RTI Toolkit: A Practical Guide for Schools

RTI: An Overview for Educators

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Frequently Asked Questions About…Response to Intervention

1. What is Response to Intervention (RTI)? RTI is a school-wide model of student support. While all students can benefit from the RTI model, a primary focus is students in general-education classrooms who are struggling with academic and/or behavior problems. The foundation of RTI in any school is strong core instruction happening in all classrooms. The school also uses screening data such as brief academic assessments, disciplinary office referrals, attendance, and grades to identify students who need additional intervention assistance. The school then designs individualized intervention plans for those at-risk students to meet their learning needs. All interventions used under RTI should be 'evidence-based': that is, they have been shown through rigorous research to be effective in school settings. When the school puts students on intervention plans, the school collects baseline data to estimate the student's current performance in the area(s) of academic or behavioral difficulty and sets goals for improvement. During the intervention, the student is monitored periodically so that the school can judge in a short amount of time (e.g., 6-8 instructional weeks) whether a particular intervention plan is effective.

2. What type of student is RTI designed to help? The RTI model benefits all students. The first area of focus for RTI is on high-quality universal instruction. In a typical school, however, it is estimated that about 20 percent of the general-education student population may not be successful even when receiving high-quality classroom instruction. These 'difficult-to-teach' students require more specialized intervention plans to supplement their core instruction. Schools can also see benefits in applying the standards of the RTI model to special education students. Schools should expect, for example, that the IEPs (Individualized Education Programs) of special needs students will contain evidence-based instructional and behavior management strategies, identify student baseline and performance goal levels, and require the collection of progress-monitoring data to determine if those students are in fact reaching their performance goals.

3. How does RTI organize a school's intervention services? RTI intervention services are set up in a multi-tier system, with intervention plans becoming increasingly intensive as students face a higher risk of school failure. The first tier of RTI support, Tier 1, is universal instruction/intervention and is available to all students. Tier 1 is the responsibility of the classroom teacher, who delivers strong core instruction and also employs a range of feasible, practical strategies to provide additional academic or behavioral support for struggling students. It should be noted that a classroom Tier 1 intervention plan continues as a required foundation even for those students who may eventually go on to receive more intensive intervention assistance at Tiers 2 and 3.

   In a typical school, up to 20 percent of students will need additional interventions to address academic delays beyond what is available in the classroom. Most of these students would receive supplemental Tier 2 intervention services. When setting up Tier 2 services, a school will typically adopt what is referred to as the 'standard treatment protocol' approach. That is, the school identifies common areas of student concern (e.g., deficits in general academic vocabulary, limited reading comprehension 'fix up' skills) and purchase or create an evidence-based 'standard treatment' program to target these student academic deficits. Tier 2 services are most often delivered in small groups (capped at 6-7 students) or via computer-based learning.

   Approximately 5 percent of general-education students in a typical school receive Tier 3 intervention support in a given year. The profile of a Tier 3 student is one who has not responded to lesser interventions and who is facing a potentially negative, high-stakes outcome such as course failure if that student cannot significantly improve his or her academic or behavioral performance. Most schools adopt a 'problem solving protocol' when planning intensive, Tier 3 interventions: The school establishes an RTI Problem-Solving Team that meets with the referring teacher(s) and efficiently uses the

intervention resources of the building to develop a customized intervention plan that matches the unique needs of the student.

4. What role do assessment and data collection play in the RTI process? Student assessment is a necessary part of RTI, as data allows the school to locate students who need intervention support and to judge in 'real time' whether specific interventions are actually helping those students. At Tier 1, the teacher who has a student on classroom intervention collects information from the instructional environment to show whether the student is benefiting from that intervention plan. Because teachers typically intervene proactively at Tier 1 to address emerging student deficits before they become major, the stakes are lower. Therefore, the kinds of data collected by teachers to document their classroom interventions can be varied and may not be as time-intensive or rigorous as data collection at the higher-stakes Tiers 2 and 3. At Tier 1, for example, a teacher may document a student's classroom writing intervention through work samples of student writing assignments, grades, occasional scoring of writing assignments using a rubric, and perhaps a weekly administration of a Curriculum-Based Measurement writing probe.

   RTI schools also adopt a proactive approach to identifying struggling learners by selecting several methods to screen the entire student population at several points per year. Schools may use a mix of data sources in their screenings, including brief, timed academic measures (e.g., Curriculum-Based Measures such as oral reading fluency probes and Maze Reading Comprehension passages); disciplinary office referrals; grades; attendance; recent state test results; etc. Individuals who are flagged in these universal screenings as needing additional intervention support are placed in supplemental (Tier 2 or 3) intervention services.

   Academic measures selected to monitor the progress of students at Tiers 2 and 3 should possess 'technical adequacy': that is, they should be valid, reliable, have multiple alternate forms to allow repeated administration, and be sensitive to short-term student academic gains. Examples of CBMs that can be useful for assessing academic skills include phonemic awareness, oral reading fluency, reading comprehension (Maze passage), math computation, and writing probes. Students who receive Tier 2 'standard treatment protocol' interventions should have their progress monitored at least 1-2 times per month. Students on high-stakes Tier 3 interventions overseen by the RTI Problem-Solving Team should be assessed at least weekly.

5. What is the role of the classroom teacher in the RTI model? The classroom teacher is responsible under RTI for providing high-quality core instruction to effectively reach the widest possible range of learners. Additionally, the teacher notes any struggling students who need additional 'differentiated' instructional or behavioral support and provides that support in the form of a Tier 1 (classroom) intervention plan. Of course, the teacher should document Tier 1 interventions. The teacher should also be prepared to refer any students who do not respond sufficiently to classroom Tier 1 interventions for higher levels of RTI support--while continuing to use RTI classroom strategies with those students. The classroom teacher should also contact parents of struggling students to share concerns about these students and to encourage open, positive and regular communication between school and home.

6. What is the parent's role in the RTI model? The school is responsible for finding ways for struggling students to be successful—whether or not parents choose to actively participate in their children's educational program. Nonetheless, there is wide agreement that parents play a crucial role in guiding and motivating their children toward academic success. For example, parents can serve as influential role models for work and study skills, set up and supervise homework sessions, stay in close communication with the school about their child's academic performance and behaviors, and dispense home privileges contingent on the effort that their child makes in school. There is no question that the protective factors offered by parents who are positively involved in their children's schooling directly promote academic success and support the mission of RTI. Schools must, however, also recognize that, for a variety of reasons, not all parents find it easy to be involved in their child's education. Schools can most fully engage the power of parent participation by expecting that teachers will contact parents when a student begins to experience difficulties in school, inviting parents to attend RTI Problem-Solving Team meetings, taking care that staff adopt respectful language and tone when speaking with parents about their children, and treating parents at all times as respected colleagues in the RTI process.

7. How can RTI information assist schools in identifying students who need special education services? When a student is being considered for possible special education services, the school must first answer a fundamental question: Are that student's academic problems primarily a result of educational factors such as a mismatch between student and instruction--or do they stem instead from a chronic, within-child condition such as a learning disability? The RTI model provides evidence that helps schools to rule out instructional explanations for underperformance by clearly defining a student's problems, matching those problems to evidence-based interventions, verifying that all interventions are fully carried out as designed, and collecting formative assessment data to judge whether the student has made adequate progress in moving from baseline to goal levels. In other words, when a general-education student is ultimately found to be a 'non-responder' to appropriate evidence-based interventions, that failure to respond can be viewed as one diagnostic marker serving as partial evidence for a possible underlying learning disability or other special education condition.

