



RTI Toolkit: A Practical Guide for Schools

The Teacher as Intervention First Responder: How to Find & Fix Academic Skill Deficits

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How To: Deliver Direct Instruction in General-Education Classrooms

When teachers must present challenging academic material to struggling learners, they can make that material more accessible and promote faster learning by building assistance directly into instruction. Researchers use several terms to refer to this increased level of student instructional support: direct instruction, explicit instruction, or supported instruction (Rosenshine, 2008).

The checklist below summarizes the essential elements of a direct-instruction approach. When preparing lesson plans, instructors can use this resource as a 'pre-flight' checklist to make sure that their lessons reach the widest range of diverse learners.

1. Increase Access to Instruction	
Instructional Element	Notes
<input type="checkbox"/> Instructional Match. Lesson content is appropriately matched to students' abilities (Burns, VanDerHeyden, & Boice, 2008).	
<input type="checkbox"/> Content Review at Lesson Start. The lesson opens with a brief review of concepts or material that have previously been presented. (Burns, VanDerHeyden, & Boice, 2008, Rosenshine, 2008).	
<input type="checkbox"/> Preview of Lesson Goal(s). At the start of instruction, the goals of the current day's lesson are shared (Rosenshine, 2008).	
<input type="checkbox"/> Chunking of New Material. The teacher breaks new material into small, manageable increments, 'chunks', or steps (Rosenshine, 2008).	
2. Provide 'Scaffolding' Support	
Instructional Element	Notes
<input type="checkbox"/> Detailed Explanations & Instructions. Throughout the lesson, the teacher provides adequate explanations and detailed instructions for all concepts and materials being taught (Burns, VanDerHeyden, & Boice, 2008).	
<input type="checkbox"/> Think-Alouds/Talk-Alouds. When presenting cognitive strategies that cannot be observed directly, the teacher describes those strategies for students. Verbal explanations include 'talk-alouds' (e.g., the teacher describes and explains each step of a cognitive strategy) and 'think-alouds' (e.g., the teacher applies a cognitive strategy to a particular problem or task and verbalizes the steps in applying the strategy) (Burns, VanDerHeyden, & Boice, 2008, Rosenshine, 2008).	
<input type="checkbox"/> Work Models. The teacher makes exemplars of academic work (e.g., essays, completed math word problems) available to students for use as models (Rosenshine, 2008).	
<input type="checkbox"/> Active Engagement. The teacher ensures that the lesson engages the student in 'active accurate responding' (Skinner, Pappas & Davis, 2005) often enough to capture student attention and to optimize learning.	
<input type="checkbox"/> Collaborative Assignments. Students have frequent opportunities to work collaboratively--in pairs or groups. (Baker, Gersten, & Lee, 2002; Gettinger & Seibert, 2002).	
<input type="checkbox"/> Checks for Understanding. The instructor regularly checks for student	



understanding by posing frequent questions to the group (Rosenshine, 2008).	
<input type="checkbox"/> Group Responding. The teacher ensures full class participation and boosts levels of student attention by having all students respond in various ways (e.g., choral responding, response cards, white boards) to instructor questions (Rosenshine, 2008).	
<input type="checkbox"/> High Rate of Student Success. The teacher verifies that students are experiencing at least 80% success in the lesson content to shape their learning in the desired direction and to maintain student motivation and engagement (Gettinger & Seibert, 2002).	
<input type="checkbox"/> Brisk Rate of Instruction. The lesson moves at a brisk rate--sufficient to hold student attention (Carnine, 1976; Gettinger & Seibert, 2002).	
<input type="checkbox"/> Fix-Up Strategies. Students are taught fix-up strategies (Rosenshine, 2008) for use during independent work (e.g., for defining unknown words in reading assignments, for solving challenging math word problems).	

3. Give Timely Performance Feedback	
Instructional Element	Notes
<input type="checkbox"/> Regular Feedback. The teacher provides timely and regular performance feedback and corrections throughout the lesson as needed to guide student learning (Burns, VanDerHeyden, & Boice).	
<input type="checkbox"/> Step-by-Step Checklists. For multi-step cognitive strategies, the teacher creates checklists for students to use to self-monitor performance (Rosenshine, 2008).	

