Data-Based Individualization in Reading

Intensifying Interventions for Students With Significant Reading Disabilities

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It is a few weeks before the end of the school year. Mrs. Arnold, a special education teacher at Cornelius Elementary, is analyzing the most recent progress-monitoring data for one of her third grade students, Rashan. As she looks at the data she has just plotted on a graph, Mrs. Arnold pauses to reflect. Despite her efforts to increase Rashan's reading skills, the improvements he has made across the school year are inadequate. Mrs. Arnold remembers a presentation that she attended at the annual CEC conference earlier in the year and accesses the website she had written in her notes—www.intensiveintervention.org. She begins to explore the website and wonders whether the recommended approach, data-based individualization (DBI), could help her increase Rashan's reading performance.

Students with persistent and severe reading difficulties, like Rashan, pose a significant challenge for educators. Teachers implementing response to intervention (RTI) models often wonder how to best meet the learning needs of these students. Teachers may wonder: Does the student need another round of Tier 2? Does the student need to be referred to special education? If so, what will special education provide that is different from interventions previously tried in Tier 2? Some of the answers to these questions can be addressed through DBI—an evidence-based, validated process that holds promise for redefining special education for students like Rashan.

In this article, we describe how Mrs. Arnold implemented DBI with Rashan throughout his fourth grade year. We use this hypothetical demonstration to explain how DBI can be applied in the area of reading and to highlight the various decisions required during implementation. We first provide additional background data from Rashan's third grade year. Then, we follow Mrs. Arnold and Rashan through his fourth grade year, examining Mrs. Arnold's implementation of DBI and the adaptations she makes along the way. The primary purpose of this article is to provide you with a detailed demonstration of DBI implementation in the area of reading. We encourage you to familiarize yourself with the DBI process by reading the first two articles in this special issue (Danielson, Wexler, & Rosenquist, 2014; D. Fuchs, Fuchs, & Vaughn, 2014). Additionally, we provide various resources in the article that you may access to learn more about the instructional strategies included in our example.

> **Selecting one primary assessment to determine when an instructional change is necessary decreases complexity.**

Background

As an educator, you are likely familiar with RTI. Most students who need DBI will have demonstrated insufficient response to previous remediation attempts (e.g., Tier 2). Before we learn more about Rashan's background, consider what tools you may have used for a struggling third grade reader. Most often, schools provide

Figure 1. Rashan's Third Grade Progress Monitoring
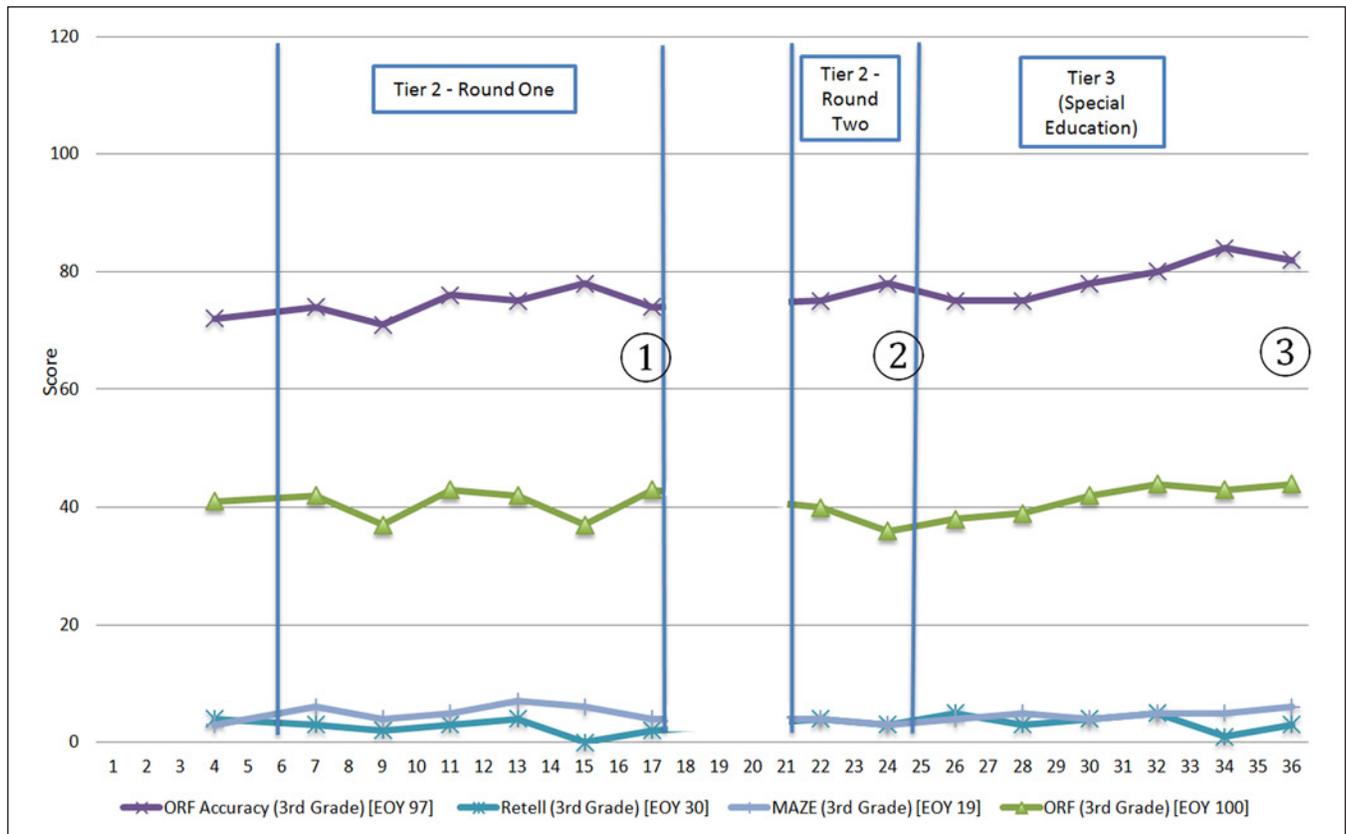
supplemental, small group instruction in which an evidence-based reading program is implemented and in which progress-monitoring data is collected to evaluate response. (See Kearns, Lemons, Fuchs, & Fuchs, in press, for additional guidance on implementing and evaluating Tier 2 interventions.)

