensive intervention
- **describe data-based individualization (DBI)**
- enumerate the steps in the DBI process
- explain why this approach to DBI can lead to major increases in student achievement

 1091

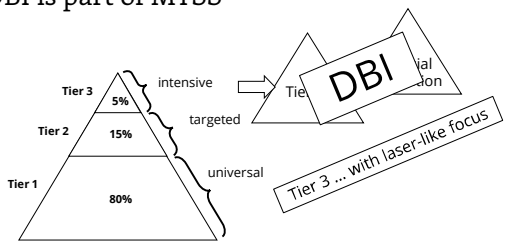
What is Data-Based Individualization?

is a specific way of	implementing intensive intervention
using a five-step process	that involves intervention, progress monitoring, and adaptation
based on evidence from	studies of • data-based *program modification* and • *experimental teaching* developed at the University of Minnesota

Examples:
Capizzi & Fuchs, 2005
Deno & Mirkin, 1977
Fuchs, Deno, & Mirkin, 1984
Fuchs, Fuchs, & Hamlett, 1989

 1092

DBI is part of MTSS



 1093

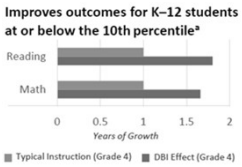
DBI is evidence-based: Meta-analytic data

Meta-Analysis	DBI Practice	Effect
Jung et al. (2018)	Team planning	Effect size (g) = 0.37
Filderman et al. (2018)	Collecting and analyzing data	Effect size (g) = 0.24
Fuchs et al. (2021)	Use of technology to implement DBI	Positive magnitude (not estimated)

Implementation of DBI practices often increases student achievement.

DBI is evidence-based

"In one year, 78% of students receiving intervention reached ambitious growth goals set using national norms. Thirty percent of students were exited from any kind of intervention."

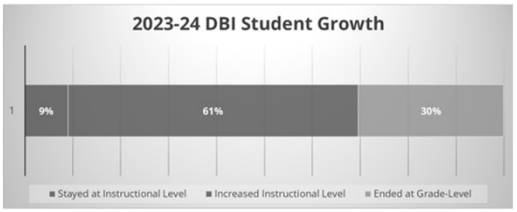


Leslie Anderson, Director Pupil Personnel Services for the East Providence, Rhode Island, Public Schools

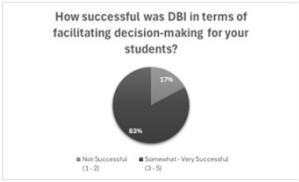
Jung, McMaster, Kunkel, Shin, & Stecker, 2018; Scammacca, Fall, & Roberts (2015)

1095

DBI is evidence-based: Change in grade of performance in one project

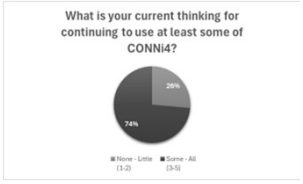


Benefits of DBI: Our teachers found it to be very successful



N = 58

Benefits of DBI: Most teachers will continue—even without CONNi4



N = 58

Objectives
You'll be able to...

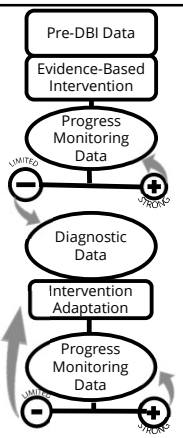
- define intensive intervention
- describe data-based individualization (DBI)
- **enumerate the steps in the DBI process**
- explain why this approach to DBI can lead to major increases in student achievement

1100

Steps in the DBI process

- Implement an intensive intervention program
- Monitor progress
- Examine diagnostic data
- Make adaptations using a taxonomy of intervention adaptations
- Continue progress monitoring, with adaptations occurring as needed to ensure adequate progress

The DBI Process … How does it work?

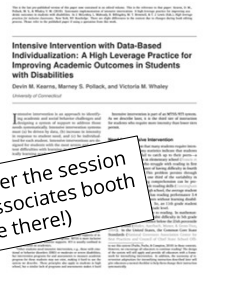


We follow this process for each student

1104

Reading: Kearns, Pollack, & Whaley (2018)

For additional background
Good resource to read later



Intensive Intervention with Data-Based Individualization: A High Leverage Practice for Improving Academic Outcomes in Students with Disabilities

Devin M. Kearns, Marney S. Pollack, and Victoria M. Whaley

University of Connecticut

available for free after the session at the Curriculum Associates booth (I will also be there!)

