



# Decisions, Decisions, Decisions

## Using Data to Make Instructional Decisions for Struggling Readers

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*Andre, a fifth-grade student with a learning disability, was reading significantly below grade level. Ms. Peterson, his special education teacher, started the school year doing guided reading with Andre in a small group to support his reading growth. Given benchmark assessment data and her observations of Andre's reading performance, Ms. Peterson determined that Andre needed more explicit instruction focused on advanced word study and comprehension of text. She began to provide one-on-one support to Andre, using two reading intervention programs adopted by her school district: One provided phonics-based instructional lessons, and the other provided a framework for teaching comprehension strategies. At this point, Ms. Peterson had a plethora of data on Andre's reading performance because she was required by her school to collect data on each student. However, she was unsure whether these were the right data or how she should use them to regularly monitor Andre's progress to make necessary changes to the instructional program and best support his growth in reading. Ms. Peterson, like many teachers, needed help determining when and how to collect and interpret student data to effectively inform instruction.*

Reading proficiency is fundamental to school success. However, up to 50% of students with reading disabilities, like Andre, are not making adequate progress (D. Fuchs & Fuchs, 2015). In the past 10 years, there has been almost no change in the percentage of students with disabilities reading above a basic level on the National Assessment of Educational Progress (National Center for Education Statistics, 2015). Despite strong empirical evidence to support research-based core instruction and supplemental interventions, there remains a significant number of students for whom these practices do not seem to be sufficient in closing achievement gaps with their typically achieving peers (e.g., Al Otaiba & Fuchs, 2006; O'Connor & Fuchs, 2013). This group of students who

demonstrate persistent and severe reading difficulties require increasingly intensive instruction individualized to meet their instructional needs (D. Fuchs & Fuchs, 2015). Individualizing instruction with student-level data—a process known as *data-based decision*

1. The teacher delivers an intervention program targeting the student's needs with greater intensity.
2. The teacher monitors student progress on an ongoing basis.
3. When data indicate that the student is not making desired progress, the

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*making* (DBDM)—is a recommended practice to intensify intervention for inadequate responders (Deno & Mirkin, 1977; L. S. Fuchs, Deno, & Mirkin, 1984; L. S. Fuchs & Fuchs, 1986).

DBDM is designed to address persistent academic difficulties. Interventions are implemented with greater frequency and duration than typical services, which requires teachers to have adequate knowledge and skills to (a) implement multiple evidence-based interventions to address significant learning needs and (b) use ongoing progress-monitoring data to estimate students' response to intervention programs and to determine when adjustments are needed (D. Fuchs, Fuchs, & Vaughn, 2014). Special education training highlights the importance of using data for decision making, but it often lacks specific guidance on interpreting data and linking observed patterns to instructional decisions (Jimenez, Mims, & Browder, 2012).

### DBDM Process

*DBDM* refers to the process of gathering and interpreting student-level data to make instructional adjustments. One practical and widely used framework for this process is data-based individualization (see Table 1).

There are four distinct steps of data-based individualization as outlined by the National Center on Intensive Intervention (2013; see Figure 1):

teacher conducts a diagnostic assessment to determine the student's specific needs and why the intervention is not meeting those needs.

4. The teacher then adapts the intervention accordingly.

After completing these steps, the process repeats.

### Teacher Preparation for Use of Student Data

To effectively implement DBDM, teachers need to be able not only to track student progress-monitoring data but, more important, to synthesize multiple sources of data to make instructional decisions (D. Fuchs & Fuchs, 2016; Gallagher, Means, & Padilla, 2008). Synthesizing data to make instructional decisions presents a challenge for many teachers because most have not received the professional development or preservice training to engage in this process (Means, Chen, DeBarger, & Padilla, 2011). Although it is true that teachers frequently gather data on their students, using these data to adjust instruction for students on an individual basis is much more complicated and time-consuming, particularly when there are multiple, conflicting sources of data (Means et al., 2011; Wayman, Cho, Jimerson, & Spikes, 2012).

Many teachers report a lack of training focusing on using the data that they are already collecting to make instructional decisions; for this reason,

it is no surprise that many teachers report that they are not confident in the process of collecting and interpreting data (Datnow & Hubbard, 2016;

Espin, Wayman, Deno, McMaster, & Rooij, 2017). Teachers can follow four steps to effectively make these decisions (see Figure 2):

toward learning goals, as well as their successful attainment of specific skills.