4. Provide Opportunities for Review & Practice	
Instructional Element	Notes
<input type="checkbox"/> Spacing of Practice Throughout Lesson. The lesson includes practice activities spaced throughout the lesson. (e.g., through teacher demonstration; then group practice with teacher supervision and feedback; then independent, individual student practice) (Burns, VanDerHeyden, & Boice).	
<input type="checkbox"/> Guided Practice. When teaching challenging material, the teacher provides immediate corrective feedback to each student response. When the instructor anticipates the possibility of an incorrect response, that teacher forestalls student error through use of cues, prompts, or hints. The teacher also tracks student responding and ensures sufficient success during supervised lessons before having students practice the new skills or knowledge independently (Burns, VanDerHeyden, & Boice, 2008).	
<input type="checkbox"/> Support for Independent Practice. The teacher ensures that students have adequate support (e.g., clear and explicit instructions; teacher monitoring) to be successful during independent seatwork practice activities (Rosenshine, 2008).	
<input type="checkbox"/> Distributed Practice. The teacher reviews previously taught content one or more times over a period of several weeks or months (Pashler et al., 2007; Rosenshine & Stevens, 1995).	



References

- Baker, S., Gersten, R., & Lee, D. (2002). A synthesis of empirical research on teaching mathematics to low-achieving students. *The Elementary School Journal, 103*(1), 51-73.
- Burns, M. K., VanDerHeyden, A. M., & Boice, C. H. (2008). Best practices in intensive academic interventions. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp.1151-1162). Bethesda, MD: National Association of School Psychologists.
- Carnine, D.W. (1976). Effects of two teacher presentation rates on off-task behavior, answering correctly, and participation. *Journal of Applied Behavior Analysis, 9*, 199-206.
- Gettinger, M., & Seibert, J.K. (2002). Best practices in increasing academic learning time. In A. Thomas (Ed.), *Best practices in school psychology IV: Volume I* (4th ed., pp. 773-787). Bethesda, MD: National Association of School Psychologists.
- Pashler, H., Bain, P., Bottge, B., Graesser, A., Koedinger, K., McDaniel, M., and Metcalfe, J. (2007) *Organizing instruction and study to improve student learning* (NCER 2007-2004). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ncer.ed.gov>.
- Rosenshine, B. (2008). *Five meanings of direct instruction*. Center on Innovation & Improvement. Retrieved from <http://www.centerii.org>
- Rosenshine, B., & Stevens, R. (1995). Functions for teaching well-structured tasks. *Journal of Educational Research, 88*, 262-268.
- Skinner, C. H., Pappas, D. N., & Davis, K. A. (2005). Enhancing academic engagement: Providing opportunities for responding and influencing students to choose to respond. *Psychology in the Schools, 42*, 389-403.

<p>How Do We Reach Low-Performing Math Students?: Instructional Recommendations</p> <p><i>Important elements of math instruction for low-performing students</i> (Baker, Gersten, & Lee, 2002; p. 51):</p>	<p><i>IDEAS FOR IMPLEMENTATION</i></p>
<p>“Providing teachers and students with data on student performance”</p>	
<p>“Using peers as tutors or instructional guides”</p>	
<p>“Providing clear, specific feedback to parents on their children’s mathematics success”</p>	
<p>“Using principles of explicit instruction in teaching math concepts and procedures.”</p>	

Reference

Baker, S., Gersten, R., & Lee, D. (2002). A synthesis of empirical research on teaching mathematics to low-achieving students. *The Elementary School Journal*, 103(1), 51-73.



How To: Match the Student to the Right Academic Intervention with the Instructional Hierarchy

Teachers recognize that learning is a continual process of growth and improvement. The student who grapples with the rudiments of a skill such as reading appears very different from the more advanced student who is a proficient and self-motivated reader. Intuitively, then, educators understand that students advance through predictable stages of learning as they move from novice to expert in a particular skill.

The Common Core Standards, too, acknowledge advancing levels of learning, as can be seen in their wording. For example, a 6th-grade Common Core Standard for Mathematics on the Number System (CCSM.6.NS.2) states that the student will "fluently divide multi-digit numbers using the standard algorithm." (National Governors Association Center for Best Practices et al., 2010; p. 42). This standard assumes that the successful student is both (1) accurate and (2) proficient (i.e., fluent) in multi-digit division--and implies as well that the student (3) will retain the skill over time, (4) will have the endurance to complete grade-appropriate tasks that include the skill, and (5) can flexibly apply or generalize the skill to those situations and settings in which multi-digit division will be useful.