8. Why must schools use 'evidence-based' interventions in RTI? Schools have limited resources and time to put effective interventions in place for struggling students. That is simply a reality of our public education system. Therefore, the RTI model requires that schools be able to justify the intervention strategies that they select by showing that they are 'evidence-based—i.e., that there is sufficient research to support these strategies. Most researchers agree that evidence-based interventions are those whose effectiveness has been demonstrated through well-crafted studies that use rigorous research methodologies. Ideally, too, these studies should have been published in reputable research journals that have a blind peer-review process to ensure that only studies of the highest quality are published.

9. Is RTI required by law? RTI was first introduced to public schools across the nation with the reauthorization by Congress in 2004 of the Individuals With Disabilities Education Improvement Act (IDEIA 2004). This federal legislation encourages the spread of RTI in public education by directing states to allow any of their schools to adopt an RTI model if they so choose and by explicitly preventing states from mandating the continuing use of a test score discrepancy formula in diagnosing learning disabilities. However, IDEIA 2004 also lets states decide whether to *require* that their schools adopt RTI and –if so—what the particulars of each state's RTI model might look like. At present, then, the U.S. Department of Education strongly supports schools' efforts to restructure their student support according to RTI guidelines. However, schools should contact their state education departments for guidance in determining whether RTI is mandated statewide and for specifics about what RTI model(s) their state supports.

Intervention & Related RTI Terms: Definitions

Educators who serve as interventionists should be able to define and distinguish among the terms *core instruction*, *intervention*, *accommodation*, 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.

- 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.

- Accommodation. 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 accommodation is intended to remove barriers to learning while still expecting that students will master the same instructional content as their typical peers. An accommodation 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 accommodation 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 accommodations 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

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School-Wide Strategies for Managing...
READING

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The ability to read allows individuals access to the full range of a culture's artistic and scientific knowledge. Reading is a complex act. Good readers are able fluently to decode the words on a page, to organize and recall important facts in a text, to distill from a reading the author's opinions and attitudes, and to relate the content of an individual text to a web of other texts previously read. As the act of decoding becomes more effortless and automatic, the developing reader is able to devote a greater portion of cognitive energy to understanding the meaning of the text. Reading comprehension is not a single skill but consists of a cluster of competencies that range from elementary strategies for identifying and recalling factual content to highly sophisticated techniques for inferring an author's opinions and attitudes. As researcher Michael Pressley points out, reading comprehension skills can be thought of as unfolding along a timeline. Before beginning to read a particular selection, the skilled student reader must engage prior knowledge, predict what the author will say about the topic, and set specific reading goals. While reading, the good reader self-monitors his or her understanding of the text, rereads sentences and longer passages that are unclear, and updates predictions about the text based on what he or she has just read. After completing a text, the good reader summarizes its main points (perhaps writing them down), looks back in the text to clarify any points that are unclear, and continues to think about the text and its implications for a period of time. Reading comprehension can also be thought of as a bundle of interdependent skills that range from basic to more advanced. Teachers should ensure that students understand and appropriately use simple comprehension strategies (such as looking back in a text to clarify factual information) before teaching them advanced comprehension strategies such as SQ3R ('Survey, Question, Read, Recite, Review'). Ultimately, reading is a competency that is continually honed and improved over a lifetime. The teacher's goal is to build students into independent readers whose skills improve with self-guided practice. Below are a number of instructional strategies to promote word decoding, reading decoding, and reading comprehension.

Reading Comprehension: Activating Prior Knowledge *(Hansen, & Pearson, 1983)*. The instructor demonstrates to students how they can access their prior knowledge about a topic to improve comprehension of an article or story. The instructor first explains the benefit of using prior knowledge. The instructor tells students that recalling their prior experiences (“their own life”) can help them to understand the content of their reading--because new facts make sense only when we connect them to what we already know. Next, the instructor demonstrates the text prediction strategy to the class by selecting a sample passage (displayed as an overhead) and using a “think-aloud” approach to illustrate the strategy steps: STEP 1: THINK ABOUT WHAT AND WHY: The teacher connects the article to be read with the instructor's own prior knowledge about the topic. The teacher might say, for example, “I am about to read a short article about [topic]. Before I read the article, though, I should think about my life experiences and what they might tell me about [topic]. By thinking about my own life, I will better understand the article.” STEP 2: SELECT MAIN IDEAS FROM THE ARTICLE TO POSE PRIOR-KNOWLEDGE AND PREDICTION QUESTIONS. The teacher chooses up to 3 main ideas that appear in the article or story. For each key idea, the instructor poses one question requiring that readers tap their own prior knowledge of the idea (e.g., “What are your own attitudes and experiences about [idea]?”) and another that prompts them to predict how the article or story might deal with the idea (e.g., "What do you think the article will say about [idea]?"). STEP 3: HAVE STUDENTS READ THE ARTICLE INDEPENDENTLY. Once the teacher has primed students' prior knowledge by having them respond to the series of prior-knowledge and prediction questions, students read the selection independently.

Reading Comprehension: Anticipation Reading Guide *(Duffelmeyer, 1994; Merkley, 1996)*. To activate their prior knowledge of a topic, students complete a brief questionnaire on which they must

express agreement or disagreement with 'opinion' questions tied to the selection to be read; students then engage in a class discussion of their responses. The instructor first constructs the questionnaire. Each item on the questionnaire is linked to the content of the article or story that the students will read. All questionnaire items use a 'forced-choice' format in which the student must simply agree or disagree with the item. After students have completed the questionnaire, the teacher reviews responses with the class, allowing students an opportunity to explain their rationale for their answers. Then students read the article or story.

Reading Comprehension: Building Comprehension of Textbook Readings Through SQ3R *(Robinson, 1946)*. Students grasp a greater amount of content from their textbook readings when they use the highly structured SQ3R ('Survey, Question, Read, Recite, Review') process. (1) SURVEY: Prior to reading a section of the textbook, the reader surveys the selection by examining charts, tables, or pictures, looking over chapter headings and subheadings, and reading any individual words or blocks of text highlighted by the publisher. (2) QUESTION: In preparation for reading, the reader next generates and writes down a series of key 'questions' about the content based on the material that he or she has surveyed. (3) READ: As the reader reads through the selection, he or she seeks answers to the questions posed. (4) RECITE: After finishing the selection, the reader attempts to recite from memory the answers to the questions posed. If stuck on a question, the reader scans the text to find the answer. (5) REVIEW: At the end of a study session, the reader reviews the list of key questions and again recites the answers. If the reader is unable to recall an answer, he or she goes back to the text to find it.

Reading Comprehension: Conversing With the Writer Through Text Annotation *(Harris, 1990; Sarkisian, Toscano, Tomkins-Tinch, & Casey, 2003)*. Students are likely to increase their retention of information when they interact actively with their reading by jotting comments in the margin of the text. Students are taught to engage in an ongoing 'conversation' with the writer by recording a running series of brief comments in the margins of the text. Students may write annotations to record their opinions of points raised by the writer, questions triggered by the reading, or vocabulary words that the reader does not know and must look up. NOTE: Because this strategy requires that students write in the margins of a book or periodical, text annotation is suitable for courses in which students have either purchased the textbook or have photocopies of the reading available on which to write.

Reading Comprehension: Mining Information from the Text Book *(Garner, Hare, Alexander, Haynes, & Vinograd, 1984)*. With ‘text lookback’ the student increases recall of information by skimming previously read material in the text in a structured manner to look that information up. First, define for the student the difference between ‘lookback’ and ‘think’ questions. ‘Lookback’ questions are those that tell us that the answer can be found right in the article, while ‘think’ questions are those that ask you to give your own opinion, belief, or ideas. When faced with a lookback question, readers may need to look back in the article to find the information that they need. But readers can save time by first skimming the article to get to the general section where the answer to the question is probably located. To skim efficiently, the student should (1) read the text-lookback question carefully and highlight the section that tells the reader what to look for (e.g., “What does the article say are the FIVE MOST ENDANGERED SPECIES of whales today?”), (2) look for titles, headings, or illustrations in the article that might tell the reader where the information that he or she is looking for is probably located, (3) read the beginning and end sentences in individual paragraphs to see if that paragraph might contain the desired information.