1106

Steps in Data-Based Individualization

Implement an intensive intervention program

1. Implement an intensive intervention program
2. Progress monitoring
3. Diagnostic assessment
4. Adaptations using a taxonomy of intervention adaptations
5. Continued progress monitoring, with adaptations occurring as needed to ensure adequate progress

Intervention programs are defined by principles—not what other people say

- Some program developers describe their programs as
  - specifically geared to Tier 3
  - for students identified with special education needs
  - designed for students at a particular grade-level
- A program is an intervention program if it has *specific features*
- **Select interventions because they match student need, not because of the marketing**

Data-Based Individualization

School Team Meetings

Data-Based Individualization requires a school team

- examining data is hard
- coming up with good adaptations is hard

What is a school DBI team?

- A group of people who work on a regular basis (every 6-8 weeks) to examine student data and make decisions

Recommended structure

What are the roles?

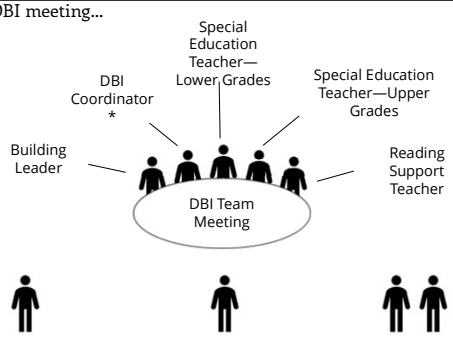
- Facilitator (Question Asker)
- Notetaker
- Timekeeper
- Student's teacher(s)

What are the steps?

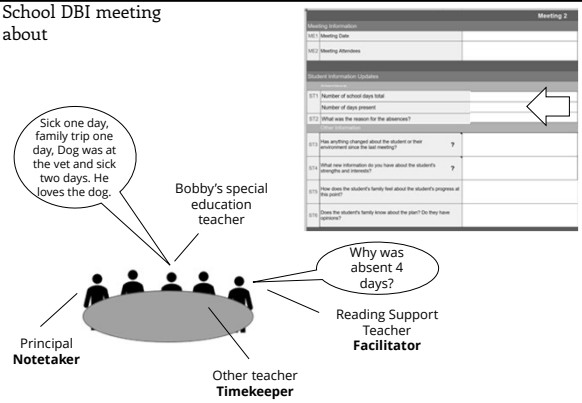
- Facilitator puts template on the screen.
- Facilitator asks the questions on the template.
- Teacher answers the questions.
- Notetaker scribes answers.
- Team participates in discussion when appropriate.

1116

School DBI meeting...

