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Opportunities to Respond: A Key Component of Effective Instruction

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Both general and special education teachers face a variety of challenging student behaviors that interrupt instruction and impede learning. Teachers tend to rely on redirections and reprimands to address these student behaviors (Haydon & Musti-Rao, 2011; Madsen, Becker, & Thomas, 2001). Unfortunately, relying on consequences may contribute to a cycle of negative teacher behavior and challenging student behavior (Conroy, Sutherland, Snyder, & Marsh, 2008; Gunter, & Coutinho, 1997; Scott, Nelson, & Liaupsin, 2001), and result in a chaotic, noisy, and disorganized classroom environment. Instead, teachers should employ proactive classroom management strategies described throughout this special issue.

Effective instruction is a key component of successful classroom management and includes practices that maximize the likelihood of student participation, active responding, and correct responding while minimizing errors (Scott et al., 2001). Researchers have established the connection between effective instruction and (a) increases in desired student behaviors, including classroom participation, on-task behavior, and academic performance, and (b) decreases in undesired student behaviors (e.g., calling out, walking around; Engelmann & Carnine, 1991; Gunter & Denny, 1998). One effective instructional strategy is providing high rates of opportunities to respond (OTRs; Sutherland & Wehby, 2001).

An OTR is an instructional strategy (e.g., asking a yes/no question) that promotes student

responding (e.g., holding thumb up for “yes” and thumb down for “no”). OTRs may be conceptualized in a direct-instruction model (e.g., Carnine, 1976) as part of a learning trial. A learning trial consists of a three-term, antecedent–behavior–consequence (ABC) sequence (Skinner, Fletcher, & Hennington, 1996). An example of a learning trial is when a teacher presents a spelling word on a flash card (antecedent OTR), the student recites the word aloud (behavior), and the teacher then says, “Correct answer” (consequence; Skinner et al., 1996). A diagram depicting the process is provided in *Figure 1*. As seen in *Figure 1*, a teacher asks a question (antecedent), a student responds (behavior), followed by teacher feedback (consequence). Although the learning trial is a useful model, OTRs can be provided across a variety of instructional approaches. More broadly, OTRs include any teacher-delivered instructional stimuli (e.g., questions, prompts, cues) that occasion various forms (e.g., verbal, gestural, or production) of student response (Ferkis, Belfiore, & Skinner, 1997).

What Are the Benefits of High Rates of OTRs?