Reading Comprehension: Previewing the Chapter *(Gleason, Archer, & Colvin, 2002)*. The student who systematically previews the contents of a chapter before reading it increases comprehension--by creating a mental map of its contents, activating prior knowledge about the topic, and actively forming predictions about what he or she is about to read. In the previewing technique, the student browses the chapter headings and subheadings. The reader also studies any important graphics and looks over review questions at the conclusion of the chapter. Only then does the student begin reading the selection.

Reading Comprehension: Question-Answer Relationships (QAR) *(Raphael, 1982; Raphael, 1986)*. Students are taught to identify 'question-answer relationships', matching the appropriate strategy to comprehension questions based on whether a question is based on fact, requires inferential thinking, or draws upon the reader's own experience. Students learn that answers to RIGHT THERE questions are fact-based and can be found in a single sentence, often accompanied by 'clue' words that also appear in the question. Students are informed that they will also find answers to THINK AND SEARCH questions in the text--but must piece those answers together by scanning the text and making connections between different pieces of factual information. AUTHOR AND YOU questions require that students take information or opinions that appear in the text and combine them with the reader's own experiences or opinions to formulate an answer. ON MY OWN questions are based on the students' own experiences and do not require knowledge of the text to answer. Students are taught to identify question-answer relationships in class discussion and demonstration. They are then given specific questions and directed to identify the question type and to use the appropriate strategy to answer.

Reading Comprehension: Reading Actively *(Gleason, Archer, & Colvin, 2002)*. By reading, recalling, and reviewing the contents of every paragraph, the student improves comprehension of the longer passage. The instructor teaches students to first read through the paragraph, paying particular attention to the topic and important details and facts. The instructor then directs students to cover the paragraph and state (or silently recall) the key details of the passage from memory. Finally, the instructor prompts students to uncover the passage and read it again to see how much of the information in the paragraph the student had been able to accurately recall. This process is repeated with all paragraphs in the passage.

Reading Fluency: Listening, Reading, And Receiving Corrective Feedback *(Rose & Sherry, 1984; Van Bon, Boksebeld, Font Freide, & Van den Hurk, J.M., 1991)*. The student 'rehearses' a text by first following along silently as a more accomplished reader (tutor) reads a passage aloud; then the student reads the same passage aloud while receiving corrective feedback as needed. The student and tutor sit side-by-side at a table with a book between them. The tutor begins by reading aloud from the book for about 2 minutes while the student reads silently. If necessary, the tutor tracks his or her progress across the page with an index finger to help the student to keep up. At the end of the 2 minutes, the tutor stops reading and asks the student to read aloud. If the student commits a reading error or hesitates for longer than 3-5 seconds, the tutor tells the student the correct word and has the student continue reading. For each new passage, the tutor first reads the passage aloud before having the student read aloud.

Reading Fluency: Repeated Reading *(Herman, 1985; Rashotte & Torgesen, 1985; Rasinski, 1990)*. The student increases fluency in decoding by repeatedly reading the same passage while receiving help with reading errors. A more accomplished reader (tutor) sits with the student in a quiet location with a book positioned between them. The tutor selects a passage in the book of about 100 to 200 words in length. The tutor directs the student to read the passage aloud. If the student misreads a word or hesitates for longer than 5 seconds, the tutor reads the word aloud and has the student repeat the word correctly before continuing through the passage. If the student asks for help with any word, the tutor reads the word aloud. If the student requests a word definition, the tutor gives the definition. When the student has completed the passage, the tutor directs the student to read the passage again. The tutor directs the student to continue rereading the same passage until either the student has read the passage a total of 4 times or the student reads the passage at the rate of at least 85 to 100 words per minute. Then tutor and student select a new passage and repeat the process.

Word Decoding: Teach a Hierarchy of Strategies *(Haring, Lovitt, Eaton & Hansen, 1978)*. The student has a much greater chance of successfully decoding a difficult word when he or she uses a 'Word Attack Hierarchy'--a coordinated set of strategies that move from simple to more complex. The student uses successive strategies until solving the word. (1) When the student realizes that he or she has misread a word, the student first attempts to decode the word again. (2) Next, the

student reads the entire sentence, using the context of that sentence to try to figure out the word's meaning--and pronunciation. (3) The student breaks the word into parts, pronouncing each one. (4) If still unsuccessful, the student uses an index card to cover sections of the word, each time pronouncing only the part that is visible. The student asks 'What sound does ___ make?, using phonics information to sound out the word. (5) If still unsuccessful, the student asks a more accomplished reader to read the word.

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Paired Reading

Description: The student reads aloud in tandem with an accomplished reader. At a student signal, the helping reader stops reading, while the student continues on. When the student commits a reading error, the helping reader resumes reading in tandem.

Materials:

- Reading book

Preparation:

- The teacher, parent, adult tutor, or peer tutor working with the student should be trained in advance to use the paired-reading approach.

Intervention Script:

1. Sit with the student in a quiet location without too many distractions. Position the book selected for the reading session so that both you and the student can easily follow the text.

2. Say to the student, *"Now we are going to read aloud together for a little while. Whenever you want to read alone, just tap the back of my hand like this* [demonstrate] *and I will stop reading. If you come to a word you don't know, I will tell you the word and begin reading with you again."*

3. Begin reading aloud with the student. If the student misreads a word, point to the word and pronounce it. Then have the student repeat the word. When the student reads the word correctly, resume reading through the passage.

4. When the child delivers the appropriate signal (a hand tap), stop reading aloud and instead follow along silently as the student continues with oral reading. Be sure occasionally to praise the student in specific terms for good reading (e.g., "That was a hard word. You did a nice job sounding it out!").

5. If, while reading alone, the child either commits a reading error or hesitates for longer than 5 seconds, point to the error-word and pronounce it. Then tell the student to say the word. When the student pronounces the error-word correctly, begin reading aloud again in unison with the student.

6. Continue reading aloud with the student until he or she again signals to read alone.

Tips:

Consider Using Paired Reading for Peer Tutoring or as a Parent Strategy. Paired reading is a highly structured but simple strategy that can easily be taught to others—including to school-age children and youth. If you have a pool of responsible older students available you may want to create a cross-age peer tutoring program that uses

paired reading as its central intervention. Or train parents to use this simple reading strategy when they read with their children at home.

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Reading Comprehension 'Fix-Up' Skills: A Toolkit

Good readers continuously monitor their understanding of informational text. When necessary, they also take steps to improve their understanding of text through use of reading comprehension 'fix-up' skills. Presented here are a series of fix-up skill strategies that can help struggling students to better understand difficult reading assignments.

- [Core Instruction] Providing Main Idea Practice through 'Partner Retell' (Carnine & Carnine, 2004). Students in a group or class are assigned a text selection to read silently. Students are then paired off, with one student assigned the role of 'reteller' and the other appointed as 'listener'. The reteller recounts the main idea to the listener, who can comment or ask questions. The teacher then states the main idea to the class. Next, the reteller locates two key details from the reading that support the main idea and shares these with the listener. At the end of the activity, the teacher does a spot check by randomly calling on one or more students in the listener role and asking them to recap what information was shared by the reteller.