**Curriculum-based measurement.** In the area of reading, CBM that assesses oral reading fluency (ORF) and reading comprehension (maze) are most commonly used (Graney, Martínez, Missall, & Aricak, 2010; Stecker et al., 2008). Measures should be administered at the student’s current instructional level, as determined by the highest-level ORF passage for which a student can read 10 to 50 words per minute with 85% to 90% accuracy (Stecker & Lembke, 2011). The ORF probe is a 1-minute timed measure of words read correctly per minute (Hosp & Hosp, 2003). The maze task is a 2.5- to 3.0-minute timed assessment of reading comprehension that measures how many blanks students can correctly fill in to restore meaning to a text, with approximately every seventh word missing and three choices per blank (Hosp & Hosp, 2003). Both these CBM tasks are valid and reliable (Graney et al., 2010). These assessments are beneficial because they allow teachers to examine individual student reading progress over time as well as compare one student with the general student

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Mandinach & Gummer, 2013). As such, this step of the DBDM process—progress monitoring (as presented in Figure 1)—is the focus of the present article.

### Data Decision Rules

Collecting data has the potential to improve student outcomes when teachers use the information not only to track growth but also to inform instruction (Stecker, Lembke, & Foegen, 2008). Using curriculum-based measurement (CBM) or other brief assessments for progress monitoring, teachers can decide whether to continue with current methods of instruction, adapt instruction, or increase a goal based on growth rates demonstrated on student graphs

1. Select a tool for progress monitoring and administer baseline assessments.
2. Determine the frequency of progress monitoring.
3. Set a student outcome goal.
4. Graph and analyze student data to make instructional decisions.

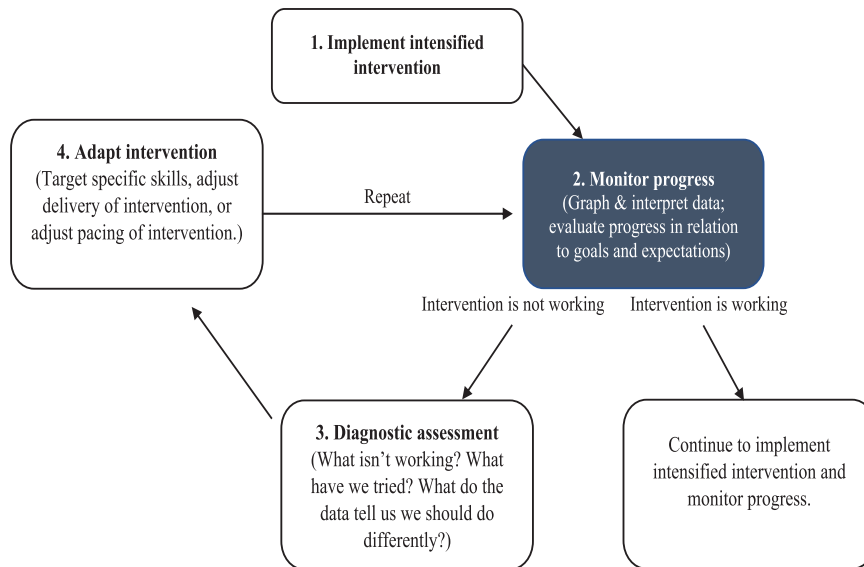
### Step 1: Select a Tool for Progress Monitoring and Administer Baseline Assessments

The first step is deciding what measure to use for data collection. Two types of tools can be used for this process: curriculum-based measurement (CBM) and mastery measures (see Table 1). Taken together, data collected with both these tools provide necessary information on students’ growth

**Table 1. Key Terminology Involved in Data-Based Decision Making**

Term	Meaning
Curriculum-based measurement	A general outcome measure of student progress in a particular area
Data-based decision making	A method for intensifying intervention by using student-level data to make instructional decisions
Data-based individualization	A specific framework proposed by the National Center for Intensive Intervention for engaging in the data-based decision-making process and using data to make instructional decisions
Mastery measure	A method of goal setting that entails mastery of a particular skill before continuing instruction
Outcome goal	A goal based on expected rates of growth, baseline data, and weeks in intervention
Points-below method	A data decision rule based on the last three data points collected to determine whether instructional change is needed
Slope method	A data decision rule based on the student’s slope versus one’s outcome goal slope to determine whether instructional change is needed