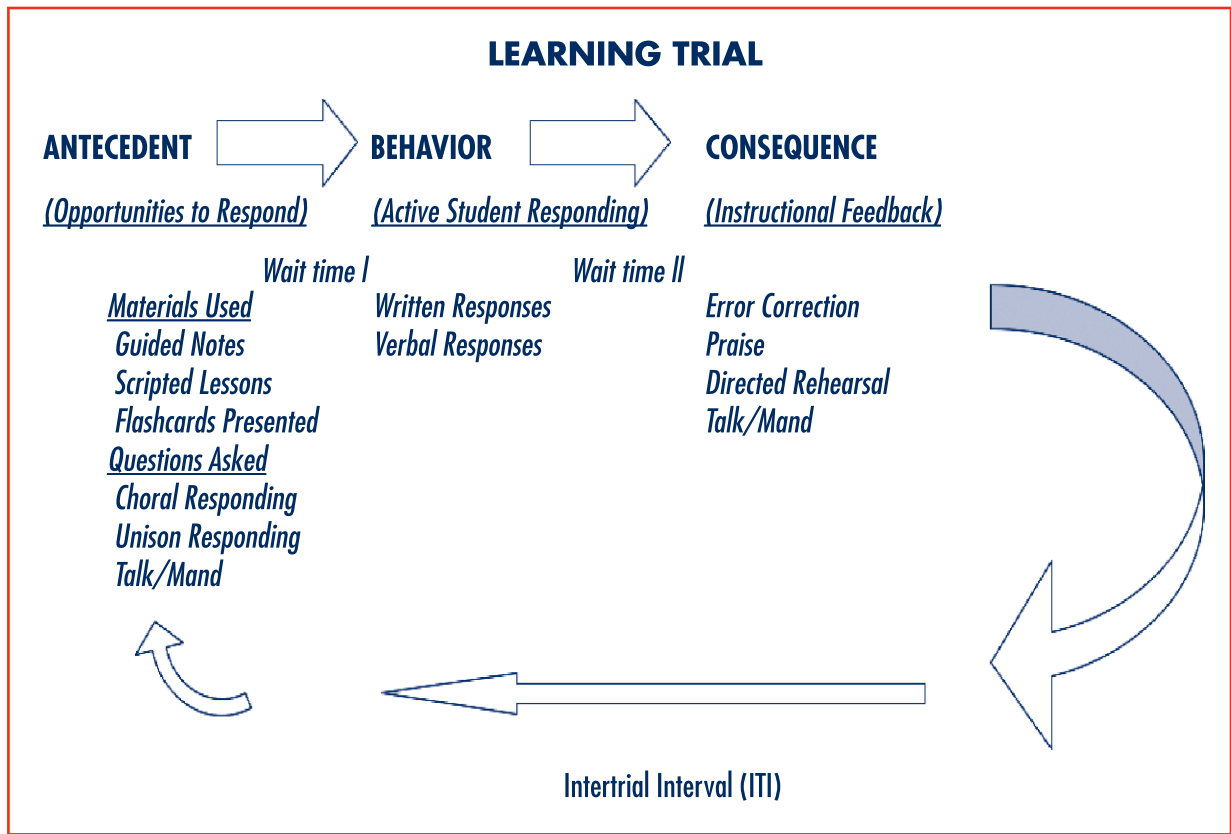
In general, research has shown that increasing the rates of OTRs in a classroom leads to positive outcomes for students, including increases in desired social behavior, decreases in undesired social behavior, and increases in academic performance. Despite these positive findings, descriptive studies have demonstrated that not all students receive equal chances of OTRs. In particular,

students with or at risk for developing emotional or behavioral disorders (EBD) receive fewer OTRs than their peers. The following bullet points summarize the key findings of research on increasing OTRs with students with EBD and other disabilities.

- Students at risk for developing challenging behaviors (Gunter, Jack, Shores, Carrell, & Flowers, 1993), at high risk for aggression (Van Acker, Grant, & Henry, 1996), or who engage in problem behavior (Carr, Taylor, & Robinson, 1991) receive fewer OTRs than their peers who are less at-risk.
- When students with or at risk for EBD struggle with learning academic content, they benefit from increased OTRs (Haydon, Marsicano, & Scott, in press; Sutherland, Alder, & Gunter, 2003; Sutherland & Wehby, 2001). Higher rates of OTRs are associated with increased on-task behavior, decreased disruptive behavior, and improved performance in reading and math (e.g., Sutherland and Wehby, 2001).
- Not all OTRs are created equal: choral responding (when all students verbally respond simultaneously) may result in greater increases in on-task behavior than individual responding (one student at a time; Haydon et al., in press), perhaps because more students experience increased OTRs (Godfrey et al., 2003; Haydon et al., 2010; Kamps, Barbeta, Leonard, & Delquadri, 1994; Sindelar et al., 1986).

In sum, providing high rates of OTRs is an effective instructional strategy to increase on-task behavior,

Figure 1 THE LEARNING TRIAL



decrease off-task and disruptive behavior, and improve academic outcomes for students with EBD. From a teacher’s perspective, the benefits of providing higher rates of OTRs include increased time spent in learning activities, improved student relationships, and decreased time spent dealing with disruptive behaviors (Gettinger, 1995). From a student’s perspective, benefits include being successful and enjoying instructional activities, having little or no incentive to disrupt class, and fewer instances of being removed from the classroom (Gunter, Hummel, & Conroy, 1998).