The Instructional Hierarchy-IH (Haring et al., 1978) is a helpful framework to analyze stages of student learning. The Instructional Hierarchy breaks the learning process into several levels, shifting from skill acquisition through skill mastery toward full integration of the skill into the student's academic repertoire. As presented here, the Instructional Hierarchy consists of 5 levels (Haring et al., 1978; Martens & Witt, 2004): Acquisition, fluency, retention, endurance, and generalization. Although initially formulated several decades ago, the Instructional Hierarchy is widely used as a model of learning in contemporary research into effective instruction and academic intervention (e.g., Ardoin & Daly, 2007).

By linking a particular student's target skill to the corresponding IH learning stage, the teacher can gain insight into what instructional supports and strategies will help that student to attain academic success. This linkage of learner to learning stage increases both teacher confidence and the probability for a positive student outcome. The table below (adapted from Haring et al., 1978 and Martens & Witt, 2004) gives instructors a brief description of each learning stage in the Instructional Hierarchy, along with suggested instructional strategies and a sample intervention idea:

1. Acquisition

Goal. At the beginning of the acquisition stage, the student has just begun to acquire the target skill. The objective is for the student to learn how to complete the skill accurately and repeatedly--without requiring the help of another.

Instructional Strategies. When just beginning a new skill, the student learns effectively through learning trials, in which the teacher: (1) *models* how to perform the skill, (2) *prompts* the student to perform the skill; and (3) *provides immediate performance feedback* to shape the student's learning in the desired direction. The teacher can maintain student motivation by providing frequent 'labeled praise' (that is, praise that specifically describes the student's positive academic behaviors and effort) and encouragement. As the student becomes accurate and more independent in the skill, the teacher can gradually fade prompting support.

Sample Intervention Idea. *Cover-copy-compare* is a student-delivered intervention that promotes acquisition of math-facts or spelling words (Skinner, McLaughlin, & Logan, 1997). The student is given a blank index card and a worksheet with spelling words or math-facts (with answers) appearing in the left column. One at a time, the student studies each original model (spelling word or math fact), covers the model with index card, from memory copies the model (spelling word or math-fact equation and answer)



into the right column of the worksheet, then uncovers the model to confirm that the student work is correct. NOTE: This intervention is most appropriate for use as the student has acquired some accuracy and independence in the target skill.

2. Fluency

Goal. The student who advances into the fluency stage can complete the target skill with accuracy but works relatively slowly. The objective is for the student to maintain accuracy while increasing speed of responding (fluency).

Instructional Strategies. The student who has acquired the skill but must become more proficient benefits from (1) brief, frequent opportunities to practice the skill coupled with (2) instructional feedback about increasing speed of performance (Martens & Witt, 2004). To facilitate fluency-building, the teacher structures group learning activities to give the student plenty of opportunities for active (observable) responding. The student is also given multiple opportunities for drill (direct repetition of the target skill) and practice (combining the target skill with other skills to solve problems or accomplish tasks). The student receives feedback on the fluency and accuracy of the academic performance, as well as praise and encouragement tied to increased fluency.

Sample Intervention Idea. An example of a group strategy to promote fluency in math-facts is *explicit time drill* (Rhymer et al., 2002). The teacher hands out a math-fact worksheet. Students are told that they will have 3 minutes to work on problems on the sheet. The teacher starts the stop watch and tells the students to start work. At the end of the first minute in the 3-minute span, the teacher 'calls time', stops the stopwatch, and tells the students to underline the last number written and to put their pencils in the air. Then students are told to resume work and the teacher restarts the stopwatch. This process is repeated at the end of minutes 2 and 3. At the conclusion of the 3 minutes, the teacher collects the student worksheets.

3. Retention

Goal. At the start of the retention stage, the student is reasonably fluent but is at risk of losing proficiency in the target skill through lapses in use. At this point, the objective is to 'overlearn' the skill to insure its retention even after long periods of disuse.

Instructional Strategies. Frequent opportunities for practice can be an effective method to entrench a skill and help the student to retain it over time (Martens & Witt, 2004). The teacher can schedule numerous practice episodes within a short time ('massed review') to promote initial fluency and then reinforce longer-term retention of the skill by scheduling additional periodic review ('distributed review') across longer spans of several weeks or even months (Pashler et al., 2007).