**Figure 1. Steps in the data-based decision-making process**



population. Although CBM can help teachers see when instructional changes need to be made to promote progress, it is less useful for deciding what instructional changes need to be made. For this reason, CBM may need to be used in combination with other skill-based diagnostic assessments for the purpose of making instructional

vowel-consonant-*e* spelling patterns (i.e., applying the “magic *e*” rule), either alone or in conjunction with administering a CBM for overall oral reading fluency. Mastery measures are more directly linked to instruction and may more accurately reflect student mastery of instructional goals. As such, this method of progress monitoring has

Once a progress-monitoring tool has been selected, it is important to keep testing conditions consistent and standardized during administration of the measure (Christ, Zopluoglu, Long, & Monaghan, 2012) so that student performance is based solely on one’s skill level as opposed to external factors. For example, this may involve administering tests at the same time of the day or in the same setting each week to have more precise results (Hosp & Hosp, 2003). Before moving any further in the process, teachers should gather three data points for baseline performance information. Baseline data points should be administered before progress monitoring begins to determine a student’s current level of performance. These baseline data points are necessary for the next steps of setting and assessing outcome goals. For additional information on selecting and administering CBM, see Hosp and Hosp (2003). The National Center on Intensive Intervention provides a listing of valid and reliable progress-monitoring tools ([www.intensiveintervention.org](http://www.intensiveintervention.org)).

To decide which progress-monitoring tool is appropriate for your student, ask the following questions:

- “Do I want student outcomes to be general or specific?” If you want general outcomes, choose a CBM. If you want specific outcomes, choose a mastery measure.
- “Do I want student outcomes to be standard and trackable over time, or sequential and skill based?” If you want standard growth measures, choose a CBM. If you want skill-based growth measures, choose a mastery measure. For information on standard and skill-based growth, both types of measures can be used in tandem. For a consolidated list of questions, see Table 2.

*Ms. Peterson wanted a general growth measure that would be standard and trackable over time to determine whether Andre was making progress as a result of the instructional program she was using and to guide her in making*

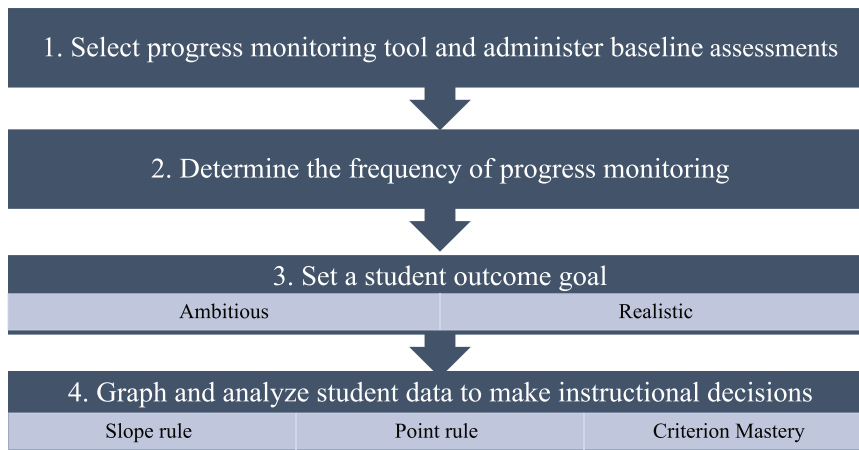
## Using CBM or other brief assessments for progress monitoring, teachers can decide whether to continue with current methods of instruction, adapt instruction, or increase a goal.

adjustments. Many resources, including a listing of reading CBM assessments and their technical adequacy, is available on the National Center on Intensive Intervention website ([www.intensiveintervention.org](http://www.intensiveintervention.org)).

**Mastery measures.** Mastery measures assess criterion mastery—or student progress toward a specific learning goal (Hosp & Hosp, 2003). The specific learning goals measured are subskills of a global progress-monitoring measure (Hosp & Hosp, 2003). For example, a teacher might want to track student progress toward a short-term goal of mastering

benefits for guiding instruction. Mastery measures also correspond to the curriculum more closely because they assess progress through skills sequentially. However, mastery measures are usually not norm referenced for growth, making the goals very particular to the student and the growth goals more subjective. In addition, owing to the particular skills being assessed, overall student growth toward a global learning outcome is not tracked. Mastery measures can be used alone when a particular skill is being targeted, or they can be used with CBM when a more comprehensive learning outcome is set.

