

Marshall Memo 376

A Weekly Round-up of Important Ideas and Research in K-12 Education

March 7, 2011

In This Issue:

1. [Richard Allington on eliminating early reading failure](#)
2. [Assigning homework that gets done](#)
3. [Teaching ethical decision-making](#)
4. [A strategy for solving math problems](#)
5. [Ten ways to use online resources to build vocabulary](#)
6. [How to keep students from choking under exam pressure](#)
7. Websites: (a) [Insights on third-world countries](#); (b) [Harvard course on justice](#)

Quotes of the Week

“[S]tudies have shown that virtually every student could be reading on grade level by the end of 1st grade... and that the cost of achieving this goal is substantially less than the current system of remediation, special education, and grade retention.”

Richard Allington (see item #1)

“Error followed by correction and instruction is the fundamental process of schooling. You get it wrong, and then you get it right. If getting it wrong and then getting it right is normal, teachers should *normalize error* and respond to both parts of this sequence as if they were completely normal. After all, they are.”

Doug Lemov in *Teach Like a Champion* (Jossey-Bass, 2010)

“The brain ruthlessly determines what is worth holding onto and what is not, and it discards that which it deems not worth keeping.”

David Conley in “Building on the Common Core” in *Educational Leadership*, March 2011 (Vol. 68, #6, p. 16-20)

<http://www.ascd.org/publications/educational-leadership.aspx>

“Think about it: We are on the verge of requiring every student in the United States to learn two years of algebra that they will likely never use, but no one is required to learn wellness or parenting.”

Grant Wiggins in “A Diploma Worth Having” in *Educational Leadership*, March 2011 (Vol. 68, #6, p. 28-33)

<http://www.ascd.org/publications/educational-leadership.aspx>

1. Richard Allington on Eliminating Early Reading Failure

(Originally titled “What At-Risk Readers Need”)

Two-thirds of U.S. students read below the level they need to do grade-level work, says University of Tennessee professor Richard Allington in this powerful *Educational Leadership* article. “At the same time,” he continues, “studies have shown that virtually every student could be reading on grade level by the end of 1st grade... and that the cost of achieving this goal is substantially less than the current system of remediation, special education, and grade retention.”

So how can we bridge the knowing-doing gap? Allington believes the Response to Intervention (RTI) initiative has great potential. In schools where all kindergarten and first grade students get high-quality, whole-class Tier 1 reading instruction, and where those who aren’t successful get expert, small-group Tier 2 instruction every day, and where those still having difficulty get expert, one-on-one Tier 3 instruction, 98 percent of first graders read on grade level – and maintain proficiency through third grade with no additional support.

The key to RTI is assessment and follow-up, says Allington – yet virtually no schools screen entering kindergarten students for letter recognition and intervene with the roughly one-third of kids who don’t know their letters. Many kindergarten teachers aren’t trained in assessment and early intervention, some don’t feel it’s their responsibility to teach at-risk students, some believe early reading instruction is developmentally inappropriate, and schools don’t mobilize tutorial help for struggling primary-grade students. “This means that most schools deliberately create a pool of students who will become struggling readers,” says Allington. “I say *deliberately* because, unfortunately, that’s just what it is – deliberate ignorance of what we should do to address the problems of at-risk kindergartners.”

Allington says the research is clear that several commonly used interventions are ineffective:

- *Paraprofessionals* – “Working with a paraprofessional may add two months of growth in reading for a struggling reader,” says Allington, “but that reader needs 10-15 months additional growth to be reading on level with his or her peers.”

- *Computer-based programs* – A major 2007 federal study showed that none of these programs works as well as a teacher in fostering reading development, says Allington. And the What Works Clearinghouse found that only one of the 150-plus commercial reading programs had “strong evidence” of effectiveness.

- *Textbooks* – The What Works Clearinghouse also found no evidence that core reading programs work. And although textbooks teach some needed skills, implementation is rarely in

line with research-based methodology. For example, textbooks try to teach comprehension skills like main idea in a single week rather than recursively over time. Allington believes reading textbooks fail for three reasons: (a) They require little actual reading – only 15 minutes a day, according to one study, with the rest of the time spent on skills lessons and worksheets; (b) They don't promote high-success reading – independent reading with 98 percent accuracy and 90 percent comprehension; and (c) They don't let students choose what to read. "Self-selected reading activity seems to be about twice as powerful as teacher-selected reading," says Allington.

He closes with this call to arms: Stop using ineffective interventions like paraprofessionals, computer-based programs, and textbooks, and pour those resources into:

- *Starting kindergarten on Day One* – Screen incoming students and deliver additional high-quality instruction, inside or outside the regular classroom, to students who start off behind.
- *Continuing supports in first grade* – For students who are still at risk after kindergarten, intensive tutorial or very small-group instruction is essential.
- *Maximizing high-success reading* – Struggling readers need exactly the same reading experiences as their more successful peers – lots of fluent, high-comprehension reading that develops phonemic segmentation and decoding and builds vocabulary.

"What At-Risk Readers Need" by Richard Allington in *Educational Leadership*, March 2011 (Vol. 68, #6, p. 40-45), <http://www.ascd.org/publications/educational-leadership.aspx>; Allington can be reached at rallingt@utk.edu.

[*Back to page one*](#)

2. Assigning Homework That Gets Done

"For decades teachers have been baffled by those students who consistently come to class without completed homework assignments," says Dowling College (NY) teacher Susan Voorhees in this article in *The Reading Teacher*. "In frustration, teachers sometimes label students 'irresponsible,' 'unmotivated,' and 'uncaring.'" But Voorhees believes the problem is the homework assignments that teachers are sending home, which often contain reading and conceptual material way above students' heads, producing frustration, tears, and avoidance.