Sample Intervention Idea. An illustration of an intervention to promote retention is *repeated reading* (Lo, Cooke, & Starling, 2011). This intervention targets reading fluency: The student is given a passage and first 'rehearses' that passage by following along silently as the tutor reads it aloud. Then the student reads the same passage aloud several times in a row, with the tutor giving performance feedback after each re-reading. If a teacher uses a fluency-building strategy such as repeated reading but sets an ambitious outcome goal that is *above* the minimum benchmark for success, the resulting 'overlearning' can support long-term retention of the skill. For example, a 4th-grade teacher uses repeated reading with a student during a mid-year intervention and tracks the student's reading fluency using timed 1-minute curriculum-based measurement oral reading fluency passages. Benchmark norms (Hasbrouck & Tindal, 2005) suggest that the student will cross over into the 'low-risk' range for reading fluency if he can read at least 87 words



per minute according to the mid-year benchmark norms for grade 4. The teacher decides instead to overshoot, setting the outcome goal to a higher 95 words per minute ('overlearning') to give the student an additional margin of reading fluency to promote long-term skill retention.

4. Endurance

Goal. At the onset of the endurance stage, the student has become fluent in the target skill but will engage in it only reluctantly or for brief periods. The goal is to have the student persist in the skill for the longer intervals of time required in the classroom setting or expected for the student's age group. (Martens & Witt, 2004)

Instructional Strategies. Several instructional ideas can promote increased student endurance. In structuring lessons or independent work, for example, the teacher can gradually lengthen the period of time that the student spends in skills practice or use. The student can also be enlisted to self-monitor active engagement in skill-building activities--setting daily, increasingly ambitious work goals and then tracking whether he or she successfully reaches those goals. NOTE: If a student appears to lack 'endurance', the teacher should also verify that the fundamentals of good instruction are in place: for example, that the student can do the assigned work (instructional match), adequately understands directions, is receiving timely performance feedback, etc.

Sample Intervention Idea. An idea to increase student endurance provides breaks between gradually lengthening work intervals (*'fixed-time escape'*: adapted from Waller & Higbee, 2010). This strategy can be used with groups or individual students. The teacher first selects a target activity for endurance-building (e.g., independent reading). The teacher then sets the length of work periods by estimating the typical length of time that the student or group will currently engage in the activity (e.g., 5 minutes) before becoming off-task or disruptive. The teacher also decides on a length for brief 'escape' breaks (e.g., 2 minutes)--times when students can stop work and instead take part in preferred activities.

At the start of the intervention, the teacher directs the student or group to begin the target work activity. At the end of the work interval (e.g., 5 minutes), the teacher announces that the student or group can take a short break (e.g., 2 minutes). When that break is over, students are directed to again begin work. This sequence (work interval, escape interval) repeats until the scheduled work period is over. As students are able successfully to remain engaged during work periods, the teacher can gradually extend the length of these work periods by small increments, while reducing and then fading escape breaks, until work periods reach the desired length.

5. Generalization

Goal. At the beginning of the generalization stage, the student is accurate and fluent in using the target skill but does not always employ the skill where or when needed. The goal of this phase is to motivate the student to apply the skill in the widest possible range of appropriate settings and situations.

Instructional Strategies. The teacher can promote generalization of skills by first identifying the types of situations in which the student should apply the target skill and then programming instructional tasks that replicate or mimic these situations. So the teacher may create lessons in which students can generalize the target skills by interacting with a range of people, working with varied materials, and/or visiting different settings. The teacher can also use explicit prompts to remind students to apply skills in specific situations.

Sample Intervention Idea. For a student who does not always generalize the skill of carefully checking math assignments before turning them in, the teacher can work with that student to create a math *self-*



correction checklist (Uberti, Mastropieri, & Scruggs, 2004). Teacher and student meet to create a checklist of that student's most common sources of errors on math assignments. The student is then expected to use the checklist to review math work before submitting to the teacher. This intervention strategy can be adopted to other disciplines (e.g., writing assignments) as well. And completed checklists can be collected with assignments to verify student use.

References

Ardoin, S. P., & Daly III, E. J. (2007). Close encounters of the instructional kind-how the instructional hierarchy is shaping instructional research 30 years later. *Journal of Behavioral Education, 16*, 1-6.

Haring, N.G., Lovitt, T.C., Eaton, M.D., & Hansen, C.L. (1978). *The fourth R: Research in the classroom*. Columbus, OH: Merrill.

Hasbrouck, J., & Tindal, G. (2005). *Oral reading fluency: 90 years of measurement*. Eugene, OR: Behavioral Research & Teaching/University of Oregon. Retrieved from <http://brt.uoregon.edu>

Lo, Y., Cooke, N. L. & Starling, A. L. P. (2011). Using a repeated reading program to improve generalization of oral reading fluency. *Education and Treatment of Children, 34*(1), 115-140.