- [Accommodation] Developing a Bank of Multiple Passages to Present Challenging Concepts (Hedin & Conderman, 2010; Kamil et al., 2008; Texas Reading Initiative, 2002). The teacher notes which course concepts, cognitive strategies, or other information will likely present the greatest challenge to students. For these 'challenge' topics, the teacher selects alternative readings that present the same general information and review the same key vocabulary as the course text but that are more accessible to struggling readers (e.g., with selections written at an easier reading level or that use graphics to visually illustrate concepts). These alternative selections are organized into a bank. Students are encouraged to engage in wide reading by choosing selections from the bank as a means to better understand difficult material.

- [Student Strategy] Promoting Understanding & Building Endurance through Reading-Reflection Pauses (Hedin & Conderman, 2010). The student decides on a reading interval (e.g., every four sentences; every 3 minutes; at the end of each paragraph). At the end of each interval, the student pauses briefly to recall the main points of the reading. If the student has questions or is uncertain about the content, the student rereads part or all of the section just read. This strategy is useful both for students who need to monitor their understanding as well as those who benefit from brief breaks when engaging in intensive reading as a means to build up endurance as attentive readers.

- [Student Strategy] Identifying or Constructing Main Idea Sentences (Davey & McBride, 1986; Rosenshine, Meister & Chapman, 1996). For each paragraph in an assigned reading, the student either (a) highlights the main idea sentence or (b) highlights key details and uses them to write a 'gist' sentence. The student then writes the main idea of that paragraph on an index card. On the other side of the card, the student writes a question whose answer is that paragraph's main idea sentence. This stack of 'main idea' cards becomes a useful tool to review assigned readings.

- [Student Strategy] Restructuring Paragraphs with Main Idea First to Strengthen 'Rereads' (Hedin & Conderman, 2010). The student highlights or creates a main idea sentence for each paragraph in the assigned reading. When rereading each paragraph of the selection, the student (1) reads the main idea sentence or student-generated 'gist' sentence first (irrespective of where that sentence actually falls in the paragraph); (2) reads the remainder of the paragraph, and (3) reflects on how the main idea relates to the paragraph content.

- [Student Strategy] Summarizing Readings (Boardman et al., 2008). The student is taught to summarize readings into main ideas and essential details--stripped of superfluous content. The act of summarizing longer readings can promote understanding and retention of content while the summarized text itself can be a useful study tool.

- [Student Strategy] Linking Pronouns to Referents (Hedin & Conderman, 2010). Some readers lose the connection between pronouns and the nouns that they refer to (known as 'referents')—especially when reading challenging text. The student is encouraged to circle pronouns in the reading, to explicitly identify each pronoun's referent, and (optionally) to write next to the pronoun the name of its referent. For example, the student may add the referent to a pronoun in this sentence from a biology text: *"The Cambrian Period is the first geological age that has large numbers of multi-celled organisms associated with* ***it*** *Cambrian Period."*

- [Student Strategy] Apply Vocabulary 'Fix-Up' Skills for Unknown Words (Klingner & Vaughn, 1999). When confronting an unknown word in a reading selection, the student applies the following vocabulary 'fix-up' skills:

  1. Read the sentence again.
  2. Read the sentences before and after the problem sentence for clues to the word's meaning.
  3. See if there are prefixes or suffixes in the word that can give clues to meaning.
  4. Break the word up by syllables and look for 'smaller words' within.

- [Student Strategy] Compiling a Vocabulary Journal from Course Readings (Hedin & Conderman, 2010). The student highlights new or unfamiliar vocabulary from course readings. The student writes each term into a vocabulary journal, using a standard 'sentence-stem' format: e.g., "*Mitosis* means…" or "A *chloroplast* is…". If the student is unable to generate a definition for a vocabulary term based on the course reading, he or she writes the term into the vocabulary journal without definition and then applies other strategies to define the term: e.g., look up the term in a dictionary; use Google to locate two examples of the term being used correctly in context; ask the instructor, etc.).

- [Student Strategy] Encouraging Student Use of Text Enhancements (Hedin & Conderman, 2010). Text enhancements can be used to tag important vocabulary terms, key ideas, or other reading content. If working with photocopied material, the student can use a highlighter--but should limit highlighting to important text elements such as main idea and key vocabulary terms. Another enhancement strategy is the 'lasso and rope' technique—using a pen or pencil to circle a vocabulary term and then drawing a line that connects that term to its underlined definition. If working from a textbook, the student can cut sticky notes into strips. These strips can be inserted in the book as pointers to text of interest. They can also be used as temporary labels—e.g., for writing a vocabulary term and its definition.

- [Student Strategy] Reading Actively Through Text Annotation (Harris, 1990; Sarkisian et al., 2003). Students are likely to increase their retention of information when they interact actively with their reading by jotting comments in the margin of the text. Using photocopies, the student is taught to engage in an ongoing 'conversation' with the writer by recording a running series of brief comments in the margins of the text. The student may write annotations to record opinions about points raised by the writer, questions triggered by the reading, or unknown vocabulary words.

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School-Wide Strategies for Managing... MATHEMATICS

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Mathematics instruction is a lengthy, incremental process that spans all grade levels. As children begin formal schooling in kindergarten, they develop 'number sense', an intuitive understanding of foundation number concepts and relationships among numbers. A central part of number sense is the student's ability to internalize the number line as a precursor to performing mental arithmetic. As students progress through elementary school, they must next master common math operations (addition, subtraction, multiplication, and division) and develop fluency in basic arithmetic combinations ('math facts'). In later grades, students transition to applied, or 'word', problems that relate math operations and concepts to real-world situations. Successful completion of applied problems requires that the student understand specialized math vocabulary, identify the relevant math operations needed to solve the problem while ignoring any unnecessary information also appearing in that written problem, translate the word problem from text format into a numeric equation containing digits and math symbols, and then successfully solve. It is no surprise, then, that there are a number of potential blockers to student success with applied problems, including limited reading decoding and comprehension skills, failure to acquire fluency with arithmetic combinations (math facts), and lack of proficiency with math operations. Deciding what specific math interventions might be appropriate for any student must therefore be a highly individualized process, one that is highly dependent on the student's developmental level and current math skills, the requirements of the school district's math curriculum, and the degree to which the student possesses or lacks the necessary auxiliary skills (e.g., math vocabulary, reading comprehension) for success in math. Here are some wide-ranging classroom (Tier I RTI) ideas for math interventions that extend from the primary through secondary grades.

Applied Problems: Encourage Students to Draw to Clarify Understanding *(Van Essen & Hamaker, 1990; Van Garderen, 2006)*. Making a drawing of an applied, or 'word', problem is one easy heuristic tool that students can use to help them to find the solution. An additional benefit of the drawing strategy is that it can reveal to the teacher any student misunderstandings about how to set up or solve the word problem. To introduce students to the drawing strategy, the teacher hands out a worksheet containing at least six word problems. The teacher explains to students that making a picture of a word problem sometimes makes that problem clearer and easier to solve. The teacher and students then independently create drawings of each of the problems on the worksheet. Next, the students show their drawings for each problem, explaining each drawing and how it relates to the word problem. The teacher also participates, explaining his or her drawings to the class or group. Then students are directed independently to make drawings as an intermediate problem-solving step when they are faced with challenging word problems. NOTE: This strategy appears to be more effective when used in later, rather than earlier, elementary grades.

Applied Problems: Improving Performance Through a 4-Step Problem-Solving Approach *(Pólya, 1957; Williams, 2003)*. Students can consistently perform better on applied math problems if they follow an efficient 4-step plan of understanding the problem, devising a plan, carrying out the plan, and looking back. (1) UNDERSTAND THE PROBLEM. To fully grasp the problem, the student may restate the problem in his or her own words, note key information, and identify missing information. (2) DEVISE A PLAN. In mapping out a strategy to solve the problem, the student may make a table, draw a diagram, or translate the verbal problem into an equation. (3) CARRY OUT THE PLAN. The student implements the steps in the plan, showing work and checking work for each step. (4) LOOK BACK. The student checks the results. If the answer is written as an equation, the student puts the results in words and checks whether the answer addresses the question posed in the original word problem.