Our student, Rashan, enrolled at Cornelius Elementary at the beginning of his third grade year and was referred to the RTI team by Mrs. Ito, his third grade general education teacher, after beginning-of-the-year screening data indicated he was performing well below benchmark on reading curriculum-based measurement (CBM; Hosp, Hosp, & Howell, 2007). Mr. King, the reading specialist, provided Tier 2 supplemental reading intervention to Rashan over the course of the year. He also graphed Rashan's progress-monitoring data (see Figure 1). Mr. King used a scientifically based intervention program designed to improve decoding, reading comprehension, and fluency. Rashan received three 45-minute sessions per

week of reading intervention in a group with four other students. Mr. King monitored Rashan's response to the reading intervention using CBM measures of oral reading fluency (words correct per minute and accuracy), retell, and maze. Rashan's progress-monitoring data indicated poor response to the initial 12 weeks of Tier 2 intervention (see ① in Figure 1). At Cornelius Elementary, students who do not respond to an initial round of Tier 2 intervention receive a second round after the winter break. After 4 additional weeks of Tier 2, Rashan continued to show insufficient response to secondary intervention (see ② in Figure 1). He was evaluated for special education and qualified for services as a student with a specific learning disability.

Mrs. Arnold, the special education teacher, reviewed Rashan's third grade progress-monitoring data at the individualized education program (IEP) meeting. The IEP team wrote goals for Rashan that included increasing his ability to read grade-level passages with

greater accuracy and speed. Mrs. Arnold delivered reading intervention to Rashan in a group of four students, 45 minutes a day, for 2 days per week. Mr. Caprio, her paraprofessional, also provided the intervention 2 days per week. Mrs. Arnold did not use a standardized program. Instead, she used activities adapted from various programs. Activities included repeated reading practice, learning sound-symbol correspondences on flash cards, practice building decodable words with letter tiles, and spelling decodable words. Additionally, the instructors used activities from the second grade core reading program. Rashan made slight improvements in oral reading fluency and accuracy (see ③ in Figure 1). However, as seen when we first met Mrs. Arnold, the improvements were inadequate, and she knew another approach was needed.

After reviewing many of the resources available from the National Center on Intensive Intervention (NCII, www.intensiveintervention.org),

including *Data-Based Individualization: A Framework for Intensive Intervention* (NCII, 2013), Mrs. Arnold scheduled a meeting with her principal, Ms. Soliz, and her special education supervisor, Mrs. Wolf. She shared Rashan's third grade progress-monitoring data with them and explained how DBI could help her intensify the intervention she was providing to Rashan. The principal and supervisor agreed that DBI could benefit Rashan and other similar students. They decided to support Mrs. Arnold's efforts and applauded her willingness to try a new approach to better meet her student's needs during the next academic year.

Applying DBI With Rashan

Preparing to Implement DBI

When you are preparing to implement DBI you should follow the guidance provided by Fuchs, Fuchs, and Vaughn (this issue, p. **X**). Your checklist for getting started will include (a) selecting an instructional platform, (b) determining how to intensify the platform, (c) making a progress-monitoring plan, (d) setting instructional goals, and (e) making final preparations. Resources for learning more about these steps are available at the NCII's website. It may be useful for you to pause for a moment and consider how you might complete each of these tasks.

Checklist for Getting Started With DBI

- Select an instructional platform aligned with student's needs.
- Intensify the instructional platform.
- Make a progress-monitoring plan.
- Set goals for the student.
- Make final preparations for scheduling, fidelity, and data collection.

For Mrs. Arnold, summer went by quickly, but she was excited about the start of the school year. She devoted a portion of the professional development time allotted to teachers in her district prior to the start of class

to learning more about implementing DBI. She watched the "Ask the Expert" videos available from NCII's website and participated in a webinar focused on intensifying interventions. After learning more about the process, her next task was to complete the steps listed on the checklist for getting started with DBI to ensure she was ready to implement it with Rashan.