Martens, B. K., & Witt, J. C. (2004). Competence, persistence, and success: The positive psychology of behavioral skill instruction. *Psychology in the Schools, 41*(1), 19-30.

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common core state standards for mathematics*. Washington, DC: Authors.

Pashler, H., Bain, P., Bottge, B., Graesser, A., Koedinger, K., McDaniel, M., and Metcalfe, J. (2007). *Organizing instruction and study to improve student learning* (NCER 2007-2004). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ncer.ed.gov>.

Rhymer, K. N., Skinner, C. H., Jackson, S., McNeill, S., Smith, T., & Jackson, B. (2002). The 1-minute explicit timing intervention: The influence of mathematics problem difficulty. *Journal of Instructional Psychology, 29*(4), 305-311.

Skinner, C. H., McLaughlin, T. F., & Logan, P. (1997). Cover, copy, and compare: A self-managed academic intervention effective across skills, students, and settings. *Journal of Behavioral Education, 7*, 295-306.

Uberti, H. Z., Mastropieri, M. A., & Scruggs, T. E. (2004). Check it off: Individualizing a math algorithm for students with disabilities via self-monitoring checklists. *Intervention in School and Clinic, 39*(5), 269-275.

Waller, R. D., & Higbee, T. S. (2010). The effects of fixed-time escape on inappropriate and appropriate classroom behavior. *Journal of Applied Behavior Analysis, 43*, 149-153.



How To: Document Academic & Behavioral Interventions

When general-education students begin to struggle with academic or behavioral issues, the classroom teacher will typically select and implement one or more evidence-based intervention strategies to assist those students. But a strong intervention plan needs more than just well-chosen interventions. It also requires 4 additional components (Witt, VanDerHeyden, & Gilbertson, 2004): (1) student concerns should be clearly and specifically defined; (2) one or more methods of formative assessment should be used to track the effectiveness of the intervention; (3) baseline student data should be collected prior to the intervention; and (4) a goal for student improvement should be calculated before the start of the intervention to judge whether that intervention is ultimately successful. If a single one of these essential 4 components is missing, the intervention is to be judged as fatally flawed (Witt, VanDerHeyden, & Gilbertson, 2004) and as not meeting minimum Response to Intervention standards.

Teachers need a standard format to use in documenting their classroom intervention plans. The *Classroom Intervention Planning Sheet* that appears later in this article is designed to include all of the essential documentation elements of an effective intervention plan. The form includes space to document:

- *Case information.* In this first section of the form, the teacher notes general information, such as the name of the target student, the adult(s) responsible for carrying out the intervention, the date the intervention plan is being created, the expected start and end dates for the intervention plan, and the total number of instructional weeks that the intervention will be in place. Most importantly, this section includes a description of the student problem; research shows that the most significant step in selecting an effective classroom intervention is to correctly identify the target student concern(s) in clear, specific, measureable terms (Bergan, 1995).
- *Intervention.* The teacher describes the evidence-based intervention(s) that will be used to address the identified student concern(s). As a shortcut, the instructor can simply write the intervention name in this section and attach a more detailed intervention script/description to the intervention plan.
- *Materials.* The teacher lists any materials (e.g., flashcards, wordlists, worksheets) or other resources (e.g., Internet-connected computer) necessary for the intervention.
- *Training.* If adults and/or the target student require any training prior to the intervention, the teacher records those training needs in this section of the form.
- *Progress-Monitoring.* The teacher selects a method to monitor student progress during the intervention. For the method selected, the instructor records what type of data is to be used, collects and enters student baseline (starting-point) information, calculates an intervention outcome goal, and notes how frequently he or she plans to monitor the intervention.

A completed example of the *Classroom Intervention Planning Sheet* that includes a math computation intervention can be found later in this article.

While a simple intervention documentation form is a helpful planning tool, schools should remember that teachers will need other resources and types of assistance as well to be successful in selecting and using classroom interventions. For example, teachers should have access to an 'intervention menu' that contains evidence-based strategies to address the most common academic and behavioral concerns and should be able to get coaching support as they learn how to implement new classroom intervention ideas.

References

Bergan, J. R. (1995). Evolution of a problem-solving model of consultation. *Journal of Educational and Psychological Consultation*, 6(2), 111-123.

Witt, J. C., VanDerHeyden, A. M., & Gilbertson, D. (2004). Troubleshooting behavioral interventions. A systematic process for finding and eliminating problems. *School Psychology Review*, 33, 363-383.



Classroom Intervention Planning Sheet

This worksheet is designed to help teachers to quickly create classroom plans for academic and behavioral interventions. (For a tutorial on how to fill out this sheet, review the accompanying directions.)