What Types of OTRs Can Be Implemented in A Classroom?

Given the benefits of increased OTRs, teachers should incorporate a variety of OTRs in their classroom instruction. In *Figure 2*, an overview is presented of common OTR strategies and ways to modify those strategies

for integration into lesson plans. Generally, OTRs can be grouped into three categories: teacher-directed individual responding, teacher-directed unison responding, and classwide peer tutoring.

Teacher-Directed Individual Responding

Teachers often rely on individual responding (e.g., traditional question and answer approach) as a primary mode of providing OTRs. An example of individual responding is when a teacher asks for a volunteer to answer a question, “Who can tell me the capital of Utah?” However, one caution for using individual responding is that students are required to passively attend for relatively longer periods until their next turn. During this extended wait time students at risk for EBD tend to exhibit off-task and disruptive behavior (Godfrey et al., 2003; Haydon et al., 2010). Furthermore, some students who are called on

individually may not know the answer or do not like to be singled out. Because individual responding does not allow all students to experience high rates of OTRs, teachers who enjoy individual responding should consider implementing mixed responding—a combination individual and unison responding. Researchers have recommended using a ratio of 70% unison to 30% individual responding (Haydon et al., 2010; Stevens & Rosenshine, 1981).

Teacher-Directed Unison Responding

When implementing unison responding, teachers can request verbal responses (choral responding), gestural responses (e.g., unison hand raising, thumbs up/down), or production responses (e.g., response card, written responses). Choral responding is a way to get an entire class to actively participate during large group instruction (Haydon, Mancil, & VanLoan, 2009). During

Figure 2 MENU OF OPPORTUNITIES TO RESPOND

Menu of Opportunities to Respond		
Specific OTR Strategy	Brief Strategy Description	Ways to Modify the Strategy
Teacher-directed Individual Responding*	A single student is given the opportunity to respond to a teacher directed question/task/etc.	<ul style="list-style-type: none"> • Call on individual students with increased frequency • Utilize a round-robin method of individual response opportunities so all students are given a minimum OTR
Teacher-directed Unison Responding*	All students are given the opportunity to simultaneously respond to a teacher directed question/task/etc.	<ul style="list-style-type: none"> • Unison handraising • Non-verbal choral response (e.g., thumbs-up/down, holding up fingers) • Use of low-tech individual student response systems (e.g., response cards, white boards, guided notes) • Use of high-tech individual student response systems (e.g., iPads, clickers, computer assisted response systems)
Classwide Peer Tutoring (CWPT)	Students work together in pairs to provide each other with opportunities to respond and contingent feedback	<ul style="list-style-type: none"> • Differentiate student materials based on present levels of performance across groups • Adjust the length of the tutoring interaction (e.g., consider opportunities to respond that are similar to CWPT like “think-pair-share” that can be completed quickly vs. full peer-tutoring activities extending approximately 20 minutes)

***Note:** A combination of teacher-directed individual responding and teacher directed unison responding is known as teacher-directed mixed responding. Research indicates that mixed responding is most effective when it occurs at a ratio of 30% individual response to 70% unison response.

choral responding all students verbally respond to teachers questions. For example, a teacher can cue the entire class (e.g., “Class, what is 8 times 7?”). There are several benefits of using choral responding from a teacher point of view. One is that they can assess if students understand a question by listening to the choral response. Second, teachers can observe a particular student

within the group and determine if that student has verbalized a correct or incorrect response. Third, teachers can provide corrective feedback to an individual incorrect response without singling out any particular student. Benefits for students include receiving immediate feedback regarding their responses, clarifying lesson content without having to admit that they do not understand in

front of an entire class, engaging in additional practice, and spending less time passively attending and waiting until their next turn (Haydon et al., in press; Heward, 1994).

