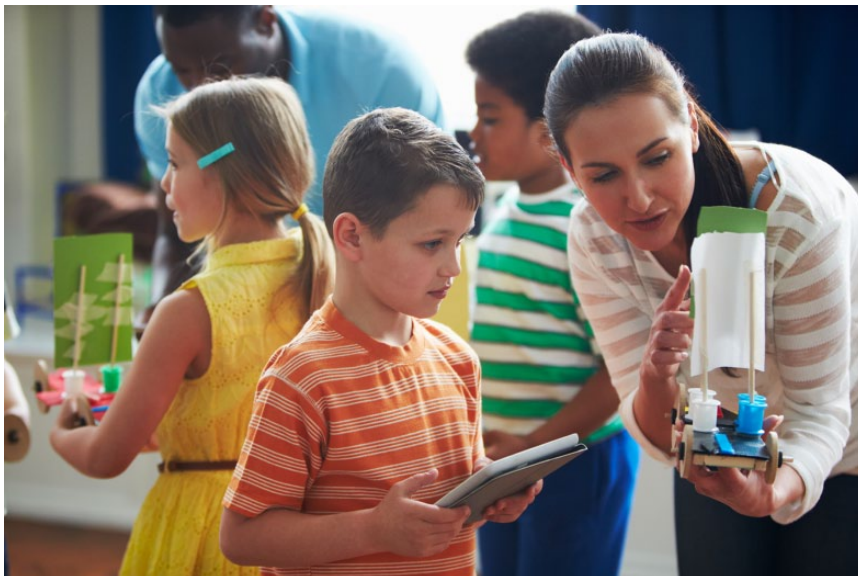


Supporting Student Self-Regulation to Access the General Education Curriculum

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During a fall co-planning meeting, Ms. Williams (fourth-grade teacher) and Mr. Garcia (special education co-teacher) were discussing three students with disabilities who were exhibiting challenging behaviors. Peter, who has a learning disability in reading, gives up easily and seldom completes tasks. Juan, a student with attention-deficit hyperactivity disorder (ADHD), has difficulty with organization. Mara, who has autism spectrum disorder, has difficulty with changes in classroom routines and transitions, resulting in frequent outbursts. Ms. Williams said, “For

goodness sake, they are in fourth grade and should be developing responsibility—how will they ever learn!?”

Like Ms. Williams, educators express an almost universal desire for students to exhibit self-control—that is, manage, monitor, and assess their own social and academic behaviors. These skills comprise *self-regulation*, a complex set of functions derived from several fields of research, including social cognition (Zimmerman, 2000), self-determination (Wehmeyer & Field, 2007), and executive functioning (Brown, 2013).

Although varied definitions of self-regulation exist, researchers concur that self-regulated learners assume increased responsibility for their own behavior and learning over time by strategically setting and planning to meet goals, monitoring and evaluating their progress, and using feedback to adjust their performance.

Subcomponents of self-regulation have been referred to as self-management, self-control, and self-direction and include skills such as goal setting, planning, self-talk, self-monitoring, self-recording, and self-evaluation (Carter, Lane, Crnobori, Bruhn, & Oakes, 2011; Konrad, Fowler, Walker, Test, & Wood, 2007; Menzies & Lane, 2011; Wehmeyer & Field, 2007). These skills help students engage in behaviors such as attending, participating, following directions, organizing, managing materials and time, and completing assignments—behaviors associated with increased academic and social performance across a variety of subjects and school levels (Briesch & Chafouleas, 2009; Carr, Moore, & Anderson, 2014; Carter et al., 2011; Konrad et al., 2007; Ozkan & Sonmetz, 2011). Behavioral challenges demonstrated by students lacking self-regulation are associated with poorer student outcomes, including underachievement,

absenteeism, drop out, strained relationships with peers and adults (Carter et al., 2011; Vaughn, Wanzek, Murray, & Roberts, 2012), and time away from teaching and learning (Scott, Anderson, & Alter, 2012).

Students With Disabilities and Self-Regulation

Self-regulation difficulties are commonly characteristic of students with various disabilities, including learning disabilities (Bulgren, Graner, & Deshler, 2013; Konrad et al., 2007; Ness & Middleton, 2012), emotional and behavioral disorders (Carter et al., 2011; Patton, Jolivette, & Ramsey, 2006), ADHD (Brown, 2013; DiPerna, 2006; Reid, Trout, & Schartz, 2005), and autism spectrum disorder (Carr et al., 2014; Kenworthy et al., 2014). These students' repertoires of self-regulation strategies are often limited and not well suited to the academic and social demands they face in school (Bulgren et al., 2013; Menzies & Lane, 2011; Vaughn et al., 2012). Complex tasks that require several self-regulation components operating simultaneously (e.g., reading fluently with comprehension or completing multistep projects) often present major challenges. Students may have difficulties orchestrating their planning, thinking, actions, and emotions to accomplish tasks and control their behavior (DiPerna, 2006; Konrad et al., 2007). Self-regulation problems may also manifest as behaviors such as impulsivity, distractibility, and hyperactivity (Brown, 2013; Reid et al., 2005). Organization, time and materials management, problem solving, and flexibility are problematic for students with disabilities demonstrating self-regulation deficits (Carr et al., 2014; Carter et al., 2011; Ness & Middleton, 2012).