Case Information		
<p>What to Write: Record the important case information, including student, person delivering the intervention, date of plan, start and end dates for the intervention plan, and the total number of instructional weeks that the intervention will run.</p>		
Student:	Interventionist(s):	Date Intervention Plan Was Written:
Date Intervention is to Start:	Date Intervention is to End:	Total Number of Intervention Weeks:
Description of the Student Problem:		

Intervention
<p>What to Write: Write a brief description of the intervention(s) to be used with this student. TIP: If you have a script for this intervention, you can just write its name here and attach the script to this sheet.</p>

Materials	Training
<p>What to Write: Jot down materials (e.g., flashcards) or resources (e.g., Internet-connected computer) needed to carry out this intervention.</p>	<p>What to Write: Note what training--if any--is needed to prepare adult(s) and/or the student to carry out the intervention.</p>

Progress-Monitoring	
<p>What to Write: Select a method to monitor student progress on this intervention. For the method selected, record what type of data is to be used, enter student baseline (starting-point) information, calculate an intervention outcome goal, and note how frequently you plan to monitor the intervention. Tip: Several ideas for classroom data collection appear on the right side of this table.</p>	
Type of Data Used to Monitor:	<p><u>Ideas for Intervention Progress-Monitoring</u></p> <ul style="list-style-type: none"> Existing data: grades, homework logs, etc. Cumulative mastery log Rubric Curriculum-based measurement Behavior report card Behavior checklist
Baseline	
Outcome Goal	
How often will data be collected? (e.g., daily, every other day, weekly):	



Classroom Intervention Planning Sheet: Math Computation Example

This worksheet is designed to help teachers to quickly create classroom plans for academic and behavioral interventions. (For a tutorial on how to fill out this sheet, review the accompanying directions.)

Case Information					
What to Write: Record the important case information, including student, person delivering the intervention, date of plan, start and end dates for the intervention plan, and the total number of instructional weeks that the intervention will run.					
Student:	<i>John Samuelson-Gr 4</i>	Interventionist(s):	<i>Mrs. Kennedy, classroom teacher</i>	Date Intervention Plan Was Written:	<i>10 October 2012</i>
Date Intervention is to Start:	<i>M 8 Oct 2012</i>	Date Intervention is to End:	<i>F 16 Nov 2012</i>	Total Number of Intervention Weeks:	<i>6 weeks</i>
Description of the Student Problem:		<i>Slow math computation speed (computes multiplication facts at 12 correct digits in 2 minutes, when typical gr 4 peers compute at least 24 correct digits).</i>			

Intervention
What to Write: Write a brief description of the intervention(s) to be used with this student. TIP: If you have a script for this intervention, you can just write its name here and attach the script to this sheet.
<i>Math Computation Time Drill. (Rhymer et al., 2002)</i> <i>Explicit time-drills are a method to boost students' rate of responding on arithmetic-fact worksheets: (1) The teacher hands out the worksheet. Students are instructed that they will have 3 minutes to work on problems on the sheet. (2) The teacher starts the stop watch and tells the students to start work. (3) At the end of the first minute in the 3-minute span, the teacher 'calls time', stops the stopwatch, and tells the students to underline the last number written and to put their pencils in the air. Then students are told to resume work and the teacher restarts the stopwatch. (4) This process is repeated at the end of minutes 2 and 3. (5) At the conclusion of the 3 minutes, the teacher collects the student worksheets.</i>

Materials	Training
What to Write: Jot down materials (e.g., flashcards) or resources (e.g., Internet-connected computer) needed to carry out this intervention.	What to Write: Note what training--if any--is needed to prepare adult(s) and/or the student to carry out the intervention.
<i>Use math worksheet generator on www.interventioncentral.org to create all time-drill and assessment materials.</i>	<i>Meet with the student at least once before the intervention to familiarize with the time-drill technique and timed math computation assessments.</i>

Progress-Monitoring		
What to Write: Select a method to monitor student progress on this intervention. For the method selected, record what type of data is to be used, enter student baseline (starting-point) information, calculate an intervention outcome goal, and note how frequently you plan to monitor the intervention. Tip: Several ideas for classroom data collection appear on the right side of this table.		
Type of Data Used to Monitor: <i>Curriculum-based measurement: math computation assessments: 2 minute single-skill probes</i>		<u>Ideas for Intervention Progress-Monitoring</u> <ul style="list-style-type: none"> Existing data: grades, homework logs, etc. Cumulative mastery log Rubric Curriculum-based measurement Behavior report card Behavior checklist
Baseline	Outcome Goal	
<i>12 correct digits per 2 minute probe</i>	<i>24 correct digits per 2 minute probe</i>	
How often will data be collected? (e.g., daily, every other day, weekly): <i>WEEKLY</i>		