As an alternative to choral responding, teachers can request nonverbal responses like unison hand raising (Haydon & Hunter, 2011; McKenzie & Henry, 1979). During unison hand raising students silently

respond by raising their hand, fingers, or thumbs up or down to indicate a correct response. For example, a teacher says during a math class, “Use a thumbs up or down if you think this is a right triangle.” Unison hand raising is an effective instructional practice in maintaining and sustaining attention of students in a general education classroom setting while allowing the teacher to monitor each student’s understanding of each question (McKenzie & Henry, 1979). For example, Haydon and Hunter (2011) coached a seventh grade teacher to increase her rates of OTR by implementing unison responding. During unison responding, the students simultaneously raised their fingers to indicate multiple-choice answers to questions projected on an overhead projector during a health science lesson. The results of the study showed that students exhibited increased on-task behavior, increased quiz scores, and decreased disruptive behavior during unison responding than during individual responding.

Another alternative to choral responding is individual responding followed by unison responding. During this mode of instruction the teacher calls on an individual student for an answer and asks the whole class to give thumbs up if they agree or thumbs down if they disagree. For example, a teacher can ask, “If you think Peter is correct use a thumbs up. If you think he is incorrect use a thumbs down.” In this scenario it is important for teachers to ensure that the student knows the correct answer in order to avoid any embarrassment in front of peers.

In addition, teachers may use response cards to request nonverbal unison responses from students. Response cards allow multiple students to communicate their individual understandings to their teacher. Teachers can provide students with low-tech (e.g., white boards, preprinted response cards, scrap paper, guided notes) or high-tech (e.g., computer-assisted instructional aids such as the Student Response System

[SRS], iPads) systems of response in whichever format most appropriately integrates into their setting. For example, a teacher could use a smart board at the front of the classroom to display a mathematics word problem. Underneath the problem displayed, students are provided with four possible multiple-choice answers. Students then use an individual clicker to indicate the answer each believes to be correct. The percentage of each answer chosen is automatically displayed on the smart board, providing both teacher and students with immediate, specific, and contingent performance feedback. Based on this information, the teacher is able to easily make relevant real-time instructional decisions. A low-tech alternative would be for the teacher to write the problem on the white board, ask students to write their answer on individual white boards, and ask students to simultaneously hold up their white boards for teacher review and feedback.

Classwide Peer Tutoring

Classwide peer tutoring (CWPT) is a specific application of cooperative learning that engages students in peer-mediated teaching. For a step-by-step guide for implementing CWPT readers may refer to the practice alerts on CWPT at www.TeachingLD.org. CWPT involves students working together in teacher-learner pairs on a classwide basis (Kamps, Dungan, Leonard, & Daoust, 1994). Students are assigned to roles (i.e., student or tutor), paired in peer-tutoring groups, and directed to engage in a learning activity that requires the “student” to perform an academic task while the “tutor” provides feedback (Greenwood, 1997). Tutors reinforce students’ appropriate behavior during tutoring sessions with points, which can later be used to gain access to preferred activities or tangible rewards (Greenwood, 1997). Use of this strategy requires preteaching of the expectations for CWPT as well as careful preparation of appropriately

leveled tutoring materials to ensure student success. CWPT has been shown to increase student engagement during instruction, improve student achievement, reduce the number of students needing special education services by seventh grade, and decrease the number of dropouts by 12th grade (Greenwood, 1991; Greenwood, 1997; Greenwood, Delquadri, & Hall, 1989).

What Strategies Help Teachers Increase OTRs In Their Classroom?

Given the benefits of increased OTRs and the various ways to implement OTRs, teachers may need guidance about how to integrate this practice into their teaching. The following sections provide suggestions for teachers around how to (a) identify OTRs already embedded in instruction and (b) plan, implement, and monitor increased use of OTRs.

How Can Teachers Identify OTRs Currently Embedded in the Curriculum?