Increasingly, students with exceptionalities are being served in general education classrooms but need support to develop the self-regulatory skills demonstrated by successful learners in these settings (Konrad, Walker, Fowler, Test, & Wood, 2008;

Ness & Middleton, 2012; Schunk & Zimmerman, 2007; Scott et al., 2012). Self-management skills taught in isolation often fail to generalize or transfer to the situations where students need to apply them (Gresham & Elliott, 2014). A more integrated approach to developing self-regulation skills in the context of daily classroom activities increases opportunities to provide support and practice for student self-regulation in a meaningful context. Planning for generalization increases the likelihood that students will demonstrate the skills when they are needed in the classroom (Carr et al., 2014; Konrad et al., 2007; Schunk & Zimmerman, 2007). Because the development of self-regulation is a complex and long-term goal, some students will require more intensive instruction in self-regulation than can be provided in the general education setting alone (Bulgren et al., 2013; Menzies & Lane, 2011; Scott et al., 2012). However, much can be accomplished toward building foundational skills that contribute to self-regulation by structuring classroom environments and instruction to

consistently promote and support student self-management (Chan, Graham-Day, Ressa, Peters, & Konrad, 2014; Hoff & Ervin, 2013; Konrad et al., 2007).

Numerous studies and reviews (e.g., Briesch & Chafouleas, 2009; Carr et al., 2014; Carter et al., 2011; Konrad et al., 2007; Ozkan & Sonmetz, 2011; Reid et al., 2005; Wehmeyer & Field, 2007) support the efficacy of self-regulation interventions, including goal setting, self-management, self-monitoring, and self-evaluation, to improve the academic and behavioral performance of students with disabilities. Researchers (e.g., Carter et al., 2011; Cho, Wehmeyer, & Kingston, 2012; Hoff & Ervin, 2013) have also found that both general and special education classroom teachers describe self-management interventions as relatively easy to use, time efficient, and adaptable for individual students and a variety of target behaviors. These findings support the inclusion of self-regulation practices as universal interventions that benefit students with disabilities in general education classrooms.

Figure 1. Process to Promote Self-Regulation



Systematically Increasing Student Self-Regulation

Classrooms that support increased student self-regulation are guided by teachers who engage in a continuous process of assessment, implementation, and evaluation (Konrad et al., 2008; Vaughn et al., 2012). Figure 1 illustrates the iterative process that educators can follow to increase student self-regulation in their classrooms. Specifically, the process involves the (a) identification of practices that promote student self-regulation, (b) assessment of use of these practices, and (c) implementation and evaluation of practical techniques that make classroom environments and instruction more supportive of student self-control.

Mr. Garcia agreed with Ms. Williams that the students needed to become increasingly capable of managing their own learning. He suggested that he and Ms. Williams begin by identifying known ways of promoting self-management in classrooms and evaluating their current co-teaching practices to determine if they were consistent with research-based practices.

Identify Teacher Practices That Promote Increased Self-Regulation

Numerous teacher practices can be used before, during, and after classroom tasks to enhance students' self-regulation of their planning and performance (Zimmerman, 2000).

These techniques are derived from research documenting successful self-regulation interventions used with students having a variety of disabilities at various age and grade levels in a range of educational settings. The techniques are often studied in various combinations across disabilities and levels. Further research is needed to determine if individual practices are differentially effective for particular categories, ages, and skills (Carr et al., 2014; Carter et al., 2011; Reid et al., 2005; Santangelo, Harris, & Graham, 2008) as well as the relative contributions of individual techniques. Practitioners are

advised to assess the effectiveness of selected practices with their own students (Carr et al., 2014; Konrad et al., 2008; Santangelo et al., 2008; Scott et al., 2012; Vaughn et al., 2012). Some effective practices include the use of organizational techniques and tools, clear expectations and routines, checklists, and student choice. There are also more generalized strategies to promote student acquisition and maintenance of particular self-regulation skills, such as teacher modeling, goal setting, questioning, and feedback.