**Figure 2. Four steps to effectively monitor student progress**



Note. Monitoring student progress is one part of the DBDM process, as shown in Figure 1.

any additional adjustments. Given Andre’s original benchmark assessments and classroom observations, she knew that his skill deficits affected his reading fluency and comprehension. She therefore decided that she would use CBM in the area of oral reading fluency and reading comprehension to track Andre’s progress. Ms. Peterson administered a fifth-grade passage, then a fourth-

third-, and second-grade passage, the last of which Andre was finally able to read with sufficient fluency and accuracy. Now that she knew his instructional level, she administered three second-grade ORF and maze CBM probes to Andre over a 2-week period to get his baseline performance levels. She decided to use AIMSweb CBM because it was available at her school (Shinn & Shinn, 2008). She made sure to

administer each CBM probe at the same time and in the same setting to make sure that his performance was accurate, resulting in stable baseline data.

Given Andre’s instructional level and known skill deficits, Ms. Peterson decided to continue with the two chosen reading interventions. However, on the basis of his errors made in the baseline CBM tasks, she noted that many of Andre’s reading errors appeared to be related to a lack of knowledge about long-vowel spelling patterns. To address this, she decided to adjust the word study intervention by increasing the time spent explicitly teaching phonics rules and patterns. Ms. Peterson was now ready to determine how often and how long to collect data to inform her future instructional decisions.

**Step 2: Determine the Frequency of Progress Monitoring**

The second step is to determine how frequently to collect student data. Research varies in recommendations for how often to collect data for progress monitoring. At a minimum, it is possible to make instructional decisions with 5

**Table 2. Key Questions**

Step	Questions
1. Select progress-monitoring tools and administer assessment	<ul style="list-style-type: none"> <li>Do I want student outcomes to be general or specific?</li> <li>Do I want student outcomes to be standard and trackable over time or sequential and skill based?</li> </ul>
2. Determine frequency of progress monitoring	<ul style="list-style-type: none"> <li>What is my student’s current reading level?</li> <li>How variable is my student’s performance on baseline data?</li> <li>How long am I tracking student data overall?</li> </ul>
3. Set a student outcome goal	<ul style="list-style-type: none"> <li>Where is my student performing at baseline?</li> <li>How long would I like to track student progress toward a goal?</li> <li>What is a <i>realistic</i> goal for this student based on grade level and the time-tracking progress?</li> <li>What is an <i>ambitious</i> goal for my student based on grade level and time-tracking progress?</li> <li>What is a goal that is in between, which would be achievable but rigorous for my student?</li> </ul>
4. Graph and analyze student data to make instructional decisions	<ul style="list-style-type: none"> <li>What progress-monitoring tool am I using?</li> <li>What are the recommended ways to collect data with that method?</li> <li>What is my student’s instructional level?</li> <li>How variable is my student’s performance based on baseline data collection?</li> </ul>

Note. These questions are based on best-practice guidelines (Hosp & Hosp, 2003; Lemons, Kearns, & Davidson, 2014; National Center on Intensive Intervention, 2013; Stecker & Lembke, 2011).

to 6 weeks of data, with multiple data points collected each week (Ardoin, Christ, Morena, Cormier, & Klingbeil, 2013). This is especially true for students who exhibit stable trends in their data—that is, students who perform consistently with the same level of growth over time (Christ et al., 2012; Stecker et al., 2008). However, owing to the potential for variable performance on assessments (i.e., unstable growth over time or unexpected highs and lows in student performance), some researchers suggest basing instructional decisions on at least 20 total data points—for example, 10 weeks of data collection with two data points each week (Christ et al., 2012). This longer-duration and more frequent data collection is especially important for younger students’ oral reading fluency or those with significant reading challenges. These students tend to read fewer words per minute; therefore, deviations in performance are relatively large (Christ et al., 2012).

To decide how many data points may be appropriate for your student, look at the baseline data collected from the first three assessments administered (see Step 1). Look at the data points and ask yourself the following questions:

- “What is my student’s current reading level?” If the student is below a second-grade reading level, collecting more data points may be appropriate. If your student is above a second-grade reading level, you can reduce the number of data points.
- “How variable is my student’s performance?” If your student has variable performance, collecting more data points may be appropriate. If your student has more stable performance, fewer data points are needed.
- “How long am I tracking student data overall?” If you are collecting data over a longer period, you may be able to collect just one data point per week. If you are collecting data for a shorter period, you will want to collect more than one data point per week. See Table 2 for a complete list of questions.