Selecting an instructional platform. As explained in the opening article to this special issue (Danielson et al., 2014), your first task in implementing DBI will be to select an instructional platform—a standardized intervention that will serve as your initial curriculum for your student. It is important that this intervention be an evidence-based intervention that is aligned with your student's needs. You may have this type of intervention readily available in your school or you may need to conduct some research and purchase a new program.

Mrs. Arnold first considered Rashan's academic needs in the area of reading. Based on data gathered during Rashan's third grade year, Mrs. Arnold knew that his most critical academic needs were in decoding and phonemic awareness. Additionally, Mrs. Arnold wanted to use a program that included components focused on fluency, vocabulary, and comprehension skills. Mrs. Arnold reviewed programs available at her school. She also explored several websites designed to help practitioners select evidence-based practices (see "Internet Resources"). Mrs. Arnold selected an intervention included on NCII's "Academic Intervention Tools Chart" (http://www.intensiveintervention.org/chart/instructional-intervention-tools). She selected the program because (a) it targeted Rashan's academic needs, (b) previous research indicated it had been effective for students like Rashan, and (c) the cost of the program was within her limited budget. Mrs. Arnold ordered the intervention and devoted time to reviewing the manuals and watching the training videos that were included to learn how to implement the program.

Internet Resources

- Best Evidence Encyclopedia: www.bestevidence.org
- Center on Instruction: www.centeroninstruction.org
- Florida Center for Reading Research: www.fcrr.org
- Evidence Based Intervention Network: http://ebi.missouri.edu
- The Meadows Center for Preventing Educational Risk: www.meadowscenter.org
- National Center on Intensive Intervention: www.intensiveintervention.org
- National Center on Response to Intervention: www.rti4success.org
- Promising Practices Network: www.promisingpractices.net
- What Works Clearinghouse: http://ies.ed.gov/ncee/wwc

Intensifying the instructional platform. Your next task in preparing to implement DBI will be to familiarize yourself with the new program and to determine how you can intensify the instructional platform to better meet your student's needs. One excellent resource to help you in planning is written by Vaughn, Wanzek, Murray, and Roberts (2012); it is available at http://www.centeroninstruction.org/. It is important to note that it is okay to select a small number of adaptations to make initially.

Mrs. Arnold reviewed Vaughn et al. (2012) and created a table with recommended adaptations. Next, she considered the reading intervention she had provided to Rashan during the previous year and thought about ways she could intensify her instruction. First, she thought about *quantitative changes.* Rashan had come to her room 4 days per week, 2 days taught by Mr. Caprio, for 45 minutes of reading intervention provided to a group of four students. Mrs. Arnold decided she could intensify Rashan's instruction by providing intervention daily in a smaller group of three students. Mrs. Arnold decided she would work with Rashan 3 days per week and that Mr. Caprio would deliver the intervention 2 days per

week, still for 45 minutes each day. And she also arranged time to ensure Mr. Caprio received professional development to teach the new intervention with fidelity. (For tips on effectively integrating paraprofessionals into reading intervention, see Causton-Theoharis, Giangreco, Doyle, & Vadasy, 2007.) Next, she thought about *qualitative changes* she could make. She decided she would make a change suggested by Vaughn et al. (2012). Her goal was to increase the frequency she provided Rashan with specific feedback (e.g., "I like the way you used the sounds in the word to figure it out," instead of, "Good job.").

Top Five Ways to Use Paraprofessionals Effectively

1. Use paraprofessionals in supplementary roles.
2. Use research-based reading approaches.
3. Train paraprofessionals in the reading approach.
4. Train paraprofessionals to manage behavior.
5. Provide paraprofessionals with ongoing monitoring and feedback.

Source: Causton-Theoharis et al., 2007

Making a progress-monitoring plan. Your next step in planning will be to determine which measures you will use to monitor your student's progress. You should select measures that have demonstrated adequate psychometric properties (e.g., reliability and validity). Additionally, you want to select measures that are likely to be sensitive to the academic gains your student may make. Many schools implementing RTI have CBM measures readily available that would be very appropriate to consider using.

Mrs. Arnold first considered the reading CBM measures that had been used at her school since they had started implementing RTI 3 years ago. She explored NCII's "Progress Monitoring Tools Chart" (http://www.intensiveintervention.org/chart/progress-monitoring) and, based on the

fully filled-in orange bubbles, determined the measures used at her school had adequate psychometric properties. However, Mrs. Arnold was concerned that monitoring Rashan's progress with fourth-grade-level measures would not be sensitive to growth because the measures were too difficult based on his current instructional level. Mrs. Arnold then administered third grade probes. His scores were quite low on these too, so she administered the second grade oral reading fluency and retell measures. Rashan's performance indicated that these measures would be appropriate for monitoring progress because they were at his instructional level. In other words, they were neither too easy nor too hard, which could limit their usefulness in measuring academic improvements. Mrs. Arnold decided she would administer the second-grade-level oral reading fluency and retell measures each week. She also decided to supplement progress monitoring with a phonics inventory she would administer every 4 weeks. This measure would allow her to evaluate whether Rashan had mastered specific sound-symbol correspondences (e.g., *sh* = /sh/; *oi* = /oy/).