Organize the classroom. When organizing the physical classroom, educators can incorporate a variety of visual prompts to support greater student independence and self-direction (Carr et al., 2014; Kenworthy et al., 2014). Developmental levels and other characteristics of students, such as literacy skills and processing patterns, as well as available space and materials should be taken into account when designing a classroom supportive of self-regulation. For example, when students have limited reading skills due to age, disability, or language differences, adding pictures along with words to label or explain allows students to be increasingly independent in using directions, materials, and activities (Ness & Middleton, 2012; Patton et al., 2006; Wery & Nietfeld, 2010). Rather than simultaneously opening all specialty areas, centers, or equipment in the classroom for independent student use, teachers can strategically focus on a limited number of areas, model their use, and practice with feedback to ensure most students are using spaces and materials appropriately prior to introducing new options (Brown, 2013; Kenworthy et al., 2014).

Other organizational tools that support student self-direction include timers, notebooks, binders, planners, calendars, and folders; these can facilitate task completion (Kenworthy et al., 2014; Wery & Nietfeld, 2010). Teaching students how to use organizational tools for scheduling, recording, and monitoring assignment completion instructs students about









organization and time management. Using a visual timer to time classroom tasks and transitions between centers or activities also makes students more aware of time and helps them focus their activities. Breaking down complex projects and scheduling parts for feedback can help ensure greater success for students completing these projects. Researchers (Konrad et al., 2007; Schunk & Zimmerman, 2007; Vaughn et al., 2012) have stressed the importance of teacher modeling and explanation of how to use organizational tools, the inclusion of frequent references to the organizational tools along with feedback on student use, and gradual removal of teacher prompts as students become more independent. This process provides a smooth transition from teacher-directed to student-directed management of time, tasks, and materials.

Establish expectations, rules, and routines. Scott et al. (2012) emphasized the need for clear expectations (rules) and routines (procedures) as an essential foundation on which to build student self-management. Expectations and routines should be modeled, practiced with feedback, consistently enforced and reinforced multiple times until they become standard operating procedures for students (Chan et al., 2014; Scott et al., 2012; Vaughn et al., 2012). Research on positive behavioral interventions has demonstrated that a consistent positive focus on "catching kids being good" (i.e., praising their meeting expectations and following procedures), rather than punishing rule infractions, increases positive student behaviors (Scott et al., 2012). Classroom misbehaviors are reteaching opportunities much like reteaching reading or math skills that students did not master following initial instruction. Only after students have demonstrated their ability to meet classroom expectations and follow procedures under adult direction can students be expected to assume more responsibility for managing their own behavior (Gresham & Elliott, 2014).

Use checklists. Carter et al. (2011) and Carr et al. (2014) found checklists to be an effective tool for student self-management. Ness and Middleton (2012) and Patton et al. (2006) suggested that checklists are extremely beneficial in breaking down complex tasks and visually guiding students through the steps to complete activities or assignments more independently. Repeated opportunities to practice steps listed on a checklist with adult coaching allow students to gradually assume more responsibility for completing tasks independently using the checklist. Checklists can help students who lack organizational skills complete a variety of classroom procedures and tasks (e.g., beginning the school day, using materials or equipment, recording and tracking assignments) and self-monitoring behavior (see Figure 2). Checklists also provide a model for self-instruction (e.g., “First I should. . . . My next step is. . . .”), with the goal of eventually eliminating fading the use of checklists and having students silently talk themselves through various tasks.

Give students choice and voice. Regular opportunities for students to make choices and express opinions on classroom life also set the stage for increased student self-regulation (Chan et al., 2014; Green, Mays, & Jolivette, 2011; Konrad et al., 2008). Providing choices—such as options for materials or media, ways to demonstrate learning, topics for assignments, classroom roles or jobs, work partners, goals, and rewards—gives students practice in decision making and problem solving (Shogren, Faggella-Luby, Bae, & Wehmeyer, 2004). The number of choices can be limited at first (e.g., “Would you prefer this or that?”) and gradually increased over time to ensure successful practice. Creating opportunities to express opinions and preferences through classroom meetings, during goal-setting sessions, and at appropriate points during instruction can foster student voice. Requiring students to justify their answers and in-class comments promotes thoughtful decision

Figure 2. Student Checklist Examples

MAIN MORNING ROUTINE		CALM DOWN CHECKLIST	
✓□	Backpack in cubby/locker 		Breathe deeply
✓□	Take out materials (binder, books, pencil, paper) 		Quiet voice
✓□	Copy assignments 		Count to 10
✓□	Complete warm-up 		Hands and feet to self

making and relates directly to academic skills required by most state standards (Bulgren et al., 2013; Konrad et al., 2007, 2008).

Schunk and Zimmerman (2007) as well as Briesch and Chafouleas (2009) emphasized the importance of discussing self-regulation skills with students and providing a rationale for engaging in specific skills. Discussion helps learners identify benefits of the self-regulation skill and discriminate when and how to use it. A teacher mindset of developing self-regulation strategies *with* students (not *for* them or providing *to* them) increases the likelihood that students will have the opportunities, practice, and appropriate levels of support they require to become more responsible and independent over time. Although greater teacher direction may be necessary initially to teach appropriate behaviors, gradually reducing external control and shifting increased levels of responsibility to students are essential for developing student self-regulation (Chan et al., 2014; Hoff & Ervin, 2013; Santangelo et al., 2008; Wehmeyer & Field, 2007).