Math Computation: Boost Fluency Through Explicit Time-Drills *(Rhymer, Skinner, Jackson, McNeill, Smith & Jackson, 2002; Skinner, Pappas & Davis, 2005; Woodward, 2006)*. Explicit time-drills are a method to boost students' rate of responding on math-fact worksheets. The teacher hands out the 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. TIPS: Explicit time-drills work best on 'simple' math facts requiring few computation steps. They are less effective on more complex math facts. Also, a less intrusive and more flexible version of this intervention is to use time-prompts while students are working independently on math facts to speed their rate of responding. For example, at the end of every minute of seatwork, the teacher can call the time and have students draw a line under the item that they are working on when that minute expires.

Math Computation: Motivate With 'Errorless Learning' Worksheets *(Caron, 2007)*. Reluctant students can be motivated to practice math number problems to build computational fluency when given worksheets that include an answer key (number problems with correct answers) displayed at the top of the page. In this version of an 'errorless learning' approach, the student is directed to complete math facts as quickly as possible. If the student comes to a number problem that he or she cannot solve, the student is encouraged to locate the problem and its correct answer in the key at the top of the page and write it in. Such speed drills build computational fluency while promoting students' ability to visualize and to use a mental number line. TIP: Consider turning this activity into a 'speed drill'. The student is given a kitchen timer and instructed to set the timer for a predetermined span of time (e.g., 2 minutes) for each drill. The student completes as many problems as possible before the timer rings. The student then graphs the number of problems correctly computed each day on a time-series graph, attempting to better his or her previous score.

Math Computation: Two Ideas to Jump-Start Active Academic Responding *(Skinner, Pappas & Davis, 2005)*. Research shows that when teachers use specific techniques to motivate their classes to engage in higher rates of active and accurate academic responding, student learning rates are likely to go up. Here are two ideas to accomplish increased academic responding on math tasks. First, break longer assignments into shorter assignments with performance feedback given after each shorter 'chunk' (e.g., break a 20-minute math computation worksheet task into 3 seven-minute assignments). Breaking longer assignments into briefer segments also allows the teacher to praise struggling students more frequently for work completion and effort, providing an additional 'natural' reinforcer. Second, allow students to respond to easier practice items orally rather than in written form to speed up the rate of correct responses.

Math Homework: Motivate Students Through Reinforcers, Interesting Assignments, Homework Planners, and Self-Monitoring *(Bryan & Sullivan-Burstein, 1998)*. Improve students' rate of homework completion and quality by using reinforcers, motivating 'real-life' assignments, a homework planner, and student self-monitoring. (1) Reinforcers: Allow students to earn a small reward (e.g., additional free time) when they turn in all homework assignments for the week. (2) 'Real-life' Assignments: Make homework meaningful by linking concepts being taught to students' lives. In a math lesson on estimating area, for example, give students the homework task of calculating the area of their bedroom and estimating the amount of paint needed to cover the walls. (3) Homework Planner: Teach students to use a homework planner to write down assignments, organize any materials (e.g., worksheets) needed for homework, transport completed homework safely back to school, and provide space for parents and teachers to communicate about homework via written school-home notes. (4) Student Self-Monitoring: Direct students to chart their homework completion each week. Have students plot the number of assignments turned in on-time in green, assignments not turned in at all in red, and assignments turned in late in yellow.

Math Instruction: Consolidate Student Learning During Lecture Through the Peer-Guided Pause *(Hawkins, & Brady, 1994)*. During large-group math lectures, teachers can help students to retain more instructional content by incorporating brief Peer Guided Pause sessions into lectures. Students are trained to work in pairs. At one or more appropriate review points in a lecture period, the instructor directs students to pair up to work together for 4 minutes. During each Peer Guided Pause, students are given a worksheet that contains one or more correctly completed word or number problems illustrating the math concept(s) covered in the lecture. The sheet also contains several additional, similar problems that pairs of students work cooperatively to complete, along with an answer key. Student pairs are reminded to (a) monitor their understanding of the lesson concepts; (b) review the correctly math model problem; (c) work cooperatively on the additional problems, and (d) check their answers. The teacher can direct student pairs to write their names on the practice sheets and collect them as a convenient way to monitor student understanding.

Math Instruction: Increase Student Engagement and Improve Group Behaviors With Response Cards *(Armendariz & Umbreit, 1999; Lambert, Cartledge, Heward & Lo, 2006)*. Response cards can increase student active engagement in group math activities while reducing disruptive behavior. In the group-response technique, all students in the classroom are supplied with an erasable tablet ('response card'), such as a chalk slate or laminated white board with erasable marker. The teacher instructs at a brisk pace. The instructor first poses a question to the class. Students are given sufficient wait time for each to write a response on his or her response card. The teacher then directs students to present their cards. If most or all of the class has the correct answer, the teacher praises the group. If more than one quarter of the students records an incorrect answer on their cards, however, the teacher uses guided questions and demonstration to steer students to the correct answer.

Math Instruction: Maintain a Supportive Atmosphere for Classroom "Math Talk" *(Cooke & Adams, 1998)*. Teachers can promote greater student 'risk-taking' in mathematics learning when they cultivate a positive classroom atmosphere for math discussions while preventing peers from putting each other down. The teacher models behavioral expectations for open, interactive discussions, praises students for their class participation and creative attempts at problem-solving, and regularly points out that incorrect answers and misunderstandings should be celebrated—as they often lead to breakthroughs in learning. The teacher uses open-ended comments (e.g., "What led you to that answer?") as tools to draw out students and encourage them to explore and apply math concepts in group discussion. Students are also encouraged in a supportive manner to evaluate each other's reasoning. However, the teacher intervenes immediately to prevent negative student comments or 'put-downs' about peers. As with any problem classroom behavior, a first offense requires that the student meet privately with the instructor to discuss teacher expectations for positive classroom behavior. If the student continues to put down peers, the teacher imposes appropriate disciplinary consequences.

Math Instruction: Support Students Through a Wrap-Around Instruction Plan *(Montague, 1997; Montague, Warger & Morgan, 2000)*. When teachers instruct students in more complex math cognitive strategies, they must support struggling learners with a 'wrap-around' instructional plan. That plan incorporates several elements: (a) Assessment of the student's problem-solving skills. The instructor first verifies that the student has the necessary academic competencies to learn higher-level math content, including reading and writing skills, knowledge of basic math operations, and grasp of required math vocabulary. (b) Explicit instruction. The teacher presents new math content in structured, highly organized lessons. The instructor also uses teaching tools such as Guided Practice (moving students from known material to new concepts through a thoughtful series of teacher questions) and 'overlearning' (teaching and practicing a skill with the class to the point at which students develop automatic recall and control of it). (c) Process modeling. The teacher adopts a 'think aloud' approach, or process modeling, to verbally reveal his or her cognitive process to the class while using a cognitive strategy to solve a math problem. In turn, students are encouraged to think aloud when applying the same strategy—first as part of a whole-class or cooperative learning group, then independently. The teacher observes students

during process modeling to verify that they are correctly applying the cognitive strategy. (d) Performance feedback. Students get regular performance feedback about their level of mastery in learning the cognitive strategy. That feedback can take many forms, including curriculum-based measurement, timely corrective feedback, specific praise and encouragement, grades, and brief teacher conferences. (e) Review of mastered skills or material. Once the student has mastered a cognitive strategy, the teacher structures future class lessons or independent work to give the student periodic opportunities to use and maintain the strategy. The teacher also provides occasional brief 'booster sessions', reteaching steps of the cognitive strategy to improve student retention.