Intervention & Related RTI Terms: Definitions

Educators who serve as interventionists should be able to define and distinguish among the terms *core instruction*, *intervention*, *instructional adjustment*, and *modification*. (In particular, interventionists should avoid using modifications as part of an RTI plan for a general education student, as they can be predicted to undermine the student's academic performance.) Here are definitions for these key terms.

- ❑ **Core Instruction.** Those instructional strategies that are used routinely with all students in a general-education setting are considered 'core instruction'. High-quality instruction is essential and forms the foundation of RTI academic support. NOTE: While it is important to verify that a struggling student receives good core instructional practices, those routine practices do not 'count' as individual student interventions.
- ❑ **Academic Intervention.** An academic *intervention* is a strategy used to teach a new skill, build fluency in a skill, or encourage a child to apply an existing skill to new situations or settings. An intervention can be thought of as "a set of actions that, when taken, have demonstrated ability to change a fixed educational trajectory" (Methe & Riley-Tillman, 2008; p. 37). As an example of an academic intervention, the teacher may select question generation (Davey & McBride, 1986.; Rosenshine, Meister & Chapman, 1996), a strategy in which the student is taught to locate or generate main idea sentences for each paragraph in a passage and record those 'gist' sentences for later review.
- ❑ **Instructional Adjustment (Accommodation).** An *instructional adjustment* (also known as an 'accommodation') is intended to help the student to fully access and participate in the general-education curriculum without changing the instructional content and without reducing the student's rate of learning (Skinner, Pappas & Davis, 2005). An instructional adjustment is intended to remove barriers to learning while still expecting that students will master the same instructional content as their typical peers. An instructional adjustment for students who are slow readers, for example, may include having them supplement their silent reading of a novel by listening to the book on tape. An instructional adjustment for unmotivated students may include breaking larger assignments into smaller 'chunks' and providing students with performance feedback and praise for each completed 'chunk' of assigned work (Skinner, Pappas & Davis, 2005).
- ❑ **Modification.** A modification changes the expectations of what a student is expected to know or do—typically by lowering the academic standards against which the student is to be evaluated. Examples of modifications are giving a student five math computation problems for practice instead of the 20 problems assigned to the rest of the class or letting the student consult course notes during a test when peers are not permitted to do so. Instructional modifications are essential elements on the Individualized Education Plans (IEPs) or Section 504 Plans of many students with special needs. Modifications are generally not included on a general-education student's RTI intervention plan, however, because the assumption is that the student can be successful in the curriculum with appropriate interventions and instructional adjustments alone. In fact, modifying the work of struggling general education students is likely to have a negative effect that works *against* the goals of RTI. Reducing academic expectations will result in these students falling further behind rather than closing the performance gap with peers

References

- Davey, B., & McBride, S. (1986). Effects of question-generation training on reading comprehension. *Journal of Educational Psychology, 78*, 256-262.
- Methe, S. A., & Riley-Tillman, T. C. (2008). An informed approach to selecting and designing early mathematics interventions. *School Psychology Forum: Research into Practice, 2*, 29-41.
- Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research, 66*, 181-221.
- Skinner, C. H., Pappas, D. N., & Davis, K. A. (2005). Enhancing academic engagement: Providing opportunities for responding and influencing students to choose to respond. *Psychology in the Schools, 42*, 389-403.



How To: Improve Student Self-Management Through Work-Planning Skills: Plan, Work, Evaluate, Adjust

It is no surprise to teachers that, when students have poor work-planning skills, their academic performance often suffers. Work-planning is the student's ability to inventory a collection of related sub-tasks to be done, set specific outcome goals that signify success on each sub-task, allocate time sufficient to carry out each sub-task, evaluate actual work performance, and make necessary adjustments in future work-planning as needed (Martin, Mithaug, Cox, Peterson, Van Dycke & Cash, 2003).. When students are deficient as work planners, the negative impact can be seen on in-class and homework assignments as well as on longer-term projects such as research papers. Teachers can develop students' work-planning skills by training them in a simple but effective sequence: to plan upcoming work, complete the work, evaluate their work performance, and adjust their future work plans based on experience (Martin et al., 2003).