Model self-regulation language and skills. Modeling involves demonstrating the self-control skill or routine for the students to imitate.

Often this includes “think-alouds,” wherein teachers talk through their thinking and actions related to the skill being addressed (Vaughn et al., 2012; Wery & Nietfeld, 2010). Teacher think-alouds, verbal prompts, and specific feedback give students language they can use to talk themselves through more independent task completion and evaluation.

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Set goals. Konrad and colleagues (2007) and Santangelo et al. (2008) found that, across studies, goal setting and monitoring combined with other self-management interventions increased academic performance

Figure 3. Sample Questions to Prompt Self-Regulation

 MODELING SELF-INSTRUCTION, MONITORING, AND EVALUATION	STUDENT NOTES
 What needs to be done? What is your goal?	
 How will you do it? What are the steps?	
 What do you do first? Next?	
 How would you rate your performance?	
 What parts went well? What helped you?	
 What was difficult? What would you change?	
 What is your goal for next time?	

among students with disabilities. Chan et al. (2014) suggested that teachers help students learn goal setting through modeling classwide goals and inviting student input into these goals. Initial goals can address unambiguous tasks that are easily counted and monitored (e.g., problems completed, sentences written, reduced time during transitions, homework submitted). Teachers track progress toward classwide goals simultaneously with students using charts or graphs as appropriate for students' age and developmental level. Teachers and students compare counts and discuss discrepancies. Gradually, more responsibility for monitoring is shifted to students with periodic teacher checks for accuracy (Hoff & Ervin, 2013; Rafferty, 2010). Successes and new or adjusted class goals are discussed as a group prior to having students engage in more individualized goal setting, recording, and progress evaluation.

Use strategic questions. Teachers can ask hundreds of questions during the school day. More of these questions could be strategically framed to prompt self-regulatory behaviors before, during, and after task completion

(Kenworthy et al., 2014; Menzies & Lane, 2011; Santangelo et al., 2008; Wery & Nietfeld; 2010). Such questioning models language students can use to self-instruct, self-monitor, and self-evaluate their work (see Figure 3). After students have been provided clear models of questions and prompts and have practiced skills under teacher direction, *asking* students next steps, ways to approach tasks, or strategies to help themselves (rather than *telling* them how to do it) results in greater self-regulation than continued teacher directives (Wehmeyer & Field, 2007).

Provide positive feedback. Positive verbal feedback that is frequent, specific, immediate, and enthusiastic is one of the most powerful and least time-consuming techniques that teachers can use to build desirable student behaviors and ensure that students know what is expected (Chan et al., 2014; Scott et al., 2012; Vaughn et al., 2012). Effective teachers use at least a 4:1 positive-to-negative or corrective feedback ratio in response to students' words and actions (Scott et al., 2012). When teachers specifically praise student behavior (e.g., "You remembered to use your quiet voice in group today"; "You finished more

problems than last time. Well done!"), they also model language students can use when self-instructing and self-reinforcing during and after task completion. Praising student effort and interest as well as increasing independence (i.e., progress and small successes, not just mastery) helps to shape self-regulatory behaviors and increase opportunities for positive feedback (Schunk & Zimmerman, 2007). As students become more independent, the focus of positive teacher feedback can shift from aspects of the particular behavior to recognition of students' increased independence and enhanced self-direction (DiPerna, 2006; Wehmeyer & Field, 2007).

Assess Current Practices and Set Goals

Educators interested in increasing support for student self-regulation can examine their current classroom practices to determine if they are congruent with research-based practices. The inventory presented in Figure 4 offers a tool for assessing the use of these effective techniques to enhance student self-regulation. For each item on the inventory, teachers can note how consistently they are implementing the practice. Practices teachers consider incompatible with the current setting, students, or teaching assignment can be designated as "not applicable." For practices that are intermittently or infrequently implemented, teachers or co-teachers can identify a few practices to integrate into the classroom more consistently, adding others over time as feasible and appropriate to the class and students.