Many schools and districts have moved to models of instruction that include commercially available direct instruction programs for core content areas such as reading, writing, and mathematics. These programs vary in form, content, and structure, and many incorporate built-in OTRs, usually in a choral responding format. Often, these programs contain a short warm-up activity section in which students are asked to work with previously mastered or introduced concepts. For example, a scripted reading program providing students with Tier 2 supports in phonics may begin a lesson by asking the teacher to present students with unison opportunities to respond to a series of short vowel sounds displayed on flash cards. Another example, occurring in a math context, may require that students begin each lesson by completing a predetermined problem set that reviews basic math facts or recently covered content, and/or tests problem-solving skills. During this

review activity, each student is given an individual student response sheet and a defined amount of time to complete the work. In both of these scripted, discrete learning trial examples, all students are given the opportunity to respond. A discrete learning trial is a teaching strategy that involves: breaking skills into the smallest steps, teaching each step of the skill extensively until mastered, providing lots of repetition, prompting the correct response and fading the prompts as soon as possible, and using positive reinforcement procedures.

Through recognizing these teaching activities as opportunities to respond, teachers can choose to prioritize curricular components that actively engage all students. Alternately, if these OTRs do not seem to be sufficient, teachers may also opt to augment or adjust their teaching practices to integrate more opportunities for active student responses.

How Can Teachers Plan, Implement, and Monitor Their Increased Use of OTRs?

When considering how OTRs should be incorporated into classroom instruction, teachers should consider not only the effectiveness of an approach but also the efficiency (Skinner, Belfiore, & Watson, 1995). Instructional approaches should be selected that maximize the amount a student learns in a period of time (Skinner et al., 1995). To improve learning rates, teachers can consider improving the quality of OTRs and/or increasing the quantity of OTRs. Quality is improved when it takes fewer practice opportunities for students to demonstrate the skill at mastery (Skinner et al., 1995). Therefore, teachers should consider OTR options that have been empirically supported, including the previously mentioned opportunities for teacher-directed unison responding and classwide peer tutoring. Quantity is improved when teachers provide higher rates of OTRs by increasing the pace of instruction.

Faster paced instruction leads to improved behavior and more accurate academic responding (e.g., Carnine 1976; Darch & Gersten 1985; Tincani, Ernsbarger, Harrison, & Heward, 2005; Skinner et al. 1995).

To increase the pace of instruction, teachers should decrease the time between (a) OTR presentation, (b) feedback on students' responses, and (c) the initiation of the next OTR (Skinner et al., 1996). However, teachers should still provide sufficient wait time (3 seconds) to allow all students to respond. If the wait time is too short, some students may not be able to respond or may simply choose not to respond, and if the wait time is too long, students may begin to display off-task behavior. Further, research suggests that wait times should vary based on the type of task presented (Riley, 1986). For example, students may need a longer wait time to respond to a reading comprehension question and less time to respond to a one-digit by one-digit multiplication fact.

Individual teachers who plan to increase the quality and quantity of OTRs should use data to inform their decision-making (see Gage & McDaniel 2012, this issue, for further detail). That is, teachers need to (a) determine individual present level of performance, (b) develop a plan to increase OTRs, and (c) implement, monitor, and adjust the plan. *Figure 3* shows an action plan that can be used individually by a teacher choosing to self-monitor his or her use of OTRs or by two professionals engaging in consultation. To facilitate this process, teachers should consider (a) self-monitoring (i.e., collecting data on their own performance) and self-management (developing and implementing strategies) or (b) asking a peer, mentor, or administrator to provide consultation to increase their use of OTRs. An example of a specific, measurable, and observable goal would be for a teacher to give three OTRs per minute during a 15 minute science lesson. Both of these practices show promise for helping teachers

increase their use of specific classroom management skills, like OTRs or specific praise (Haydon et al., 2010; Haydon, Mancil, & VanLoan, 2009; Haydon & Hunter, 2011; MacSuga & Simonsen, 2011; Myers, Simonsen, & Sugai, 2011; Simonsen, MacSuga, Fallon, & Sugai, 2012).