Math Instruction: Unlock the Thoughts of Reluctant Students Through Class Journaling *(Baxter, Woodward & Olson, 2005)*. Students can effectively clarify their knowledge of math concepts and problem-solving strategies through regular use of class 'math journals'. Journaling is a valuable channel of communication about math issues for students who are unsure of their skills and reluctant to contribute orally in class. At the start of the year, the teacher introduces the journaling assignment, telling students that they will be asked to write and submit responses at least weekly to teacher-posed questions. At first, the teacher presents 'safe' questions that tap into the students' opinions and attitudes about mathematics (e.g., 'How important do you think it is nowadays for cashiers in fast-food restaurants to be able to calculate in their head the amount of change to give a customer?"). As students become comfortable with the journaling activity, the teacher starts to pose questions about the students' own mathematical thinking relating to specific assignments. Students are encouraged to use numerals, mathematical symbols, and diagrams in their journal entries to enhance their explanations. The teacher provides brief written comments on individual student entries, as well as periodic oral feedback and encouragement to the entire class on the general quality and content of class journal responses. Regular math journaling can prod students to move beyond simple 'rote' mastery of the steps for completing various math problems toward a deeper grasp of the math concepts that underlie and explain a particular problem-solving approach. Teachers will find that journal entries are a concrete method for monitoring student understanding of more abstract math concepts. To promote the quality of journal entries, the teacher might also assign them an effort grade that will be calculated into quarterly math report card grades.

Math Problem-Solving: Help Students Avoid Errors With the 'Individualized Self-Correction Checklist' *(Zrebiec Uberti, Mastropieri & Scruggs, 2004)*. Students can improve their accuracy on particular types of word and number problems by using an 'individualized self-instruction checklist' that reminds them to pay attention to their own specific error patterns. To create such a checklist, the teacher meets with the student. Together they analyze common error patterns that the student tends to commit on a particular problem type (e.g., 'On addition problems that require carrying, I don't always remember to carry the number from the previously added column.'). For each type of error identified, the student and teacher together describe the appropriate step to take to prevent the error from occurring (e.g., 'When adding each column, make sure to carry numbers when needed.'). These self-check items are compiled into a single checklist. Students are then encouraged to use their individualized self-instruction checklist whenever they work independently on their number or word problems. As older students become proficient in creating and using these individualized error checklists, they can begin to analyze their own math errors and to make their checklists independently whenever they encounter new problem types.

Math Review: Balance Massed & Distributed Practice *(Carnine, 1997)*. Teachers can best promote students acquisition and fluency in a newly taught math skill by transitioning from massed to distributed practice. When students have just acquired a math skill but are not yet fluent in its use, they need lots of opportunities to try out the skill under teacher supervision—a technique sometimes referred to as 'massed practice'. Once students have developed facility and independence with that new math skill, it is essential that they then be required periodically to use the skill in order to embed and retain it—a strategy also known as 'distributed practice'. Teachers can program distributed practice of a math skill such as reducing fractions to least common

denominators into instruction either by (a) regularly requiring the student to complete short assignments in which they practice that skill in isolation (e.g., completing drill sheets with fractions to be reduced), or (b) teaching a more advanced algorithm or problem-solving approach that incorporates--and therefore requires repeated use of--the previously learned math skill (e.g., requiring students to reduce fractions to least-common denominators as a necessary first step to adding the fractions together and converting the resulting improper fraction to a mixed number).

Math Review: Teach Effective Test-Preparation Strategies *(Hong, Sas, & Sas, 2006)*. A comparison of the methods that high and low-achieving math students typically use to prepare for tests suggests that struggling math students need to be taught (1) specific test-review strategies and (2) time-management and self-advocacy skills. Among review-related strategies, deficient test-takers benefit from explicit instruction in how to take adequate in-class notes; to adopt a systematic method to review material for tests (e.g., looking over their notes each night, rereading relevant portions of the math text, reviewing handouts from the teacher, etc.), and to give themselves additional practice in solving problems (e.g., by attempting all homework items, tackling additional problems from the text book, and solving problems included in teacher handouts). Deficient test-takers also require pointers in how to allocate and manage their study time wisely, to structure their study environment to increase concentration and reduce distractions, as well as to develop 'self-advocacy' skills such as seeking additional help from teachers when needed. Teachers can efficiently teach effective test-preparation methods as a several-session whole-group instructional module.

Math Vocabulary: Preteach, Model, and Use Standard Math Terms *(Chard, D., n.d.)*. Three strategies can help students to learn essential math vocabulary: preteaching key vocabulary items, modeling those vocabulary words, and using only universally accepted math terms in instruction. (1) Preteach key math vocabulary. Math vocabulary provides students with the language tools to grasp abstract mathematical concepts and to explain their own reasoning. Therefore, do not wait to teach that vocabulary only at 'point of use'. Instead, preview relevant math vocabulary as a regular a part of the 'background' information that students receive in preparation to learn new math concepts or operations. (2) Model the relevant vocabulary when new concepts are taught. Strengthen students' grasp of new vocabulary by reviewing a number of math problems with the class, each time consistently and explicitly modeling the use of appropriate vocabulary to describe the concepts being taught. Then have students engage in cooperative learning or individual practice activities in which they too must successfully use the new vocabulary—while the teacher provides targeted support to students as needed. (3) Ensure that students learn standard, widely accepted labels for common math terms and operations and that they use them consistently to describe their math problem-solving efforts.

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Math Computation: Increase Accuracy and Productivity Rates Via Self-Monitoring and Performance Feedback

Students can improve both their accuracy and fluency on math computation worksheets by independently self-monitoring their computation speed, charting their daily progress, and earning rewards for improved performance.

Materials

- Collection of student math computation worksheets & matching answer keys (NOTE: Educators can use a free online application to create math computation worksheets and answer keys at http://www.interventioncentral.org/htmdocs/tools/mathprobe/addsing.php)

- Student self-monitoring chart

Steps to Implementing This Intervention

In preparation for this intervention:

- the teacher selects one or more computation problem types that the student needs to practice. Using that set of problem types as a guide, the teacher creates a number of standardized worksheets with similar items to be used across multiple instructional days. (A Math Worksheet Generator that will create these worksheets automatically can be accessed at http://www.interventioncentral.org).

- the teacher prepares a progress-monitoring chart. The vertical axis of the chart extends from 0 to 100 and is labeled 'Correct Digits' The horizontal axis of the chart is labeled 'Date'.

- the teacher creates a menu of rewards that the student can choose from on a given day if the student was able to exceed his or her previously posted computation fluency score.

At the start of the intervention, the teacher meets with the student. The teacher shows the student a sample math computation worksheet and answer key. The teacher tells the student that the student will have the opportunity to complete similar math worksheets as time drills and chart the results. The student is told that he or she will win a reward on any day when the student's number of correctly computed digits on the worksheet exceeds that of the previous day.

During each day of the intervention:

1. The student is given one of the math computation worksheets previously created by the teacher, along with an answer key. The student first consults his or her progress-monitoring chart and notes the most recent charted computation fluency score previously posted. The student is encouraged to try to exceed that score.

2. When the intervention session starts, the student is given a pre-selected amount of time (e.g., 5 minutes) to complete as many problems on the computation worksheet as possible. The student sets a timer for the allocated time and works on the computation sheet until the timer rings.