Setting goals. Your next task in preparing to implement DBI will be to set goals for your student. Several resources can assist you with setting ambitious yet realistic goals (see L. S. Fuchs & Fuchs, 2007a, 2007b; Hosp et al., 2007). It is important for you to consider all of the data you have collected up to this point as you set goals for your student.

Mrs. Arnold decided the most important goal for Rashan was to increase the number of words he could read correctly in 1 minute on the second grade oral reading fluency measure. She administered three equivalent forms of the second grade passage to Rashan on 3 consecutive days. His baseline (i.e., median) score was 62 words correct per minute. As explained by D. Fuchs et al. (2014; second article in this issue), Mrs. Arnold plotted this data point on the graph on the date corresponding to one

day before she began DBI and drew a dotted vertical line to indicate the setting of baseline performance (see ④ in Figure 2). Mrs. Arnold reviewed resources (L. S. Fuchs & Fuchs, 2007a, 2007b; Hosp et al., 2007) on setting appropriate goals using CBM. She decided an ambitious goal for Rashan would be to read a second grade oral reading fluency passage with 87 words correct in a minute (i.e., the end-of-year goal for second grade provided by the CBM publisher) by the middle of the year (Week 20). She also wanted him to maintain this level of performance for at least 3 weeks. Mrs. Arnold graphed the score of 87 on Rashan's progress-monitoring graph (Figure 2) and connected the goal score with his baseline performance to establish the aimline (see ⑤ in Figure 2). She scheduled an IEP meeting so that the team could revise Rashan's IEP goals to reflect the new plan.

Mrs. Arnold decided she would not set additional end-of-year goals for Rashan on the retell measure or the phonics inventory. Instead, she would use data from these measures to provide her with diagnostic information to plan instruction (e.g., which sound-symbol correspondences to target next). Selecting one primary assessment to determine when an instructional change is necessary decreases complexity. However, Mrs. Arnold could have set goals for all three measures. More than likely, teachers will find it simpler to use fewer measures when they are first becoming familiar with DBI and then increase the complexity of data-based decision making as they gain familiarity with the process.

Making final preparations. Your next task will be to make sure all of the pieces are in place. This will include reviewing your student's schedule, determining how you will evaluate how well you are implementing your plan (i.e., fidelity), and ensuring that you have adequately planned for data collection. All of these components are important to the success of DBI.

Our teacher, Mrs. Arnold, had been quite busy getting ready to implement

Figure 2. Rashan's Fourth Grade Progress Monitoring
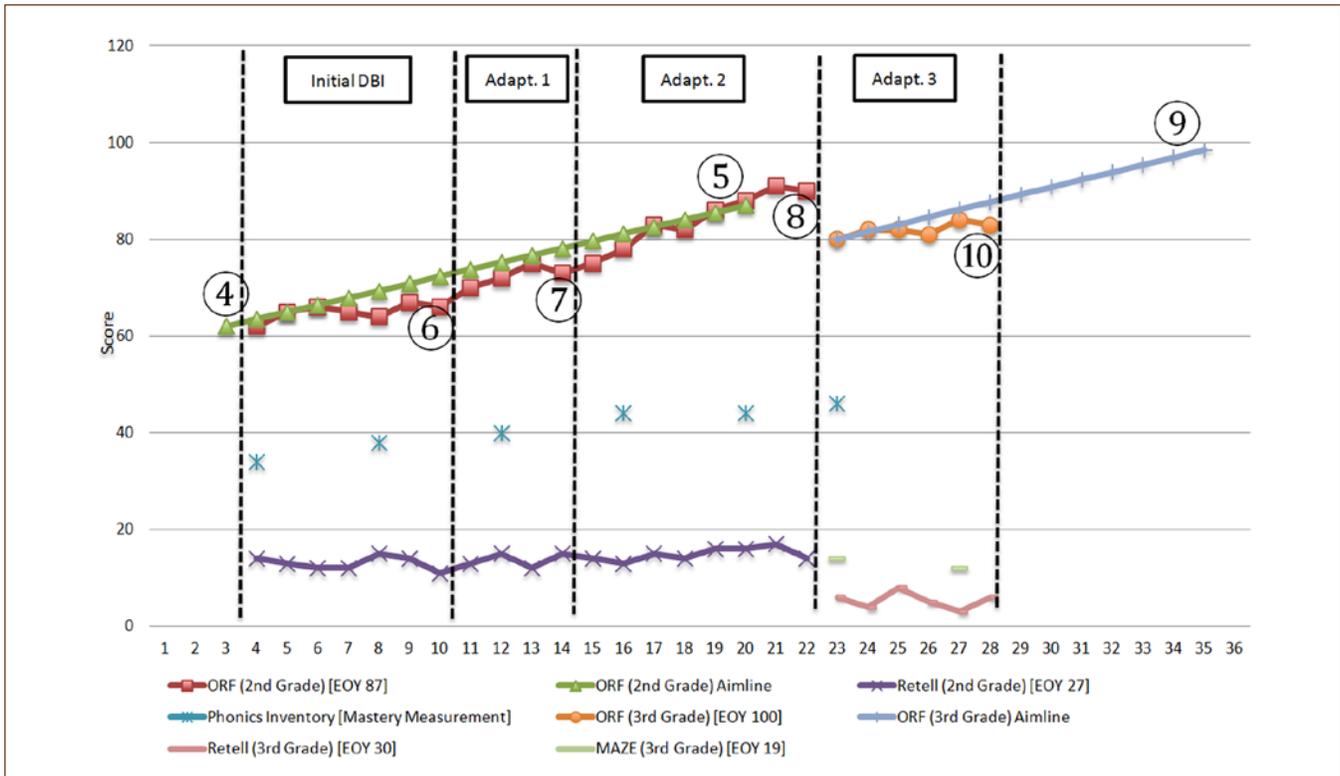
DBI with Rashan. She was prepared to implement the new reading intervention, she was organized to monitor Rashan's progress, and his schedule was arranged. Mrs. Arnold also considered the other two students who would participate in Rashan's reading group. She selected two students who had similar reading difficulties and whom she believed would benefit from the same intervention as Rashan. Mrs. Arnold decided she would implement DBI procedures (e.g., making instructional adaptations if Rashan did not respond) using only Rashan's progress-monitoring data rather than using the data for all three students. She decided this would be manageable because it was her first time utilizing DBI. Some teachers (particularly those who have previously implemented DBI) may choose to implement DBI simultaneously with multiple students who are participating in the same intervention group—the procedures would work the same way, but there would be more data to guide intensification and individualization.