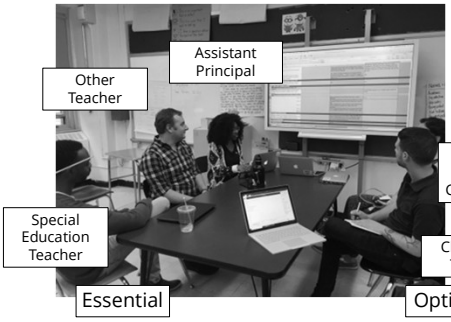


School DBI meeting about



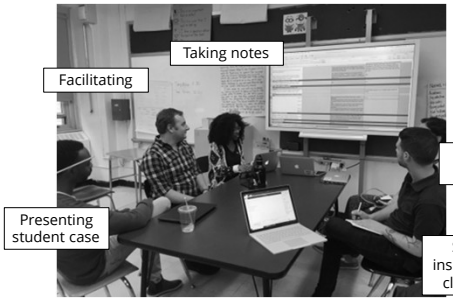
1118

Example of a School DBI Team



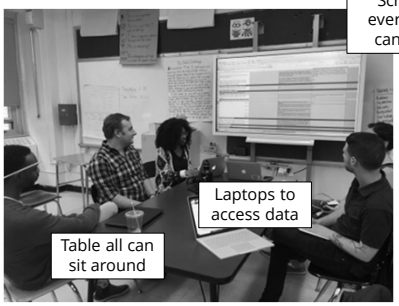
 1119

School DBI Team roles



 1120

School DBI Team organization/logistics



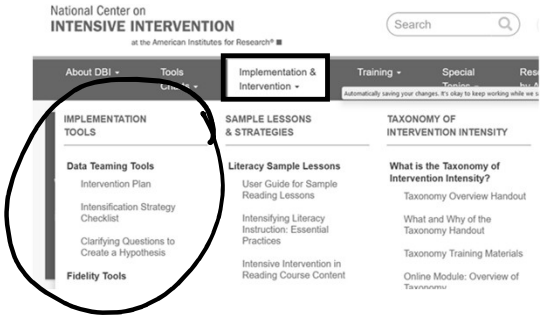
 1121

DBI works best with a team-based system

Data-Based Individualization

A DBI Template

Visit the National Center on Intensive Intervention website for materials



Create a DBI Template

- Use a Google Sheet to keep track of student data.
- Make one copy for each student.
- Include tabs for
  - Diagnostic Student Data
  - Instruction Overview
  - Meeting Notes
  - Graphs with space to show events

Your template should include tabs for …

- Diagnostic Student Data
- Instruction Overview
- Meeting Notes
- Graphs with space to show events

School DBI Team meeting logistics

Physical organization

- Screen with template everyone can see
- Table everyone can sit around
- Laptops to access other information

Systems

- Create a Google Drive folder for each student
- Copy the template into the folder
- Add additional files to folder
  - Audio recordings of reading
  - PDFs of work samples

 1140

School DBI Team meeting timing

Scheduling

- During planning periods
- In place of other MTSS meetings
- Within the school day
- Every 6 weeks

Length per student

- Meeting 1
  - 30-45 minutes per student
- Meeting 2
  - 30 minutes per student
- Meeting 3-on
  - Strong progress: 15 minutes
  - Limited progress: 30 minutes

 1141

Pre-DBI Data: Decision making Identify needs by domain

Word Recognition

- Alphabet knowledge
- Letter-sound identification
- Letter-name identification
- High-Frequency Words
- Phonological awareness
- Decoding
- Encoding

Language/Reading Comprehension

- Fluency
- Vocabulary
- Syntax
- Comprehension
  - Retelling
  - Summarizing
  - Recognizing text structure

 1144

Steps in Data-Based Individualization

Progress Monitoring

1. Implement an intensive intervention program.
2. Progress monitoring
3. Diagnostic assessment
4. Adaptations using a taxonomy of intervention adaptations
5. Continued progress monitoring, with adaptations occurring as needed to ensure adequate progress

Evidence-based interventions: Checklist

Category	Key Questions	Y/N?
Systematicity	• Is there a scope and sequence?	
Explicitness	• Are there many opportunities to respond and practice? • Is there a model-practice structure to lessons?	
Completeness, Feasibility, and Expertise	• Do you have all the materials needed? • Is this doable based on time available and complexity of the program? • Does the team have the necessary expertise (or can figure it out quickly)?	

Systematicity

- Scope and sequence of lessons rather than:
  - general recommendations
  - no recommendations


Sound-Spelling Sequence Chart

Based on analysis by Devin M. Kearns, Ph.D.

#	Sound-Spelling	Clue	Explanatory Sentence	Notes
1	m /m/	nap	He naps at noon.	It is not possible to read any words just teaching n /n/. Teach a /a/ in the same lesson if you would like to start reading words with sound-spellings right away.
2	a /a/	apple	The apple cries "aaa."	1. This is the first vowel taught in the program. It is a short vowel. Tell students that the A makes the short sound /a/ and is called "short A." 2. This is the first lesson that includes decoding. Use the Sounding Out Routine to read "an" using /a/ and /n/.
3	t /t/	teeth	It's time to brush her teeth.	
4	i /i/	iguana	The iguana sees the insect.	Tell students that the i makes the short sound /i/ and is also a short vowel. Explain double letters. Tell students that the word "inn" can be read using the two Ns as one sound. Tell students to pronounce the sound just one time.
5	m /m/	muffins	Mmmm! Muffins!	Remind students that double letters are pronounced with one sound.
6	l /l/	lollipop	She licks the lollipop.	If needed, remind students that double letters are pronounced with one sound.
7	d /d/	dog	The dog digs in the dirt.	
8	s /s/	snake	The snake hisses.	If needed, remind students that double letters are pronounced with one sound.
9	p /p/	penguin	The penguin prefers popcorn.	
10	r /r/	run	He runs the race.	
11	b /b/	bear	The brown bear walks around.	
12	f /f/	fish	Five fish swim.	If needed, remind students that double letters are pronounced with one sound.
13	e /e/	elephant	The elephant listens.	Tell students this is a short vowel.
14	g /g/	gorilla	The gruff gorilla grunts.	
15	u /u/	umbrella	They're stuck under the umbrella.	Tell students this is a short vowel.