Self-monitoring and self-management. Self-monitoring and self-management allow teachers to collect data, develop supports, and monitor their own use of OTRs without external support. This approach would be most appropriate for a teacher who is fluent with using OTRs and interested in refining their practice. The following steps illustrate how a teacher could use self-monitoring and self-management to increase OTRs.

1. *Determine individual present level of performance.* To implement self-monitoring a teacher identifies a consistent and short (e.g., 10–15 min) “monitoring period” during teacher-directed instruction to record their OTRs for a period of 3–5 days. A teacher may collect data on how often they use OTRs by making a tally mark on paper, using a golf counter, using a frequency counter application on their mobile device, or even moving paperclips from one pocket to the other after each OTR during the identified recording period. Alternately, a teacher may audio record their instruction and count OTRs while listening to the recording after school. Regardless of recording method, the teacher graphs their rate of OTRs (the number of OTRs provided divided by the number of minutes monitored) each day.
2. *Develop a plan to increase OTRs.* After the teacher has collected 3–5 days of data, the teacher (a) sets a specific, measurable, and observable goal for increasing their OTRs and (b) develops a targeted self-management plan to increase OTRs. For example, a teacher may write additional

Figure 3 OPPORTUNITIES TO RESPOND ACTION PLAN

Action Plan to Increase Opportunities to Respond (OTRs)					
1. Determine individual present level of performance.					
Who will collect data?	<input type="checkbox"/> I will collect my own data <input type="checkbox"/> I will ask _____ to collect data				
How will data be collected?	<input type="checkbox"/> Tally <input type="checkbox"/> Counter <input type="checkbox"/> Other: _____				
What is your current rate of OTRs?	Day 1	Day 2	Day 3	Day 4	Day 5
	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate
2. Develop a plan to increase OTRs.					
What is your goal rate of OTRs?	Currently, I present an average of ___ OTRs per minute across 5 sampled opportunities. My goal is to increase my use of OTRs to an average of ___ OTRs per minute across 5 sampled opportunities.				
What types of OTRs will you increase?	Individual/Mixed	Unison		Class-wide Peer Tutoring	
	<i>List specific examples:</i> • _____ • _____ • _____	<i>List specific examples:</i> • _____ • _____ • _____		<i>List specific examples:</i> • _____ • _____ • _____	
What steps will you take and when?	Changes to Instruction	Additional Activities		Self-delivered Reinforcer	
	<i>List specific changes:</i> • _____ • _____ • _____	<i>List specific changes:</i> • _____ • _____ • _____		<i>List specific changes:</i> • _____ • _____ • _____	
3. Implement plan, monitor progress, and adjust supports					
What is your rate of OTRs?	Day 1	Day 2	Day 3	Day 4	Day 5
	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate	<input type="checkbox"/> / <input type="checkbox"/> = <input type="checkbox"/> # min rate
Do you need to adjust supports?	<i>List specific adjustments to supports needed to meet goal:</i> 				

OTRs into their lesson plan, implement an instructional game or activity that includes high rates of OTRs, reinforce her or himself for meeting the OTR goal daily, or some combination of the above.

3. *Implement, monitor, and adjust the plan.* Finally, the teacher implements their action plan, continues to collect self-monitoring data during the same recording period, and graphs and reviews rate of OTRs daily. Using these data, the teacher monitors his or her progress toward meeting the self-selected OTR goal and continues, adjusts, or fades self-management supports as indicated by data. For example, a teacher who has met the OTR goal for 5 consecutive days may shift from daily to weekly monitoring, and ultimately fade self-monitoring entirely.