Mrs. Arnold also made a plan to monitor fidelity. The fidelity data would improve her confidence that her plan was being implemented as designed. As a result, if Rashan did not respond to her intervention, she would be sure it was not due to a poorly implemented plan. She also knew fidelity might look differently for DBI than it did for Tier 2

Academic diagnostic assessment can be collected from standardized measures or error analysis of progress monitoring and student work.

in her school's RTI model (Kearns et al., in press). Fidelity for DBI includes two components—*fidelity of intervention* (Is the instruction being delivered as intended?) and *procedural fidelity* (Are the various DBI procedures [e.g., when and how to adapt intervention, data collection schedule] being followed accurately?). For fidelity of intervention, Mrs. Arnold asked the school's reading specialist, Mr. King, to observe her

reading instruction twice during the first few weeks of DBI implementation and then one time per 6 weeks after this to ensure she was delivering the intervention accurately. Also, she scheduled observations of Mr. Caprio delivering the intervention once every 6 weeks. To document procedural fidelity, Mrs. Arnold decided both she and Mr. Caprio would keep logs in which they would report each day's activities, whether they were able to complete the lesson as planned, and data on Rashan's attendance and engagement. Finally, she asked the principal, Ms. Soliz, and Rashan's fourth grade general education teacher, Mr. Russell, to meet with her once every 6 weeks to review the data and confirm she was following the DBI plan she had developed. Mrs. Arnold finalized preparation by creating a fidelity monitoring checklist.

Evaluation of Progress

Once you begin implementation of DBI, your next step will be to evaluate your progress. This will include an evaluation of how well you are implementing your DBI plan *and* an

evaluation of your student's response to your intensified intervention. Both aspects are necessary so that you can determine whether your plan is working as you intended.

Mrs. Arnold was able to start implementing DBI with Rashan in the fourth week of school. She had two priorities: She would make sure she was implementing DBI with fidelity, and she would evaluate Rashan's response weekly by examining his progress-monitoring data.

To evaluate the fidelity of Mrs. Arnold's intervention delivery, Mr. King conducted two observations during Weeks 5 and 6. Mr. King had familiarized himself with the intervention and had worked with Mrs. Arnold to create an observation checklist to capture essential components of the intervention. Additionally, he created a data sheet to record the frequency with which Mrs. Arnold provided specific feedback during his observation. Mrs. Arnold earned a high score on the observation checklist and had increased her initial frequency of providing specific feedback compared to baseline data she had collected before starting DBI. Mr. Caprio, however, had some confusion about how to correctly administer certain elements of the intervention during his first observation. Mrs. Arnold provided him with additional instruction and modeling and, during his second observation, Mr. Caprio scored very high on the observation checklist. He also provided frequent specific feedback to Rashan.

To monitor procedural fidelity, Mrs. Arnold and Mr. Caprio described the lesson content, indicated whether they finished the lesson, and noted Rashan's attendance and engagement in their daily logs. Mrs. Arnold met with Ms. Soliz and Mr. Russell at the end of the first 6-week grading period to review her implementation of DBI. Rashan had attended her reading group every day, and he appeared to be engaged with the new intervention. He had also demonstrated some progress on the second grade oral reading fluency measure. Based on the daily logs and a review of the data, both agreed that Mrs. Arnold was implementing DBI as she had planned.

However, in Week 10, Mrs. Arnold observed that Rashan's progress-monitoring scores for oral reading fluency fell below his aimline (see ⑥ in Figure 2). As described by D. Fuchs et al. (2014, this issue), 4 consecutive weeks of performance below the aimline indicate the need for an instructional adaptation. Mrs. Arnold knew she needed additional information to help her decide how to adapt Rashan's instruction. She reviewed the guidance on implementing DBI (NCII, 2013) and determined she should administer diagnostic assessments to guide her adaptation efforts.