By reviewing the inventory throughout the school year, teachers can add self-regulation techniques that become more relevant as students become increasingly self-regulated or as particular issues arise (e.g., difficulties associated with learning new skills, problems working cooperatively on a project). Collaboration among professionals serving the students promotes consistency across settings (e.g., grades, subjects, resource classes, areas

Figure 4. Classroom Practices Inventory to Support Self-Regulation

How often do I use these practices?	Consistently	Intermittently	Infrequently	N/A
Organizational techniques and tools				
Label work areas, storage spaces, materials with words and images				
Post visual directions near work areas; provide written directions				
Post, refer to, and model use of schedules, calendar, checklists, notebooks, and other organizational tools				
Provide role cards for duties in various group roles (leader, recorder, timer, etc.)				
Provide examples, explain, and practice using rubrics on sample assignments to guide assignment completion				
Expectations and routines				
Identify and teach expectations via multiple examples, demonstrations, role-plays				
Establish step-by-step routines for common tasks (e.g., morning routine, recording assignments, transitions, dismissal)				
Explain, practice, and review procedures and tasks multiple times with specific feedback prior to expecting student self-management				
Ask students to repeat directions to practice self-instruction				
Structure group assignments to include peer models and adequate support for tasks and behavior				
Practice group roles (e.g., leader, recorder, encourager) and norms with role cards and feedback				
Student involvement				
Help students identify strengths, interests, preferences, and areas of need; share strengths or interests with class; encourage peer support				
Identify areas, materials, and tasks that students can use or do without getting permission; practice procedures for using				
Plan scheduled breaks; teach students how to ask for breaks				
Give students choices (e.g., readings, responses, partners, task order) to practice decision making				
Provide opportunities for student input and decision making (e.g., class meetings, suggestion boxes)				
Goal setting and monitoring				
Practice goal setting with class on academic and social behaviors				
Practice monitoring and recording class goal completion				
Provide examples of personal goals and ways to monitor				

(continued)

Figure 4. (continued)

How often do I use these practices?	Consistently	Intermittently	Infrequently	N/A
Give students time to set and monitor personal goals				
Instruction				
Use signals to encourage student engagement and assessment of understanding during instruction (e.g., thumbs-up or thumbs-down, voting)				
Use teacher “think-alouds” to model planning, problem solving, self-management, error correction, and self-encouragement				
Ask students to justify their answers and opinions with evidence and examples				
Provide encouraging statements to model positive self-talk; ask students to identify personally meaningful statements				
Remind (or ask) students about tools they can use to help themselves (e.g., rubrics, examples, math strategies of using smaller numbers, number lines, drawings to problem solve)				
Provide specific, task-oriented feedback to let students know what they are doing well and what to revise; encourage self-evaluation				
Keep positive-to-negative feedback ratio at least four positive for every one corrective statement; model and encourage positive self-talk				
Teach sources of help—where to look; when, whom, and how to ask; and what to do while waiting for help				
Task completion				
Ask students for their ideas for remembering, solving problems, accomplishing tasks, finding help				
Acknowledge aspects of tasks that may be difficult; brainstorm coping strategies and positive self-talk				
Provide self-correcting materials (e.g., answer keys, online programs, commercial materials, devices) to check work				
Assign peer helpers; encourage peer assistance				
Ask students to tell what they can do before helping them with problematic aspects of tasks				
Ask questions that encourage strategy use, self-instruction, self-monitoring, and self-evaluation				
Break down large projects into smaller chunks and schedule chunk completion; provide reminders and feedback on sections; have students record and track assignments, due dates, and progress				
Ask students to self-evaluate classwork and behavior, giving them time to do so; discuss ratings and goals				

in the school), increasing the likelihood of mastery and generalization of targeted skills (Gresham & Elliott, 2014; Vaughn et al., 2012).

In addition to using the effective practices inventory, teachers can assess and monitor their implementation of techniques that promote student self-regulation through frequency counts of specific behaviors during specified time segments (e.g., a class or other period of time during the school day) or by analyzing recordings of themselves during these time periods (Scott et al., 2012). Observations by colleagues, mentors, instructional coaches, or supervisors also can be helpful in assessing use of classroom practices that promote self-regulation (Coddington, Feinberg, Dunn, & Pace, 2005).

Ms. Williams and Mr. Garcia agreed upon their shared goals for maintaining a positive class environment and identified new practices they could integrate into their co-teaching. To start, Mr. Garcia would teach Peter to use self-questioning for task completion and prompt Juan to use a morning routine checklist to help with organization. Mr. Garcia taught and practiced a calming routine with Mara, and she identified a signal he could give her when he noticed her becoming upset. Ms. Williams provided posters reflecting the routines and self-questioning practices and added a regular review of these to her lesson plans.

Implement Priority Self-Regulation Practices

Once educators are knowledgeable about research-based practices shown to enhance student self-regulation and have assessed their current practices and classroom environments, they can set priorities for skill instruction. Although maximizing student self-regulation reflects most teachers' aspirational goal, setting priorities and working on one or a few targeted self-management skills until students are consistently demonstrating those skills is likely to be a more successful approach than trying to address too many skills simultaneously (Carter

et al., 2011; Schunk & Zimmerman, 2007).