*Ms. Peterson looked at the steps for frequency of progress monitoring. She decided to evaluate Andre’s progress toward his goal after 10 weeks, collecting data twice a week, because she knew that Andre’s scores in classroom assessments were variable and she wanted to be sure that her instruction was supporting Andre in making gains in reading. Ms. Peterson looked at the steps and knew that she now needed to set a goal for Andre.*

grade, 1.0 for third grade, 0.85 for fourth grade, 0.50 for fifth grade, and 0.30 for sixth grade instructional level (L. S. Fuchs et al., 1993; Stecker & Lembke, 2011). In comparison, ambitious goals for ORF growth are 3.0 for first grade, 2.0 for second grade, 1.5 for third grade, 1.1 for fourth grade, 0.80 for fifth grade, and 0.65 for sixth grade (Stecker & Lembke, 2011). For a maze task, growth of 0.4 words correct per week is considered realistic, whereas 0.85 is considered ambitious

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## If you want general outcomes, choose a CBM. If you want specific outcomes, choose a mastery measure.

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### Step 3: Set a Student Outcome Goal

The next step toward progress monitoring is setting a goal for student outcomes. Goals for students should be based on where the student is currently performing and what the expected outcomes are (i.e., achievable levels of growth). The following are guidelines for selecting appropriate goals according to the type of measure being used—either CBM or mastery measure.

#### **Curriculum-based measurement.**

When using CBM, teachers can set either ambitious or realistic goals for student outcomes (L. S. Fuchs, Fuchs, Hamlett, Walz, & Germann, 1993). Ambitious goals are achievable but may require more intensive work to attain. Realistic goals are expected levels of student growth when coupled with well-implemented, evidence-based instruction. Both are practical and appropriate depending on your student, the time that you have to work with your student, the materials in your school, and how comfortable you are with reading instruction methods. Keeping all these factors in mind, teachers can make appropriate decisions on an individual basis.

For example, realistic goals for ORF growth, as measured by increases in words per minute per week, are as follows: 2 for first-grade, 1.5 for second

regardless of instructional level (Stecker & Lembke, 2011). These goals are based on typical levels of growth and therefore applicable across programs that use ORF and maze CBM (Stecker & Lembke, 2011). Table 3 presents realistic and ambitious goals for each instructional level. To compare instruction- and grade-level goals, refer to the National Center on Intensive Intervention website ([www.intensiveintervention.org](http://www.intensiveintervention.org)).

Depending on where a student performs at baseline, teachers will be able to predict where a student should be able to perform after receiving individualized instruction. Using the baseline average and expected weekly growth, teachers can calculate an outcome goal that students should reach by the end of the instructional period by multiplying the weekly growth rate by the weeks of instruction and then adding the student’s average baseline performance. Table 3 provides a sample calculation.

**Criterion mastery.** Criterion mastery goals also help teachers monitor progress. They involve setting a goal based on a student reaching a certain learning outcome (Stecker et al., 2008). To set an appropriate goal for criterion mastery, teachers should first consider the student’s present level of performance as determined by three

**Table 3. Realistic and Ambitious Goals for ORF and Maze With Calculations**

ORF/maze: Instructional level	Goal	
	Realistic	Ambitious
ORF		
1	2.0	3.0
2	1.5	2.0
3	1.0	1.5
4	0.85	1.1
5	0.5	0.8
6	0.3	0.65
Maze: 1–6	0.4	0.85
<i>Calculating goal: baseline + (goal rate × weeks of instruction)</i> <i>Example: 78 (baseline) + [2.0 (goal rate wpm) × 10 (weeks of instruction)]</i>		

*Note.* This table provides realistic and ambitious growth guidelines as recommended by L. S. Fuchs, Fuchs, Hamlett, Walz, and Germann (1993) and Stecker and Lembke (2011). In addition, this table includes a formula and sample calculation of growth goals. ORF = oral reading fluency; wpm = words per minute.

baseline assessments on the selected measure. Then, teachers can determine an attainable but rigorous goal that represents mastery of the skill based on the student’s level and the measurement tool. For instance, with a sight word list, if a student reads 40 words correctly on a baseline assessment, an attainable but rigorous goal for that student might be to read 90 of the first 100 words on the list correctly (i.e., 90% accuracy) before moving on to the next list. For another example, a teacher can set a goal for a student to read regularly spelled single-syllable consonant-vowel-consonant words with 90% accuracy before moving on to more complex words that contain digraphs. To determine whether a student has achieved 90% accuracy, divide the number of words correct by the total number of words in the passage or word list. Students should master each skill before moving on to the next.