Diagnostic Assessment

If your student's response to your intensified intervention is not adequate, your next task will be to administer diagnostic assessment. Academic diagnostic assessment can be collected from standardized measures or error analysis of progress monitoring and student work. These data can help you determine the nature of the adaptation that may be necessary to increase student responsiveness. You will first plan your assessment strategy, then you will analyze the results.

Assessment plan. Mrs. Arnold decided she would gather additional diagnostic data from three sources: (a) an error analysis of the last two administrations of the oral reading fluency probes and the phonics inventory; (b) administration of two

standardized reading assessments (i.e., Word Identification and Word Attack subtests from the Woodcock Reading Mastery Test–Revised [WRMT-R; Woodcock, 1998] and the Elision subtest from the Comprehensive Test of Phonological Processing [CTOPP; Wagner, Torgesen, & Rashotte, 1999]); and (c) a review of the daily logs to note activities that appeared to increase Rashan's motivation. Mrs. Arnold gathered the assessments she had already administered and scheduled a time to administer the WRMT-R and CTOPP to Rashan prior to the end of the week.

> **Data-based individualization has the potential to redefine special education as a service in which expert instructors deliver intensive, individualized, clinical teaching to students with disabilities.**

Assessment results. Mrs. Arnold and Mr. King reviewed Rashan's diagnostic assessment results together. For the standardized tests, Rashan scored at the 37th percentile on the CTOPP Elision. On this assessment, children say words by removing a syllable or sound (e.g., "Say *cowboy* without saying *cow*"). Rashan scored at the 23rd percentile on the WRMT-R Word Identification subtest (sight word reading) and at the 8th percentile on the Word Attack subtest (nonsense word reading). Mrs. Arnold and Mr. King noted that Rashan had performed in the average range on phonological awareness—a major change from prior assessments—and that his sight word reading skills were much stronger than his decoding skills. On oral reading fluency assessments, Rashan often misread words by replacing them with unrelated words that started with the same letter. They also noticed he tended to make these mistakes on polysyllabic words, even decodable ones. The data from the logs showed that Rashan tended to dislike

lessons that included more difficult word reading tasks. On the phonics inventory, Rashan knew all of the letter names, all consonant digraphs (e.g., *sh*), and most vowel digraphs (e.g., *oi*). This was an improvement from prior assessments. The logs also indicated he enjoyed reviewing the vowel sounds. However, he did not know multiple sounds for individual vowels (i.e., the short sound, /a/ for *A* in *cat*, and the long sound, /ā/ for *A* in *major*).

Intervention Adaptations

After you collect diagnostic assessment data, your next step will be to determine how you will adapt your intervention to enhance its effectiveness. You will be using multiple data sources, including progress monitoring, diagnostic assessment, data from previously implemented interventions, and your ongoing interactions with your student. As described in the opening article of this issue (Danielson et al., 2014), the adaptations you make may be qualitative or quantitative. The important thing is that you are making systematic adaptations that are based upon data you have collected. This is an ongoing, iterative process—and there is not always one "best" way to get started. If possible, you should work with a colleague or a team as you begin the process. However, even if you implement DBI on your own, the process of adapting instruction when your student demonstrates poor response will likely result in greater academic gains for your student than if you had not implemented DBI. Next, we will follow Mrs. Arnold as she goes through several phases of adaptation. It may be useful for you to pause at the end of each adaptation and consider what you would try next with Rashan.

Adaptation One: Improving word recognition skills. Mrs. Arnold had a clear picture of Rashan's needs from the diagnostic assessment results. Mrs. Arnold reviewed several resources on teaching reading that she had used in graduate school. (See "Mrs. Arnold's Top Three Resources for Strategies to Adapt Reading Instruction."

We recommend these resources to teachers who want to learn more about the strategies discussed in this article.) First, Mrs. Arnold planned *quantitative changes*. She decided to work with Rashan one-to-one for 10 minutes of the 45-minute lesson each day because he needed explicit decoding instruction and because her expertise would ensure he learned the content with great efficiency and effectiveness. Mr. Caprio would work with the other two students during this time. The rest of the lesson would still occur in a group of three, and Rashan would continue to receive small group instruction from Mrs. Arnold for 3 days and from Mr. Caprio for 2 days.

Mrs. Arnold also planned additional *qualitative changes*. First, she decided to reorder some lessons. The diagnostic assessment demonstrated that Rashan rarely attempted to decode words, especially polysyllabic ones. However, polysyllabic reading techniques would not be introduced in the instructional platform for 15 more days. Mrs. Arnold decided to teach the content from these lessons to Rashan one-to-one before she taught these lessons to his small group. Second, she decided to create precise, simple language to teach polysyllabic word reading. The

instructional platform provided instruction on open and closed syllables and how to use them to read polysyllabic words. However, the instructions were very complicated and did not include specific language she could repeat. Mrs. Arnold decided to provide her students with a simple explanation based on an instructional adaptation on the NCII website. She wrote this simple instructional script to help her explain the concept clearly during the lesson:

> Here is how you can figure out what a vowel should say: When a vowel letter is by itself, it might say the long sound, short sound, or /u/. Try each one and figure out which makes a real word.