1151

Explicitness

Clear Objective
- Important focus
- Specific, measurable learning outcome

Modeling	Practice
• Clear explanation • Planned examples	• Guided • Independent

Supporting Practices
- Elicit frequent responses
- Providing immediate specific feedback
- Maintaining a brisk pace

Completeness and feasibility

Completeness
- Do you have all the materials…
  - because the program provides them?
  - because all of the resources are in your classroom?
  - because you have prepped them yourself?

Expertise
- Do you know how to do this?
  - Do you have some training
  - Is this similar to other programs and can be adapted?
  - Can you figure it out quickly?

Feasibility
- Can you actually do this because…
  - lessons take a reasonable amount of time?
  - materials are easy to work with and follow?

1153

A good intervention program is an essential foundation

What is essential:
- an effective program

Why it is essential:
- without a program, it is hard to know where we are starting…

1161

Using a program

Galactic Literacy Foundational Skills Features
- 40 sound-spelling cards
- 20 phonological awareness game routines
- reading words with specific procedures
- spelling-and-decoding routines
- decodable books
- 26 letter cards

So, Mr. K, are you using all the parts of *Galactic*?

I change a few things.

OK....

What have you been doing?

I focus mostly on the letter cards and use the words from the phonics.

Note: This is an imaginary program.

1162

Turn & Talk

- What percentage of Mr. K's lessons are *Galactic*?

Galactic Literacy Foundational Skills Features
- 40 sound-spelling cards
- 20 phonological awareness game routines
- reading words with specific procedures
- spelling-and-decoding routines
- decodable books
- 26 letter cards

So, Mr. K, are you using all the parts of *Galactic*?

I change a few things.

OK....

What have you been doing?

I focus mostly on the letter cards and use the words from the phonics.

1164

Using a program...

words

26 letter cards

1165

Is this a program?

1166

Bobby Washington Intervention Program Decision

- He participated in *Galactic Literacy Starbuilder*
  - for students within a year of grade-level
  - a component of the core reading program
- After a lack of success in *Starbuilder*, he participated in *Words to the World*
  - for students with any level of reading difficulty
- After a lack of success in *Words to the World*, the teacher started *Reading Success from Day 1*

Very clear simple routines.

Lots of opportunities to practice

Careful scope and sequence with spiral review

Reading Success from Day 1

1204

Steps in Data-Based Individualization

Progress Monitoring

1. Implement an intensive intervention program.
2. Progress monitoring
3. Diagnostic assessment
4. Adaptations using a taxonomy of intervention adaptations
5. Continued progress monitoring, with adaptations occurring as needed to ensure adequate progress

Where does program monitoring fit?

	Formative	Progress-Monitoring	Summative
Purpose	**Instructional**	**Predictive**	**Evaluative**
Frequency of data collection	Daily	Weekly	One or a few times per year
Examples	• Teacher-made tests • Work samples • Teacher observations	• General-outcome measures • Mastery measures	• Standards assessments • Benchmark tests • District-wide unit assessments
Question answered	Did the student understand what I taught?	How well is instruction going?	What has the student learned overall?

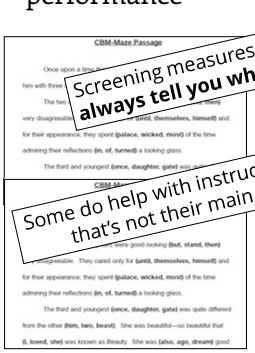
1209

Progress monitoring tools have one essential purpose

They can tell you *whether* instruction is working
Most other tests cannot

1211

Progress monitoring measures "index performance"



Indicates likely performance on standardized reading comprehension test

≠

not a complete reading comprehension test

Is **not a diagnostic** assessment

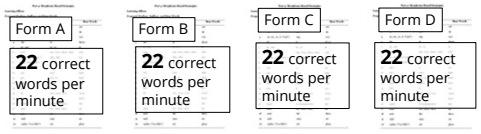
Tests that can be administered quickly

- The test is as brief as possible
- Shorter is better
- Minimize loss of learning time (1 minute is not a lot of loss)