**Questions to ask.** To decide what goal is appropriate for your student, first think about what CBM or progress-monitoring tool you are using, as well as the guidelines for student growth. Then, ask the following questions: (a) “Where is my student performing at baseline?”

(b) “How long would I like to track student progress toward a goal?” (c) “What is a realistic goal for this student based on instructional level and the time tracking growth?” (d) “What is an ambitious goal for my student based on instructional level and time tracking growth?” and (e) “What is an achievable but rigorous goal for my student?” Table 2 provides a complete list of questions.

*Ms. Peterson looked at Andre’s baseline performance data. For ORF, Andre was reading on average 78 words per minute and was able to correctly complete an average of 10 items on the maze task. Ms. Peterson checked the goals (Table 3) for ORF CBM and noted that an ambitious goal for a second-grade instructional level was an increase of 2.0 words per minute per week and a realistic goal was an increase of 1.5 words per minute per week. Ms. Peterson thought about Andre’s progress so far and thought that, by continuing with explicit instruction in advanced word study, he could achieve higher fluency. Given her knowledge of Andre’s performance, Ms. Peterson decided to set an ambitious goal. She calculated per the slope that an ambitious fluency goal for Andre*

*would be 98 words per minute by the end of the year: 78 baseline + (2.0 wpm × 10 weeks).*

*Ms. Peterson repeated the process with Andre’s maze scores. She thought about how difficult it seemed for Andre to comprehend text based on small group interactions, work samples, and benchmark assessment data. On the basis of her knowledge of her student and the steps for DBDM, she decided to set a realistic goal for Andre. She calculated 14 words correct for a realistic goal, based on a rate of improvement of 0.4 and Andre’s baseline of 10 words correct.*

#### **Step 4: Graph and Analyze Student Data to Make Instructional Decisions**

Plotting student progress is the key to deciding when and how to adapt instruction to meet student needs. There are several ways to graph student data, as well as several methods for analyzing progress to make decisions.

A scatterplot for CBM includes three main features: (a) x-axis with dates or sessions for collected data points, (b) y-axis with student outcome goals, and (c) individual data points that represent the student’s score for each CBM administered. Once enough data points are collected, a trend line can be drawn to compare the student’s growth with the goal slope. Table 4 presents a step-by-step guide to plotting student data and drawing trend lines. Once a trend line is drawn, teachers can use one of two methods to determine when to make instructional changes: slope method or points-below method.

The **slope method** (see Table 1) entails comparing a student’s progress to a goal line that represents desired instructional gains. This is the most frequently used method to assess student progress with a reading CBM (Jenkins & Terjeson, 2011). There are many advantages to using this method to track growth: (a) the measurement level remains consistent, (b) the data are easily interpreted, and (c) the graph is easy to organize. But there are several disadvantages to note—for

**Table 4. Graphing Procedures for Student Progress-Monitoring Data**

Step	Procedure
1	Plot the average baseline point
2	Calculate realistic or ambitious outcome goal: baseline average + (estimated growth average × weeks monitoring)
3	Plot outcome goal
4	Draw a line from baseline average to outcome goal
5	Collect student data
6	Draw a trend line through the data that best fits the data you see (right through the middle, adjusting for outliers)
7	Use points-below method (are the last three points above, below, or above and below the trend line?) or slope method (does the trend line slope match the outcome slope?)
8	Make a decision to continue or adjust instruction

instance, the student’s instructional level may change, so progress would be based on different levels. In addition, the graph may not be as helpful in deciding what adaptations to make to instruction, as much as when to make those instructional adjustments.

The comparison of the student’s performance slope with an outcome slope can be done visually. For an example of a visual analysis with the slope method, see Andre’s ORF and maze data graphed in Figures 3 and 4, respectively. With the slope method, instructional changes are appropriate when a student performs below the goal line. If a student’s trend line—or the rate of growth seen in the data points—is above the goal line, a higher goal should be set and instruction can continue. If a student’s growth is below the goal line but growth is occurring (i.e., the performance slope is lower than the goal slope), instruction may need to change. If a student is below the growth line and is not making any growth, instruction needs to change. When instructional changes are made, a vertical phase line can be added to visually begin a new stage of instruction. The outcome goal can then be recalculated for the new phase of instruction. In the examples provided, Andre demonstrates response on ORF (Figure 3) and nonresponse on maze (Figure 4).