The vehicle for teachers to train students to develop strong work-planning skills is through conferencing: the teacher and student meet for a pre-work *planning* conference and then meet again after the work is completed at a *self-evaluation* conference. NOTE: The *Student Independent Work: Planning Tool* that appears later in this document is a graphic organizer that can be used to structure and record these 2-part teacher-student conferences.

Phase 1: Work-Planning Conference

Before the student begins the assigned academic work, the teacher meets with the student to develop the work plan. (While the teacher often initially assumes a guiding role in the work-planning conference, the instructor gradually transfers responsibility for developing the plan to the student as that student's capacity for planning grows.)

There are 3 sections in the work-planning conference: (1) inventory the sub-tasks to be done, (2) assign an estimated time for completion, and (3) set a performance goal for each item on the task list:

1. *Inventory the sub-tasks to be done.* The student describes each academic task in clear and specific terms (e.g., "Complete first 10 problems on page 48 of math book", "write an outline from notes for history essay"). For this part of the work plan, the teacher may need to model for the student how to divide larger global assignments into component tasks.
2. *Assign an estimated time for completion.* The student decides how much time should be reserved to complete each task (e.g., For a math workbook assignment: "20 minutes" or "11:20 to 11:40"). Because students with limited planning skills can make unrealistic time projections for task completion, the teacher may need to provide additional guidance and modeling in time estimation during the first few planning sessions.
3. *Set a performance goal.* The student sets a performance goal to be achieved for each sub-task. Performance goals are dependent on the student and may reference the amount, accuracy, and/or qualitative ratings of the work: (e.g., for a reading assignment: "To read at least 5 pages from assigned text, and to take notes of the content"; for a math assignment: "At least 80% of problems correct"; for a writing assignment: "Rating of 4 or higher on class writing rubric"). The teacher can assist the student to set specific, achievable goals based on that student's current abilities and classroom curriculum expectations.



Phase 2: Self-Evaluation Conference

When the work has been completed, the teacher and student meet again to evaluate the student's performance. There are 2 sections to this conference: (1) Compare the student's actual performance to the original student goal; and (2) adjust future expectations and performance in light of the experience gained from the recently completed work.

1. *Compare the student's actual performance to the original student goal.* For each sub-task on the plan, the student compares his or her actual work performance to the original performance goal and notes whether the goal was achieved. In addition to noting whether the performance goal was attained, the student evaluates whether the sub-task was completed within the time allocated.
2. *Adjust future expectations and performance.* For each sub-task that the student failed to reach the performance goal within the time allocated, the student reflects on the experience and decides what adjustments to make on future assignments. For example, a student reviewing a homework work-plan who discovers that she reserved insufficient time to complete math word problems may state that, in future, she should allocate at least 30 minutes for similar sub-tasks. Or a student who exceeds his performance goal of no more than 4 misspellings in a writing assignment may decide in future to keep a dictionary handy to check the spelling of questionable words before turning in writing assignments.

References

Martin, J. E., Mithaug, D. E., Cox, P., Peterson, L. Y., Van Dycke, J. L., & Cash, M.E. (2003). Increasing self-determination: Teaching students to plan, work, evaluate, and adjust. *Exceptional Children*, 69, 431-447.



Student Independent Work: Planning Tool

Student: _____ Teacher/Staff Member: _____ Date: ___/___/___

		Planning	Planning	Planning	Self-Evaluation	Self-Evaluation
	Date:	Sub-Task: Describe each assignment sub-task to be completed.	Time Allocated: Estimate the time required for this task. E.g., "20 mins"; "11:20-11:40"	Performance Goal: Write your goal for the amount, accuracy, and/or quality of work to be completed.	Actual Performance: After the assignment, record the amount, accuracy, and/or quality of the work <i>actually completed</i> .	Goal Met?: Did you achieve the goal within the time allocated?
1	___/___/___					<input type="checkbox"/> YES <input type="checkbox"/> NO
2	___/___/___					<input type="checkbox"/> YES <input type="checkbox"/> NO
3	___/___/___					<input type="checkbox"/> YES <input type="checkbox"/> NO
4	___/___/___					<input type="checkbox"/> YES <input type="checkbox"/> NO

Adjustment: Find any 'NO' responses in the Goal Met? column. In the space below, write the number of that goal and your plan to improve on that goal next time.

Number of Goal Not Met & Action Plan to Fix: _____

Number of Goal Not Met & Action Plan to Fix: _____

Number of Goal Not Met & Action Plan to Fix: _____