This script is simple, clear, and short. Mrs. Arnold could repeat this phrase every time Rashan was trying to decode a polysyllabic word, and he could learn to repeat it himself. Third, Mrs. Arnold included an instructional model each time she practiced with Rashan. Mrs. Arnold modeled polysyllabic word reading while repeating her precise, simple language. Then, she had Rashan repeat her model. Finally, Mrs. Arnold included fluency-building activities. She had Rashan recite the pronunciations of prefixes and suffixes. She also had Rashan provide the three potential pronunciations for nonsense syllables (e.g., *li* = /lĭ/ as in *linen*, /lī/ as in *lion*, and /lə/ as in *pollinate*) to further reinforce the polysyllabic word reading strategy.

Evaluation of Adaptation One. Mrs. Arnold continued to follow her fidelity plan and implementation of DBI was going as planned. Mrs. Arnold charted Rashan's passage fluency and retell performance every week. After 4 weeks of Adaptation 1, Rashan had four consecutive points below the aimline (see ⑦ in Figure 2). Mrs. Arnold noticed that Rashan was applying many of his decoding skills and increasing his reading accuracy, but his fluency rate was still below the aimline. Retell scores showed no sign of improvement. These data

meant Mrs. Arnold needed to make an adaptation. Because both fluency and retell were weak, Mrs. Arnold thought she should continue to work on decoding but add fluency and comprehension instruction. She drew a vertical dotted line on the graph to show she would begin a new adaptation.

Adaptation Two: Increasing reading fluency and comprehension. Because the first adaptation yielded a positive impact, Mrs. Arnold continued implementing the decoding components of the lesson with few changes. Adaptation Two included the addition of instructional components to improve Rashan's fluency and comprehension. Mrs. Arnold first considered *quantitative changes* and decided to lengthen the instructional period. Previously, Rashan came to work with her for 45 minutes. Mrs. Arnold discussed Rashan's schedule with Mr. Russell, Rashan's fourth grade teacher, and they agreed to allow him to come to her classroom for 60 minutes each day. She also increased the time Rashan received one-to-one instruction from her from 10 minutes to 20. She decided that because she had prior professional development on developing word recognition and reading fluency and extensive classroom experience, she could provide support Mr. Caprio could not. She thought that additional time with her on word recognition and fluency skills would give him the boost he needed to get his fluency scores closer to the aimline. In the small group, Rashan continued to work with Mrs. Arnold for 3 days and Mr. Caprio for 2 days.

Mrs. Arnold also made *qualitative changes*. For fluency, she had Rashan practice repeated readings with one of the other children in his small group. Each child read for 5 minutes, and the other child followed along and corrected mistakes. After this, she had each child do three 30-second readings from the same text. She also designed a motivation system to promote fluency. Rashan and the other children compared their first timed readings of

the text to their second and third readings. Mrs. Arnold had the children graph their scores for their best timed reading because she expected self-monitoring to be motivating. She also had them add a star sticker to that day's bar on the graph if their second or third reading was faster than the first. For comprehension, Mrs. Arnold focused on Rashan's retell skills. Each day, she read aloud, and Rashan followed along in his own copy. She then modeled retelling for Rashan and explained how she made retell decisions. In the first lesson, she repeatedly modeled retelling. She also had Rashan repeat the last retelling. In subsequent lessons, she modeled retelling (describing the events in the text in order, e.g., "First…next…") for the first page. On the following pages, she provided a partial model and had Rashan complete them for her. She planned to allow Rashan to explain his own retell process in his own words and release responsibility to Rashan as he showed improvement.

Data-based individualization is a validated, ongoing, and dynamic *process*, and not a specific intervention or program.

Evaluation of Adaptation Two. Rashan now showed progress in fluency, reaching the second grade benchmark and maintaining this performance for 3 consecutive weeks (see ⑧ in Figure 2). On the phonics assessment, Rashan knew all but two of the phonics skills, so she decided to stop administering that measure. Overall, the strategies for polysyllabic word reading and the fluency practice had had the desired effect. Rashan was proud of his progress, and so was Mrs. Arnold. Mrs. Arnold decided to switch to third grade fluency passages for monitoring Rashan's progress because he was performing above the end-of-year second grade benchmark. She administered three passages on 3 consecutive days to estimate Rashan's

baseline performance of 80 words correct. She then set a new goal for Rashan, the end-of-year third grade benchmark of 100 correct words per minute. She graphed his new aimline on his progress-monitoring chart (see ⑨ in Figure 2). Unlike decoding and fluency, retell showed no progress. Mrs. Arnold realized Rashan needed a new comprehension adaptation. She also added another comprehension measure, the third grade MAZE, to measure his comprehension growth. Then, she drew another vertical dotted line on the progress-monitoring chart to show she was starting another adaptation.