Tests with many forms of equivalent difficulty

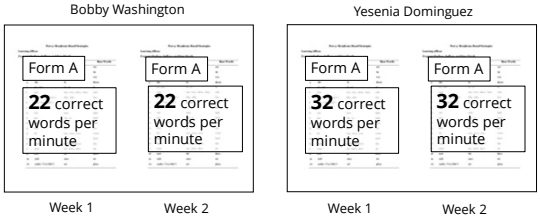
- has reliability data
- has norms for slope, i.e, rate of improvement

How do we evaluate **reliability**? Alternate-form reliability



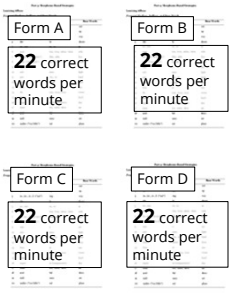
1225

How do we evaluate reliability? Test-retest reliability



1226

Forms of equivalent difficulty



1227

Forms not equivalent difficulty

measures of skill learning

Week 1 Letter Names
16 correct letters per minute

Week 2 Nonsense Word Fluency
3 correct words per minute

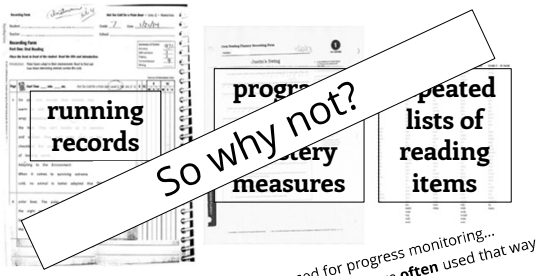
teacher-selected booked

Once Upon a Thursday
37 correct words per minute

Facts About Insects
17 correct words per minute

1228

Many measures do not have forms of equivalent difficulty

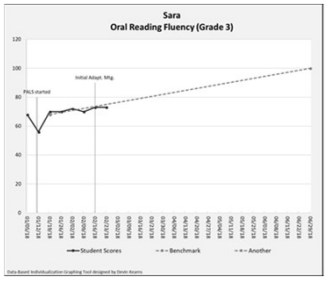


they cannot be used for progress monitoring...
even though they are **often** used that way

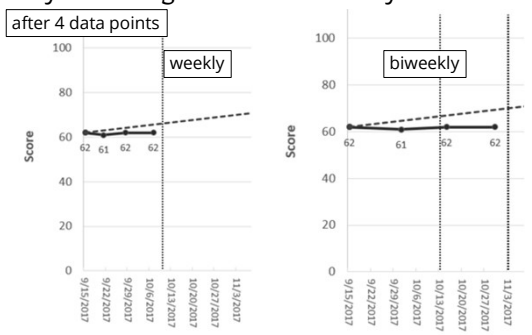
1229

Regular checks of student progress

- Weekly (more or less)



Why does "regular" mean weekly?



1238

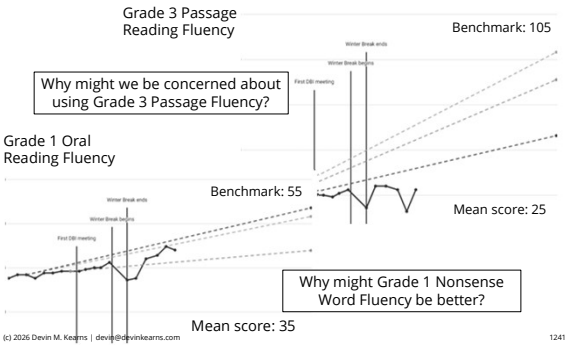
Choosing a level: Always the instructional level for intensive intervention

- Assessment options:
  - ~~Grade level~~
  - Instructional level

but why?

1240

Why instructional level matters:



1241

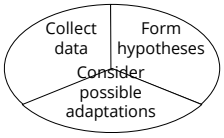
Steps in Data-Based Individualization

3 Diagnostic Assessment

1. Intervention program
2. Progress monitoring
3. Diagnostic assessment
4. Adaptations using a taxonomy of intervention adaptations
5. Continued progress monitoring, with adaptations occurring as needed to ensure adequate progress

Selecting and Interpreting Diagnostic assessments

- When do we use diagnostic assessment?
- Progress monitoring data show a lack of response
- Now, we need to discuss what is happening as a team
  - What sources of information do we have?
  - What do we think is causing the lack of response?
  - What are some options for improving outcomes?
  - **OK, here's what we'll do**