Clues as to which behaviors may need the most immediate attention include patterns of classroom behavioral issues in response to academic tasks, data from classroom management systems that may be in place, or office discipline referrals (Scott et al., 2012). If students are having particular difficulties (e.g., completing assignments, participating, working in groups, transitioning), the environment and routines surrounding those behaviors should be examined before trying to change student behavior. Teachers will be more successful if supports for desired behaviors are in place and students clearly understand how they are to behave prior to expecting students to demonstrate increased self-control (Carter et al., 2011; Gresham & Elliott, 2014; Scott et al., 2012). Skills that contribute most to students' success at any given point in the school year can be given priority. As students become more self-controlled and independent, expectations increase, and more complex skills can be targeted over time.

In teaching self-management skills, Rafferty (2010) reminded educators to ensure that the behaviors targeted for development are those that (a) students are required to demonstrate frequently (i.e., several times weekly) to provide for sufficient practice, (b) are voluntary (i.e., under the students' control, rather than a manifestation of a disability or other condition), and (c) are within the student's skill set with some instruction and coaching. Gresham and Elliott (2014) distinguished between educator responses to acquisition and performance skill deficits. If students have never learned a targeted self-regulation skill to the point of being able to practice it accurately, teaching or reteaching of the skill and providing more practice with feedback is required. If students do not apply target skills in appropriate situations, they may not be discriminating environmental cues signaling a need for the behavior. Helping students accurately identify these contextual

cues and initially providing additional reminders increases skill demonstration in appropriate situations. Finally, if students know how to do the skill but choose not to, providing rewards that meet students' particular needs will likely improve performance (Gresham & Elliott, 2014).

Identify Integration Opportunities

In addition to classroom organization and management, academic instruction affords many opportunities to practice self-regulation skills such as making choices, setting goals, completing tasks, tracking progress, evaluating performance, and solving problems. Several researchers (Carr et al., 2014; Konrad et al., 2007; Reid et al., 2005) have found that combining self-regulation skill development with academic instruction enhances student performance in both areas. Self-regulated strategy development in writing (Santangelo et al., 2008) and collaborative strategic reading (Vaughn et al., 2011) are more complex, evidence-based strategies for students with disabilities that incorporate several components of self-regulation. Elements of these strategies (e.g., motivation, modeling, scaffolded instruction, feedback, and reinforcement) can be used in classrooms to enhance fundamentals of self-regulation. Motivational aspects of self-regulation (DiPerna, 2006; Santangelo et al., 2008) can be enhanced through use of academic readings, resources, and assignments that deal with topics such as issues faced by students, challenges overcome, persistence, problem solving, goal-setting, and working to accomplish goals. Incorporating the types of questions suggested previously as well as questions requiring students to evaluate ideas, responses, and work samples related to academic tasks integrates self-regulation skills practice into academic instruction (Konrad et al., 2007; Santangelo et al., 2008; Vaughn et al., 2011).

During instruction, teachers can also encourage student self-regulation through the use of think-alouds and language that models self-regulation.

Establishing response signals whereby students indicate their agreement, disagreement, level of understanding, or desire to add information in response to teacher or peer comments gives students a low stakes way to practice evaluating ideas in relation to a standard and prepares them for self-evaluation during more independent work (Ness & Middleton, 2012; Patton et al., 2006). Teachers can also help students practice self-monitoring by periodically asking class members to record or signal if they are attending or working appropriately at various points during instruction or seatwork (Rafferty, 2010). Teacher-guided practice to evaluate samples of student work using rubrics is yet another way to develop self-evaluation skills in the context of academic instruction (Chan et al., 2014; Saddler & Good, 2006).

Peer assistance often helps students transition from teacher-guided to independent practice of skills (Carr et al., 2014; Chan et al., 2014; Santangelo et al., 2008; Vaughn et al., 2011). Carefully selected peer partners or teammates can help establish a system of natural and complementary supports. Regularly asking the class and individual students (including those having difficulty with self-regulation) to suggest ways to help everyone remember important information, solve problems, approach tasks, and monitor success provides additional opportunities for students to voice their ideas, support one another, and practice self-regulation skills in time-efficient ways.

Finally, practice formats showing potential to develop self-regulation skills include partner practice, peer tutoring, and cooperative learning (Carr et al., 2014; Chan et al., 2014; Vaughn et al., 2011). Carefully structuring these opportunities with specific objectives, clear directions, models of expected behaviors, task steps, and role cards that clarify expectations for interacting with peers provide the foundation for more independent student performance in these arrangements. Offering feedback, gradually fading prompts, and having

groups self-evaluate using criteria for successful group work (Hoff & Ervin, 2013; Reid et al., 2005; Schunk & Zimmerman, 2007) help to ensure skill development and decrease time spent correcting misbehavior when these learning structures are used.

Evaluate Effectiveness

Konrad et al. (2008) and Vaughn et al. (2012) stressed that ongoing progress monitoring of teacher practices and student performance helps determine whether teachers are becoming more skilled in promoting self-regulation and whether students are becoming more self-regulated, independent learners. Performance assessment and use of resulting data to improve performance increase target behaviors in both adults and students. Incorporating accountability by sharing and discussing teacher data with colleagues, coaches, supervisors, or instructional specialists also enhances fidelity and frequency of use of effective practices (Coddington et al., 2005).