Consultation. Instead of self-monitoring, a teacher may prefer to ask a peer, mentor, or administrator for support in the form of consultation. Effective consultation should follow a similar process, but a consultant (e.g., peer, mentor, administrator) serves as a data collector and coach. The following example illustrates the use of a consultation model to increase OTRs.

1. *Determine individual present level of performance.* A teacher asks a peer to come in and observe for a 15-minute period of teacher-directed instruction across 3–5 days. During this time, the peer tallies every time the teacher presents the class or an individual student with an OTR. At the end of the observation, the peer sums the OTRs and divides by the number of minutes observed (i.e., $x/15$) to obtain a rate. For example, if a teacher presented seven total OTRs in a 15-minute period, the rate would be 0.46 OTRs per minute (7 divided by 15), or one OTR about every two minutes. Then, the peer shares the rate with the teacher and they graph the data daily.

2. *Develop a plan to increase OTRs.* Once the present level of OTR performance has been documented by recording the rate of OTRs across 3–5 days, the teacher and peer meet briefly to discuss that level and to brainstorm an action plan to increase OTRs. Increases in OTRs may be achieved by systematically incorporating additional opportunities for (a) teacher-directed individual or mixed responding, (b) teacher-directed unison responding, (c) classwide peer tutoring, or (d) a combination of different response options into the teachers' instruction. Finally, based on the current level of performance, the pair should determine an observable and measurable goal to monitor progress. For example, "Currently Ms. Bell is presenting approximately .5 opportunities to respond per minute during daily teacher-directed mathematics instruction. Given the integration of teacher-directed unison responding into her daily math facts review, she will increase her rate of opportunities to respond to approximately 1–3 per minute during sampled opportunities across 5 consecutive days."

3. *Implement, monitor, and adjust the plan.* After this brief meeting, the teacher implements the strategies discussed in the action plan and the peer observes the same 15-minute period of teacher-directed instruction and takes data on the rate of OTRs. Following each observation, the peer can share the data with the teacher, determine if the goal was met during that observation, and provide specific feedback (either congratulating the teacher for meeting the goal or providing a suggestion about how to meet the goal during the next observation). The data and feedback could be shared either in writing (on the data sheet or in

a follow-up email) or in a brief (2–3 min) conversation. Once the teacher is implementing the action plan with fidelity and five data points have been collected, the pair can again meet to discuss if the progress is satisfactory (i.e., changes are happening and indicate future achievement of the goal), if the goal has been met overall, and/or if any adjustments need to be made.

As an alternative, teachers may consider a hybrid of the two approaches where the teacher self-monitors to collect baseline and progress monitoring data, and shares those data with a peer to brainstorm strategies to increase OTRs, develop a plan, and modify the plan based on self-monitoring data. Ideally, consultation or a hybrid approach would take place as part of a professional learning community. Thus, the teachers may be both consultants and consultees for each other, as they work to improve their practice. This symbiotic relationship would provide both teachers with opportunities for reflective and nonjudgmental professional development.

Getting started. Once a teacher has determined how to approach working on increasing OTR presentation (i.e., self-monitoring, consultation, or a hybrid) and the method that will be used to collect and monitor data (i.e., low-tech vs. high-tech), he or she will need to engage in data-based decision making to inform effective teaching practice. *Figure 3* presents an action-planning tool that guides teachers through (a) determining present level of performance, (b) developing a plan to increase OTRs, and (c) implementing, monitoring, and adjusting the plan.

Conclusion

An OTR is an instructional stimulus (e.g., question, prompt, cue) that occasions a student response (e.g., verbal, gestural, or production

behaviors). High rates of OTRs lead to positive outcomes for students, and can easily be incorporated into teachers' instruction. It is important for teachers to increase rates of OTR in order to have higher rates of student engagement and participation, less class disruption, and increased opportunities to formatively assess learning. The cost-benefit of the initial time and effort into creating an action plan, using self-monitoring, consultation or a hybrid approach for increasing rates of OTR, will result in efficiency in teacher time and increased learning for students.

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