With the same graphs and instructional goal lines as the slope rule, the **points-below method** (see Table 1) is another way to make decisions based on student data. For this method, if the last three data points are below the goal line, a teacher should make an immediate instructional change (Jenkins & Terjeson, 2011). This method is easier than the slope method, but it may also

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## Teachers need to decide on measurement tools, determine frequency of progress monitoring, set goals, and select a method for making decisions.

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overestimate the progress of some students, especially those with less frequent progress monitoring.

With this method, look at the last three data points collected versus the goal line. If a student is performing below the goal line for all three data points, an instructional change is appropriate. If a student is performing above the goal line for all three data points, a higher goal may be needed. If a student performs above and below the goal line, instruction may stay the same because the student is on target toward one’s goal. As with the slope method, if an instructional change is being made, the addition of a phase line can help to visually separate stages

of the instruction. The outcome goal can then be recalculated for the new phase of instruction. Refer to Figures 3 and 4 for examples of using the points-below method.

Graphing progress for **criterion mastery** involves tracking student progress toward a specific target skill to master before moving forward with instruction (Stecker et al., 2008). A variety of visual representations can track student progress toward criterion mastery, including bar graphs, line graphs, and scatter plots. Note that, with criterion mastery, the measurement tool changes over time according to student mastery and the focus on skills; therefore, comparison of overall student progress via visual representation of criterion mastery is not possible (Stecker et al., 2008).

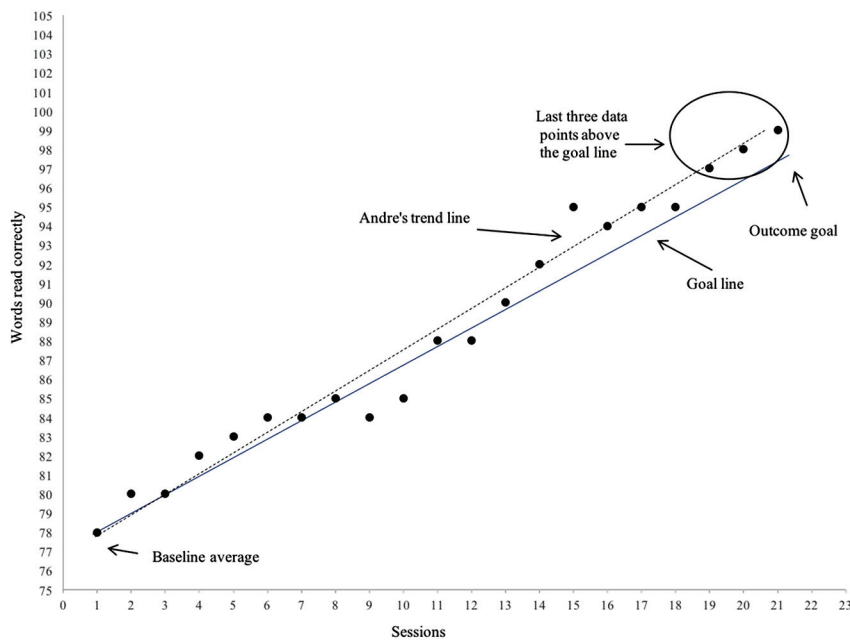
With criterion mastery, deciding when to make instructional changes is fairly straightforward. Once a student achieves the criterion for mastery, a new goal can be set, and instruction can move forward. If a student is not making progress toward the criterion, an instructional adjustment may be needed. For example, if a student has a goal of 90% accuracy on a sight word

list and progress monitoring indicates that she or he is steady at 75% accuracy, an instructional change is needed to meet the goal. If data indicate that the student is steadily progressing toward this criterion, instructional change is not necessary.

**Questions to ask.** To determine what method to use, ask the following questions:

- “What progress-monitoring tool am I using (e.g., ORF CBM, maze CBM, or mastery measure)?”
- “What are the recommended ways to collect data via that method?” If you are using ORF or maze CBM,

**Figure 3. Andre's oral reading fluency progress monitoring**



Note. Based on the points-below rule, instructional change is not needed, because all three data points are above the outcome goal line. Based on the slope rule, Andre's rate of progress is also above the outcome goal, indicating that instructional change is not needed. In both instances, a higher instructional goal may be set.

use the slope or points-below method. If you are using mastery goals, consider bar graphs.