1247

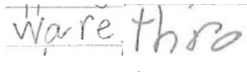
Sources of diagnostic assessment data

- ❑ Informal observations and anecdotal notes
  - collected and recorded by teacher
- ❑ Classroom observations
  - during instruction
  - by someone with expertise related to need
- ❑ Formative assessment results
  - from classroom work samples
- ❑ Progress monitoring data
  - by doing error analysis
  - when appropriate (e.g., yes for ORF, no for Maze)
- ❑ Standardized test results
  - from state tests (early in the year)
  - triennial evaluation reports
- ❑ Reports from specialists

Bobby Washington

Diagnostic data → Hypothesis → Adaptation

- Review the diagnostic assessments



Uses all sounds in spelling

Uses common sound-spellings

smarge *merge*

dervan *dear* … **IDK**

misk *mask*

rensel *ran … rest … wrestle*

Make nonsense words into real words

Has more difficulty with polysyllabic words

1252

Examine the diagnostic assessment data and construct a hypothesis about the cause of difficulty

1. Review the diagnostic assessments
2. Come up with a hypothesis about what might be causing the student's academic difficulty
3. Start considering adaptations

tends to guess.

needs strategies to decode polysyllabic words.

Adaptations

- What we will do to address the issue identified…?

We could do… anything?

Categories of adaptations

Not anything—**5** things

Dosage
Amount and completeness of intervention

Alignment
Match between the program and student academic need

Behavior support
Strategies to minimize non-academic, nexpected behaviors

Attention to transfer
Successful application of skills learned during intervention to new contexts

Explicit instruction
Amount of instruction using a model-practice strategy with frequent opportunities to participate and immediate feedback

1261

Steps in Data-Based Individualization

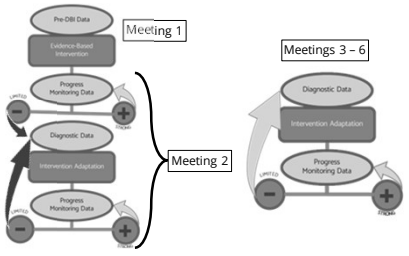
Adaptations and Iterations

1. Implement an intensive intervention program
2. Progress monitoring
3. Diagnostic assessment
4. Adaptations using a taxonomy of intervention adaptations
5. Continued progress monitoring, with adaptations occurring as needed to ensure adequate progress

Adaptations and Iterations

- Adaptations
  - made based on hypotheses from diagnostic assessment
  - selected from the taxonomy
- Iterations
  - cycling through progress monitoring, diagnostic assessment, and adaptation
  - not needed if student maintains adequate progress toward the goal (along the aim line)

We follow the cycle again and again



1264

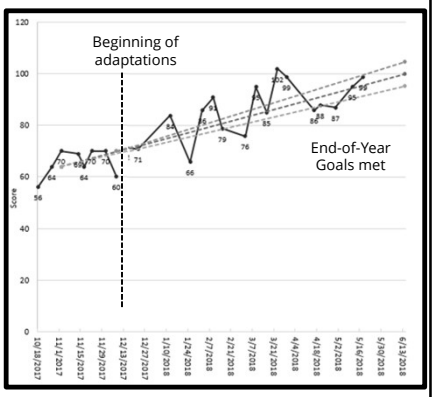
1264

Case Study
Bobby Washington

- After 6 weeks of participating in 5 lessons per week, the team examines his data.

1265

Bobby's Weekly Progress Monitoring Data **with adaptations**



Case Study
Bobby Washington

- After 6 weeks of participating in 5 lessons per week, the team examines his data.
- He is now showing the same level of growth that is expected for a student learning word recognition skills.
- The team judges that this improvement is adequate that no further adaptations are needed.
- They continue to reconvene and examine Bobby's data at the same 4- to 6-week intervals.

1267

Case Study
Bobby Washington

Bobby's End-of-Year Benchmark Assessment

An Amazing Show

An Amazing Show

The circus arrived in the morning. By the afternoon, the tent was set up, and people lined up to get in. When they finally got in, they saw bright flags. They heard fun music. They found their seats and waited for the show to start. A bell rang, and the acrobats ran in. They did flips and tricks. The show was so good that people almost never closed their eyes! The show was almost two hours, but everyone said they wanted it to last much longer. When the circus left the next day, the people in the town were sad. Some of the acrobats were sad too.

91 word per minute, 4 errors
87 correct words per minute

1268