Ongoing progress monitoring of teacher practices and student performance helps determine whether teachers are becoming more skilled in promoting self-regulation and whether students are becoming more self-regulated, independent learners.

The same tools and methods used to obtain a baseline of teacher practices (e.g., Table 1, frequency counts, video or audio recordings, colleague observations) can be used for continued progress monitoring throughout the school year. Teachers can set goals for implementing targeted practices based on initial self-assessment, continue to collect data on strategy use, and adjust as needed to

meet goals. Using scripted lessons with specific attention to integrating practices, such as those detailed in Table 1, cues teachers to implement techniques that support student self-regulation.

Scott et al. (2012) and Carter et al. (2011) recommended the use of similar assessments (e.g., frequency counts of student self-management behaviors) to track student progress in self-regulation. Although existing management systems may reflect overall increases in positive classroom behaviors (and decreases in undesired behaviors), they may not be sensitive enough to track specific student self-regulation behaviors. Weekly or semiweekly counts of behaviors can be taken by the teacher, colleagues, paraprofessionals, or volunteers during sample time periods. As students become more proficient in self-monitoring, their data (with periodic teacher checks for accuracy) can be used to gauge progress (Hoff & Ervin, 2013). Ultimately, student academic and behavioral progress offers the most convincing evidence of the impact of teacher practices promoting student self-regulation.

Collaborate and Problem Solve for Additional Support

Despite best efforts by classroom teachers to use practices that promote self-regulatory behaviors, some students will require more explicit, systematic, and intensive instruction and practice to develop targeted skills (Bulgren et al., 2013; Menzies & Lane, 2011; Scott et al., 2012). These students benefit from small-group interventions provided during periods designated for remediation or pullout services to supplement instruction in the general education classroom. Often the self-regulation skills and strategies targeted in inclusive settings can be enhanced and practiced in a context of supplemental academic instruction.

To ensure consistency between settings for students who are challenged by a lack of self-regulatory behaviors, collaboration and clear communication among professionals

providing classroom and supplemental instruction become even more critical. Consultation with grade-level colleagues, response-to-intervention team members, instructional or behavioral specialists, or other resources available in the system can provide support to help teachers determine the best course of action to meet individual student needs.

Mr. Garcia and Ms. Williams regularly reviewed their use of new self-regulation teaching practices while monitoring progress for Peter, Juan, and Mara. They were pleased to learn that using the classwide teaching practices they had selected were not that difficult, and the students were showing improvement in their behavioral self-control as well as academics. They recognized that Peter, Juan, and Mara would need ongoing scaffolding to more fully develop self-regulatory skills. Ms. Williams and Mr. Garcia agreed to revisit the inventory on a quarterly basis to continuously improve their teaching of self-regulation skills.

Conclusion

Systematically using the process and self-assessment inventory presented here with a personal willingness to review and revise one's practices can promote the development of self-regulation for students with disabilities. Numerous tools and resources to support teachers' efforts (e.g., checklists, rubrics, goal sheets, self-monitoring charts) can be accessed online at sites such as www.imdetermined.org, www.interventioncentral.org, www.rubistar4teachers.org, and www.kyap.org. General and special education teachers can create classrooms that scaffold student self-regulation and ultimately, greater student success in the general education curriculum.