3. The student then uses the answer key to check his or her work, giving credit for each correct digit in an answer. (A 'correct digits' is defined as a digit of the correct value that appears in the correct place-value location in an answer. In this scoring method, students can get partial credit even if some of the digits in an answer are correct and some are incorrect.).

4. The student plots his or her computational fluency score on the progress-monitoring chart and writes the current date at the bottom of the chart below the plotted data point. The student is allowed to select a choice from the reward menu if he or she exceeds his or her most recent, previously posted fluency score.

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WRITING

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The act of writing contains its own inner tensions. Writers must abide by a host of rules that govern the mechanics and conventions of writing yet are also expected—within the constraints of those rules-- to formulate original, even creative, thoughts. It is no wonder that many students find writing to be a baffling exercise and have little sense of how to break larger writing assignments into predictable, achievable subtasks. But of course writing can be taught and writing can be mastered. The best writing instruction places the process of written expression on a timeline: Good writers first plan their writing. Then they write. Once a draft has been created, good writers review and revise their work. While the stages of the writing process are generally sequential, good writers also find themselves jumping frequently between these stages (for example, collecting additional notes and writing new sections of a paper as part of the revision process). Depending upon their stage of development as writers, struggling student writers may benefit from the following strategies:

Content: Memorize a Story Grammar Checklist *(Reid & Lienemann, 2006)*. Students write lengthier stories that include greater detail when they use a memorized strategy to judge their writing-in-progress. These young writers are taught a simple mnemonic device with 7 elements: 'WWW, What=2, How = 2'. This mnemonic translates into a story grammar checklist: WHO the main character is; WHERE the story takes place; WHEN the story occurs; WHAT the main character(s) do or plan to do; WHAT happens next; HOW the story concludes; and HOW the character(s) feel about their experiences. Students are taught this strategy through teacher demonstration, discussion, teacher modeling; and student use of the strategy with gradually fading teacher support. When students use the 'WWW, What=2, How = 2' tactic independently, they may still need occasional prompting to use it in their writing. NOTE: Teachers can apply this intervention idea to any genre of writing (e.g., persuasive essay), distilling its essential elements into a similar short, easily memorized checklist to teach to students.

Fluency: Have Students Write Every Day *(Graham, Harris & Larsen, 2001)*. Short daily writing assignments can build student writing fluency and make writing a more motivating activity. For struggling writers, formal writing can feel much like a foreign language, with its own set of obscure grammatical rules and intimidating vocabulary. Just as people learn another language more quickly and gain confidence when they use it frequently, however, poor writers gradually develop into better writers when they are prompted to write daily--and receive rapid feedback and encouragement about that writing. The teacher can encourage daily writing by giving short writing assignments, allowing time for students to journal about their learning activities, requiring that they correspond daily with pen pals via email, or even posting a question on the board as a bell-ringer activity that students can respond to in writing for extra credit. Short daily writing tasks have the potential to lower students' aversion to writing and boost their confidence in using the written word.

Fluency: Self-Monitor and Graph Results to Increase Writing Fluency *(Rathvon, 1999)*. Students gain motivation to write through daily monitoring and charting of their own and classwide rates of writing fluency. At least several times per week, assign your students timed periods of 'freewriting' when they write in their personal journals. Freewriting periods all the same amount of time each day. After each freewriting period, direct each student to count up the number of words he or she has written in the daily journal entry (whether spelled correctly or not). Next, tell students to record their personal writing-fluency score in their journal and also chart the score on their own time-series graph for visual feedback. Then collect the day's writing-fluency scores of all students in the class, sum those scores, and chart the results on a large time-series graph posted at the front of the room. At the start of each week, calculate that week's goal of increasing total class

words written by taking last week's score and increasing by five percent. At the end of each week, review the class score and praise students if they have shown good effort.

Instruction: Essentials of Good Teaching Benefit Struggling Writers *(Gersten, Baker, & Edwards,1999)*. Teachers are most successful in reaching students with writing delays when their instruction emphasizes the full writing process, provides strategy sheets, offers lots of models of good writing, and gives students timely editorial feedback. Good instructors build their written expression lessons around the 3 stages of writing –planning, writing, and revision— and make those stages clear and explicit. Skilled instructors also provide students with 'think sheets' that outline step-by-step strategies for tackle the different phases of a writing assignment (e.g., taking concise notes from research material; building an outline; proofreading a draft). Students become stronger writers when exposed to different kinds of expressive text, such as persuasive, narrative, and expository writing. Teachers can make students more confident and self-sufficient as writers when they give them access to plentiful examples of good prose models that the student can review when completing a writing assignment. Finally, strong writing teachers provide supportive and timely feedback to students about their writing. When teachers or classmates offer writing feedback to the student, they are honest but also maintain an encouraging tone.

Motivation: Stimulate Interest With an Autobiography Assignment *(Bos & Vaughn, 2002)*. Assigning the class to write their own autobiographies can motivate hard-to-reach students who seem uninterested in most writing assignments. Have students read a series of autobiographies of people who interest them. Discuss these biographies with the class. Then assign students to write their own autobiographies. (With the class, create a short questionnaire that students can use to interview their parents and other family members to collect information about their past.) Allow students to read their finished autobiographies for the class.

Organization: Build an Outline by Talking Through the Topic *(The Writing Center, University of North Carolina at Chapel Hill, n.d./ 23 December 2006)*. Students who struggle to organize their notes into a coherent outline can tell others what they know about the topic—and then capture the informal logical structure of that conversation to create a working outline. The student studies notes from the topic and describes what he or she knows about the topic and its significance to a listener. (The student may want to audio-record this conversation for later playback.) After the conversation, the student jots down an outline from memory to capture the structure and main ideas of the discussion. This outline 'kernel' can then be expanded and refined into the framework for a paper.

Organization: 'Reverse Outline' the Draft *(The Writing Center, University of North Carolina at Chapel Hill, n.d./ 23 December 2006)*. Students can improve the internal flow of their compositions through 'reverse outlining'. The student writes a draft of the composition. Next, the student reads through the draft, jotting notes in the margins that signify the main idea of each paragraph or section. Then the student organizes the margin notes into an outline to reveal the organizational structure of the paper. This 'reverse outline' allows the student to note whether sections of the draft are repetitious, are out of order, or do not logically connect with one another.

Planning: Brainstorm to Break the 'Idea' Logjam *(The Writing Center, University of North Carolina at Chapel Hill, n.d./ 28 December 2006)*. Brainstorming is a time-tested method that can help students to generate motivating topics for writing assignments and uncover new ideas to expand and improve their compositions. Here are four brainstorming strategies to teach to students: FREEWRITING: The student sets a time limit (e.g., 15 minutes) or length limit (e.g., one hand-written page) and spontaneously writes until the limit is reached. The writer does not judge the writing but simply writes as rapidly as possible, capturing any thought that comes to mind on the topic. Later, the student reviews the freewriting to pick out any ideas, terms, or phrasing that might be incorporated into the writing assignment. LISTING: The student selects a topic based on an idea or key term related to the writing assignment. The writer then rapidly brainstorms a list of any items that might possibly relate to the topic. Finally, the writer reviews the list to select items that

might be useful in the assigned composition or trigger additional writing ideas. SIMILES: The student selects a series of key terms or concepts linked to the writing assignment. The student brainstorms, using the framework of a simile: " _1_ is like _2_." The student plugs a key term into the first blank and then generates as many similes as possible (e.g., "A SHIP is like a CITY ON THE SEA."). REFERENCES: The student jots down key ideas or terms from the writing assignment. He or she then browses through various reference works (dictionaries, encyclopedias, specialized reference works on specific subjects) looking randomly for entries that trigger useful ideas. (Writers might try a variation of this strategy by typing assignment-related search terms into GOOGLE or another online search engine.)