- “What is my student’s instructional level?” If your student is at a lower instructional level, consider the slope method. If your student is performing at a higher instructional level, consider the points-below method.
- “How variable is my student’s performance?” If your student’s performance is variable, the slope method will provide better analysis. If your student’s performance is stable, employ the points-below method. Table 2 provides a complete list of questions for all steps.

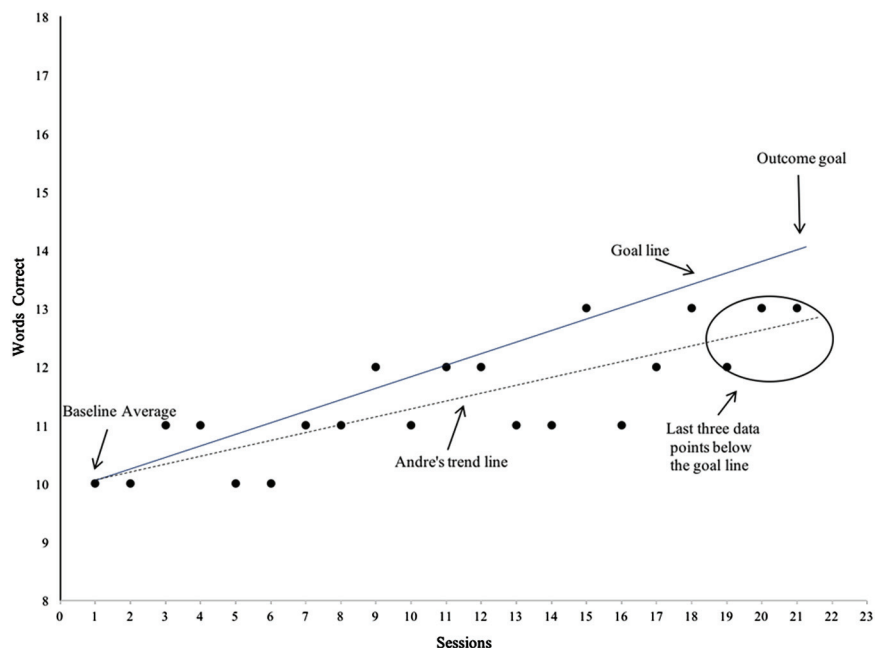
Ms. Peterson used CBM for progress monitoring, so she knew that either the slope method or the points-below method would be appropriate for decision making. She needed to decide which would provide her with a more accurate analysis method. She knew that Andre’s scores were variable during classroom assessments, so the

points-below method was probably not the best way to analyze his data. She decided to use the slope method with a

visual analysis to determine when to make instructional decisions.

Ms. Peterson plotted Andre’s data over the course of 10 weeks. She started by looking at Andre’s ORF (Figure 3). She drew a trend line through his data and saw that Andre’s slope of performance was above the slope for his goal line. Due to his rate of progress, she decided to continue the word study intervention but adjust instructional intensity by increasing the amount of time that he met with her each week—although Andre was making progress, he still had many skills to learn and improvement to make. She calculated a new ambitious goal based on his current performance to continue to ensure that Andre was making adequate progress. Ms. Peterson then checked Andre’s maze score progress (Figure 4). Andre’s slope indicated that he was not making sufficient progress toward his goal. Ms. Peterson decided to administer a diagnostic assessment to see what skills Andre was lacking so that she could refocus his instruction accordingly. She noticed that Andre specifically struggled with inferential questions in informational text, so she decided to

**Figure 4. Andre's maze progress monitoring**



Note. Based on the points-below rule, instructional change is needed because all three data points are below the outcome goal line. Based on the slope rule, Andre’s rate of progress is also below the outcome goal, indicating that instructional change is needed.

adjust the content of her instruction and focus on informational text as she continued to implement the comprehension program for the next phase of progress monitoring.

## Putting It All Together

Using data to make instructional decisions can feel overwhelming when beginning the DBDM process. However, students with persistent and severe reading difficulties require intensive and individualized instruction—as such, it is crucial that teachers utilize student data to determine the appropriateness of their reading instruction. To effectively monitor progress to make instructional decisions, teachers need to decide on measurement tools, determine frequency of progress monitoring, set goals, and select a method for making decisions. Following these steps will help teachers like Ms. Peterson interpret data and make instructional decisions that will benefit students like Andre.

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