References

- Briesch, A. M., & Chafouleas, S. M. (2009). Review and analysis of literature on self-management interventions to promote appropriate classroom behaviors (1988–2008). *School Psychology Quarterly*, 24, 106–118.
- Brown, T. E. (2013). *A new understanding of ADHD in children and adults: Executive function impairments*. New York, NY: Routledge.
- Bulgren, J. A., Graner, P. S., & Deshler, D. D. (2013). Literacy challenges and opportunities for students with learning disabilities in social studies and history. *Learning Disabilities Research & Practice*, 28, 17–27.
- Carr, M. E., Moore, D. W., & Anderson, A. (2014). Self-management interventions with students with autism: A meta-analysis of single-subject research. *Exceptional Children*, 81, 28–44.
- Carter, E. W., Lane, K. L., Crnabori, M., Bruhn, A. L., & Oakes, W. P. (2011). Self-determination interventions for students with and at risk for emotional and behavioral disorders: Mapping the knowledge base. *Behavioral Disorders*, 36, 100–116.
- Chan, P. E., Graham-Day, K. J., Ressa, V. A., Peters, M. T., & Konrad, M. (2014). Beyond involvement: Promoting student ownership of learning in classrooms. *Intervention in School and Clinic*, 50, 105–113.
- Cho, H., Wehmeyer, M. L., & Kingston, N. M. (2012). The effects of social and classroom ecological factors on promoting self-determination in elementary school. *Preventing School Failure*, 56, 19–28.
- Codding, R. S., Feinberg, A. B., Dunn, E. K., & Pace, G. M. (2005). Effects of immediate performance feedback on implementation of behavior support plans. *Journal of Applied Behavior Analysis*, 38, 205–219.
- DiPerna, J. C. (2006). Academic enablers and student achievement: Implications for assessment and intervention services in the schools. *Psychology in the Schools*, 43, 7–17.
- Green, K. B., Mays, N. M., & Jolivette, K. (2011). Making choices: A proactive way to improve behaviors for young children with challenging behaviors. *Beyond Behavior*, 20, 25–31.
- Gresham, F. M., & Elliott, S. N. (2014). Social skills assessment and training in emotional and behavioral disorders. In H. M. Walker & F. M. Gresham (Eds.), *Handbook of evidence-based practices for emotional and behavioral disorders: Applications in schools* (pp. 152–172). New York, NY: Guilford Press.
- Hoff, K. E., & Ervin, R. A. (2013). Extending self-management strategies: The use of a classwide approach. *Psychology in the Schools*, 50, 151–164.
- Kenworthy, L., Anthony, L. G., Alexander, K. C., Werner, M. A., Cannon, L. M., & Greenman, L. (2014). *Solving executive function challenges: Simple ways to get kids with autism unstuck and on target*. Baltimore, MD: Paul H. Brookes.
- Konrad, M., Fowler, C. H., Walker, A. R., Test, D. W., & Wood, W. M. (2007). Effects of self-determination interventions on the academic skills of students with learning disabilities. *Learning Disability Quarterly*, 30, 89–113.
- Konrad, M., Walker, A. R., Fowler, C. H., Test, D. W., & Wood, W. M. (2008). A model for aligning self-determination and general curriculum standards. *TEACHING Exceptional Children*, 40(3), 53–64.
- Menzies, H. M., & Lane, K. L. (2011). Using self-regulation strategies and functional assessment-based interventions to provide academic and behavioral support to students at risk within three-tiered models of prevention. *Preventing School Failure*, 55, 181–191.
- Ness, B. M., & Middleton, M. J. (2012). A framework for implementing individualized self-regulated learning strategies in the classroom. *Intervention in School and Clinic*, 47, 267–275.
- Ozkan, S. Y., & Sonmetz, M. (2011). Examination of single subject studies conducted on individuals with disabilities by using self-management strategies: A meta-analysis study. *Educational Sciences: Theory and Practice*, 11, 809–821.
- Patton, B., Jolivette, K., & Ramsey, M. (2006). Students with emotional and behavioral disorders can manage their own behavior. *TEACHING Exceptional Children*, 39(2), 14–21.
- Rafferty, L. A. (2010). Step-by-step: Teaching students to self-monitor. *TEACHING Exceptional Children*, 43(2), 50–58.
- Reid, R., Trout, A. L., & Schartz, M. (2005). Self-regulation interventions for children with attention deficit/hyperactivity disorder. *Exceptional Children*, 71, 361–377.
- Saddler, P. M., & Good, E. (2006). The impact of self- and peer-grading on student learning. *Educational Assessment*, 11, 1–31.
- Santangelo, T., Harris, K., & Graham, S. (2008). Using self-regulated strategy development to support students who have “trubol geting thangs into werds.” *Remedial and Special Education*, 29, 78–89.

- Schunk, D. H., & Zimmerman, B. J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading and Writing Quarterly*, 23, 7–25.
- Scott, T. M., Anderson, C. M., & Alter, P. (2012). *Managing classroom behavior using positive behavior supports*. Boston, MA: Pearson.
- Shogren, K. A., Faggella-Luby, M., Bae, S. J., & Wehmeyer, M. L. (2004). The effect of choice making as an intervention for problem behavior: A meta-analysis. *Journal of Positive Behavioral Interventions*, 6, 228–237.
- Vaughn, S., Klingner, J. K., Swanson, E. A., Boardman, A. G., Roberts, G., Mohammed, S. S., & Stillman-Spisak, S. J. (2011). Efficacy of collaborative strategic reading with middle school students. *American Educational Research Journal*, 48, 938–964.
- Vaughn, S., Wanzek, J., Murray, C. S., & Roberts, G. (2012). *Intensive interventions for students struggling in reading and mathematics: A practice guide*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Wehmeyer, M. L., & Field, S. L. (2007). *Self-determination: Instructional and assessment strategies*. Thousand Oaks, CA: Corwin.
- Wery, J. J., & Nietfeld, J. L. (2010). Supporting self-regulated learning with exceptional children. *TEACHING Exceptional Children*, 42(4), 70–78.
- Zimmerman, B. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zdaner (Eds.), *Handbook of self-regulation* (pp. 13–39). San Diego, CA: Academic Press.
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