Proofreading: Teach A Memory Strategy *(Bos & Vaughn, 2002)*. When students regularly use a simple, portable, easily memorized plan for proofreading, the quality of their writing can improve significantly. Create a poster to be put up in the classroom summarizing the SCOPE proofreading elements: (1) SPELLING: Are my words spelled correctly; (2) CAPITALIZATION: Have I capitalized all appropriate words, including first words of sentences, proper nouns, and proper names?; (3) ORDER of words: Is my word order (syntax) correct?; (4) PUNCTUATION: Did I use end punctuation and other punctuation marks appropriately? (5) EXPRESSION of complete thoughts: Do all of my sentences contain a noun and verb to convey a complete thought? Review the SCOPE proofreading steps by copying a first-draft writing sample onto an overhead and evaluating the sample with the class using each item from the SCOPE poster. Then direct students to pair off and together evaluate their own writing samples using SCOPE. When students appear to understand the use of the SCOPE plan, require that they use this strategy to proofread all written assignments before turning them in.

Proofreading: Use Selective Proofreading With Highlighting of Errors *(Frus, n.d./18 November 2006)*. To prevent struggling writers from becoming overwhelmed by teacher proofreading corrections, focus on only 1 or 2 proofreading areas when correcting a writing assignment. Create a student 'writing skills checklist' that inventories key writing competencies (e.g., grammar/syntax, spelling, vocabulary, etc.). For each writing assignment, announce to students that you will grade the assignment for overall content but will make proofreading corrections on only 1-2 areas chosen from the writing skills checklist. (Select different proofreading targets for each assignment matched to common writing weaknesses in your classroom.) Also, to prevent cluttering the student's paper with potentially discouraging teacher comments and editing marks, underline problems in the student' text with a highlighter and number the highlighted errors sequentially at the left margin of the student paper. Then (if necessary) write teacher comments on a separate feedback sheet to explain the writing errors. (Identify each comment with the matching error-number from the left margin of the student's worksheet.) With fewer proofreading comments, the student can better attend to the teacher feedback. Also, even a heavily edited student assignment looks neat and tidy when teachers use the highlighting/numbering technique—preventing students from becoming disheartened at the site of an assignment scribbled over with corrective comments.

Spelling: Leverage the Power of Memory Through Cover-Copy-Compare *(Murphy, Hern, Williams, & McLaughlin, 1990)*. Students increase their spelling knowledge by copying a spelling word from a correct model and then recopying the same word from memory. Give students a list of 10-20 spelling words, an index card, and a blank sheet of paper. For each word on the spelling list, the student (1) copies the spelling list item onto a sheet of paper, (2) covers the newly copied word with the index card, (3) writes the spelling word again on the sheet (spelling it from memory), and (4) uncovers the copied word and checks to ensure that the word copied from memory is spelled correctly. If that word is spelled incorrectly, the student repeats the sequence above until the word copied from memory is spelled correctly--then moves to the next word on the spelling list.

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'Defensive Behavior Management': Advance Planning, Connecting With the Student, and Defusing Crisis Situations

Description: 'Defensive behavior management' (Fields, 2004) is a teacher-friendly six-step approach to avert student-teacher power struggles that emphasizes providing proactive instructional support to the student, elimination of behavioral triggers in the classroom setting, relationship-building, strategic application of defusing techniques when needed, and use of a 'reconnection' conference after behavioral incidents to promote student reflection and positive behavior change.

Purpose: When students show non-compliant, defiant, and disruptive behaviors in the classroom, the situation can quickly spin out of control. In attempting to maintain authority, the teacher may instead fall into a power struggle with the student, often culminating in the student being removed from the classroom. The numerous negative consequences of chronic student misbehavior include classwide lost instructional time, the acting-out student's frequent exclusion from instruction, and significant teacher stress (Fields, 2004). Defensive management can prevent these negative outcomes.

Materials: No specialized materials are needed.

Preparation: Preparation steps are included in the intervention itself (see below).

Intervention Steps: Defensive behavior management is implemented through these steps:

1. Understanding the Problem and Using Proactive Strategies to Prevent It. The teacher collects information--through direct observation and perhaps other means--about specific instances of student problem behavior and the instructional components and other factors surrounding them. The teacher analyzes this information to discover specific 'trigger' events that seem to set off the problem behavior(s). Examples of potential triggers include lack of skills; failure to understand directions; fatigue because of work volume; reluctance to demonstrate limited academic skills in the presence of peers or adults; etc.).

   As the teacher identifies elements in the classroom environment that appear to trigger student non-compliance or defiance, the instructor adjusts instruction to provide appropriate student support to prevent behavioral episodes (e.g., providing the student with additional instruction in a skill; repeating directions and writing them on the board; 'chunking' larger work assignments into smaller segments; restructuring academic tasks to reduce the likelihood of student embarrassment in front of peers).

2. Promoting Positive Teacher-Student Interactions. Early in each class session, the teacher makes a point to engage in at least one positive verbal interaction with the student. Throughout the class period, the teacher continues to interact in positive ways with the student (e.g., brief conversation, smile, thumbs up, praise comment after a student remark in large-group discussion, etc.). In each interaction, the teacher adopts a genuinely accepting, polite, respectful tone.

3. Scanning for Warning Indicators. During the class session, the teacher monitors the target student's behavior for any behavioral indicators suggesting that the student is becoming frustrated or angry. Examples of behaviors that precede non-compliance or open defiance may include stopping work; muttering or complaining; becoming

argumentative; interrupting others; leaving his or her seat; throwing objects, etc.).

4. Exercising Emotional Restraint. Whenever the student begins to display problematic behaviors, the teacher makes an active effort to remain calm. To actively monitor his or her emotional state, the teacher tracks physiological cues such as increased muscle tension and heart rate, as well as fear, annoyance, anger, or other negative emotions. The teacher also adopts calming or relaxation strategies that work for him or her in the face of provocative student behavior--such as taking a deep breath or counting to 10 before responding.

5. Using Defusing Tactics. If the student begins to escalate to non-compliant, defiant, or confrontational behavior (e.g., arguing, threatening, other intentional verbal interruptions), the teacher draws from a range of possible deescalating strategies to defuse the situation. Such strategies can include private conversation with the student while maintaining a calm voice, open-ended questions, paraphrasing the student's concerns, acknowledging the student's emotions, etc.

6. Reconnecting with the Student. Soon after any in-class incident of student non-compliance, defiance, or confrontation, the teacher makes a point to meet with the student individually to discuss the behavioral incident, identify the triggers in the classroom environment that may have led to the problem, and brainstorm with the student to create a written plan to prevent the reoccurrence of such an incident. Throughout this conference, the teacher maintains a supportive, positive, polite, and respectful tone.

Adjusting/Troubleshooting: Here are recommendations for using defensive management as an intervention strategy and addressing issues that might arise:

Consider adopting defensive behavior management across classrooms. Particularly in middle and high schools, students who are chronically non-compliant or defiant often display those maladaptive behaviors across instructional settings. If all teachers who work with a challenging student use the defensive management approach, there is a greater likelihood that the student will find classrooms more predictable and supportive—and that teachers will experience greater success with that student.

Do not use defensive management to respond to physically aggressive behaviors or other serious safety concerns. While the defensive-management process can work quite effectively to prevent or minimize verbal outbursts and non-compliance, the teacher should not attempt on his or her own to manage serious physical aggression using this classroom-based approach. Instead, teachers should respond to any episodes of student physical aggression by immediately notifying building administration.

Reference

Fields, B. (2004). Breaking the cycle of office referrals and suspensions: Defensive management. *Educational Psychology in Practice, 20*, 103-115.