Adaptation Three: Focus on comprehension. Mrs. Arnold made no changes to the decoding and fluency parts of her program given the excellent progress there. For the adaptations to the comprehension component, she first selected new books that she thought would motivate Rashan and gave him text choice, allowing him to select the order in which they read the books. In addition, Mrs. Arnold decided to focus less on retell and more on the main ideas in the text. She had learned about the paragraph shrinking strategy that is part of Peer-Assisted Learning Strategies (D. Fuchs, Fuchs, Mathes, & Simmons, 1997) and decided to have Rashan shrink several paragraphs during each reading. She decided making main idea statements for short sections of text was more sensitive to Rashan's difficulty remembering things than retelling whole pages or chapters. She still wanted Rashan to practice retelling, so she added a retell component to the fluency activities Rashan did with the small group. Finally, she wanted to teach him to become more aware of his own reading performance. She reviewed the online module recommended by Vaughn et al. (2012) on helping students become independent learners. The module recommended self-monitoring. Following the guidance provided in the module, she decided she would teach Rashan how to complete a tally sheet in which he would report

whether he was reading carefully and understanding what he was reading (see http://iris.peabody.vanderbilt.edu/sr/cresource.htm for additional detail). In the scheduled meeting with Ms. Soliz and Mr. Russell to review fidelity of implementation, both agreed that the planned adaptations were appropriate. Ms. Soliz indicated that she was impressed with Mrs. Arnold's adherence to the fidelity plan.

Evaluation of Adaptation Three. Mrs. Arnold continued to monitor Rashan's progress every week. In Week 28, Mrs. Arnold had to re-evaluate Adaptation 3 because Rashan had four points below the aimline (see ⑩ in Figure 2). His prior progress had been quite good and there were some signs of progress on retell, but Rashan's MAZE scores were flat. Mrs. Arnold believed many elements of Rashan's plan were good ones, but the data indicated additional adaptations might make an even bigger difference.

Summary. It is clear the adaptations described made a difference for Rashan. If you look back at Rashan's progress-monitoring data from his third grade year, you will see he finished the year reading fewer than 60 words correct on oral reading fluency. If Mrs. Arnold had not tried a new approach and adapted her instruction, it is likely his performance would have remained near this level at the end of his fourth grade year. This new approach led Rashan to make substantial gains in reading, narrowing his achievement gap. However, it is clear that more adaptations are necessary; it is likely that ongoing adaptations will remain a necessity for many students like Rashan. We ask you to pause for a moment, review the adaptations Mrs. Arnold made, and consider what you might suggest to Mrs. Arnold to assist her in enhancing Rashan's comprehension.

Conclusion

We have provided a detailed demonstration of what DBI implementation might look like in the area of reading. We intend for this

Tips for Implementing DBI

1. Gain familiarity with the components of DBI by reviewing various resources (e.g., resources available on NCII website, articles referenced throughout this special issue) and devote an appropriate amount of time to developing a well-specified plan that incorporates all elements of the DBI process.
2. Use both quantitative and qualitative data to guide decisions and gather additional data as necessary.
3. Monitor fidelity of implementation by writing down the steps of your DBI plan and collaborating with colleagues to assist you in evaluating progress. Fidelity should focus on high-quality instructional delivery *and* correct procedural implementation of the DBI process.
4. Start with a manageable number of students and/or progress-monitoring measures. Increase the number of students and/or progress-monitoring measures as you become familiar with the DBI process.
5. Understand that DBI is an ongoing process, not a one-time fix. Many students may need a prolonged period of DBI to make meaningful gains.

hypothetical example to highlight the feasibility of implementing DBI and we provide some additional suggestions in "Tips for Implementing DBI." Although DBI may require additional work, the effort is well worth the potential improvements in student outcomes. We have shown several exciting aspects of using this process to intensify interventions. These include the opportunity to think creatively about instruction, to use data to see how adaptations affect student performance, and to make new changes to maximize benefits for students. It is worth noting that, although Mrs. Arnold's efforts were commendable and Rashan made good progress, he did not reach a level where he was able to work in grade-level texts. Students with persistent or severe deficits will likely need multiple years of intensive intervention, and special educators and their students should be commended when data demonstrate substantial change in academic outcomes over the course of an academic year—even if this performance is below that of same-age, typically developing peers (Lemons, Kloo, & Zigmond, 2011).

DBI is a validated, ongoing, and dynamic *process*, and not a specific intervention or program. Our hypothetical example involving Mrs. Arnold and Rashan demonstrated the iterative process of using data to guide instructional adaptations in an effort to enhance student outcomes. Teachers implementing DBI may make different choices when presented with similar data. For example, Mrs. Arnold could have administered additional diagnostic assessments along the way or she could have selected different adaptations to her intervention. Thus, there will be variation in what DBI looks like for each student. This flexibility means that DBI can be adapted to fit into a wide range of schools as long as the core components of the process remain intact. The important thing to remember is that this process has been validated through multiple studies (D. Fuchs, Fuchs, & Compton, 2012; D. Fuchs, Fuchs, & Stecker, 2010).

DBI has the potential to redefine special education as a service in which expert instructors deliver intensive, individualized, clinical teaching to students with disabilities. This evidence-based process holds promise to substantially improve outcomes for students who have failed to respond to previous remediation efforts. We encourage special educators to familiarize themselves with the DBI process and to incorporate it into their instructional practice. As explained by Zigmond and Kloo (2011), special education *should* be different than general education because "special education is predicated on intensive, specially designed instruction to meet

each individual student's specific learning needs" (p. 160). DBI is an empirically tested, feasible method for ensuring the services provided to students with disabilities remain *special*—increasing the likelihood that academic goals will be achieved.

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