The solution, she believes, is for teachers to know their students' reading proficiency and assign homework – or ways of getting homework done – that take these into account. Here is her checklist for teachers:

- Can all students decode the homework material and read it fluently and accurately without assistance? If not:
 - Provide easier text.
 - Arrange for a parent, older sibling, or homework buddy to help.
 - Provide books on tape.
 - Read the text first in class.
- Do all students have the prior knowledge, schema, and vocabulary needed to understand the assigned material? If not:

- Develop students' background knowledge through videos, demonstrations, picture books, picture walks, previewing text, read-alouds, class brainstorming and discussion, semantic organizers, concept maps, and anticipation guides.
- Do all students know how to use text structure – Narrative (story structure) and expository (main idea and details)? If not:
 - Develop students' understanding of narrative text by reviewing story elements (characters, setting, events, climax, conflict, resolution, author's theme), using story maps, and asking who, what, when, why, and how questions.
 - Develop students' understanding of expository text (descriptive, sequential, comparison, cause/effect, problem/solution), use semantic organizers, ask who, what, where, why, and how questions.
- Do all students understand the purpose of the homework assignment? If not:
 - Generate in-class goal statements on the assignment.
 - Generate in-class purpose questions on the assignment.
 - Engage students in a K-W-L or anticipation guide.
- Do all students know how to activate prior knowledge prior to reading? If not:
 - Model and practice relating to new or known information prior to homework – text-to-self, text-to-text, text-to-world connections.
- Do all students have sufficient attention and ability to concentrate? If not:
 - Break up the assignment into doable pieces.
 - Give shorter reading assignments.
 - Teach comprehension strategies like K-W-L, setting a purpose, relating new to unknown.
- Do all students have high self-efficacy toward homework and literacy? If not:
 - Emphasize why students will be successful completing the assignment.
 - Assure students that attempts will be praised and homework is not graded.
- Do all students get parental help with homework? If not:
 - Develop a homework club after school.
 - Assign homework that can be completed solo.
 - Save projects (e.g., science experiments) for in class.
 - Investigate the reasons for incomplete work; be understanding.

“Why the Dog Eats Nikki’s Homework: Making Informed Assignment Decisions” by Susan Voorhees in *The Reading Teacher*, February 2011 (Vol. 64, #5, p. 363-367), no e-link available; Voorhees can be reached at voorhees@dowling.edu.

[Back to page one](#)

3. Teaching Ethical Decision-Making

(Originally titled “Ethics: From Thought to Action”)

In this thoughtful *Educational Leadership* article, Oklahoma State University administrator and psychology professor Robert Sternberg describes the disappointing response of his college students when he presented them with some clearly unethical behavior and asked what should be done. It’s not lack of intelligence and knowledge that causes many of our problems, he says, but the fact that many people don’t recognize and step up to the plate when basic values are at stake.

Sternberg says there are eight stages for dealing with an ethical situation [for details, see his 2009 article summarized in Marshall Memo 283]:

- Recognize that an event might require action.
- Perceive an ethical dimension in the event.
- Decide that the ethical dimension is significant.
- Take personal responsibility for generating an ethical solution.
- Figure out what abstract ethical rule(s) might apply to the problem.
- Decide how these rules apply to the problem and suggest a concrete solution.
- Prepare for possible repercussions from acting in an ethical manner.
- Enact the ethical solution.

Sternberg then suggests several ways that ethical decision-making should be taught in K-12 schools:

- Infused – He doesn’t support teaching ethics in a separate course, but rather embedded in content areas – social studies, English, science, math, and others.
- Active – “Students learn more from being actively involved in ethical decision making than from reading about others making ethical decisions,” says Sternberg.
- Case studies – Real-life stories are most powerful for teaching about ethics, he says.
- Personal relevance – Students need to see how ethical principles apply to their own lives.
- Critical conversations – Students need to talk and argue about ethical dilemmas, then write about them.

In a sidebar, Sternberg suggests questions that might be helpful in sparking discussions in different subject areas:

- Is it unethical for governments to execute people?
- Is it unethical for physicists to develop weapons of mass destruction?
- Was Tom Sawyer unethical to persuade his friends to whitewash his fence?
- When is cheating by another student serious enough to report?
- How catastrophic do events in another country have to be before outside intervention is warranted?
- If a child is treated the way Huckleberry Finn was treated by his father, should the town or state authorities take the child away from the parents?
- Under what circumstances should a soldier refuse to obey an order?
- Should a child ever disobey a parent?

- If a student knows that another student takes illegal drugs, does he or she have a personal responsibility to do something about it?

“Ethics: From Thought to Action” by Robert Sternberg in *Educational Leadership*, March 2011 (Vol. 68, #6, p. 34-39), <http://www.ascd.org/publications/educational-leadership.aspx>; Sternberg can be reached at Robert.sternberg@okstate.edu.

[Back to page one](#)

4. A Strategy for Solving Math Problems

In this article in *Theory Into Practice*, University of Minnesota professor Asha Jitendra and Harvard professor Jon Star note that 6-7 percent of U.S. students have poor achievement in mathematics – a proportion that hasn’t changed despite recent improvements in math curriculum materials and teaching methods.

A significant number of these low-achieving students have learning disabilities; they have difficulty with basic mathematical concepts and skills and struggle when confronted with novel problems. The underlying cause is deficits in attention, memory, background knowledge, vocabulary, language processes, strategy knowledge and use, visual-spatial processing, and self-regulation.

One reason these students have such difficulty with mathematics, say Jitendra and Star, is that many math textbooks do a poor job with problem solving. Specifically:

- They often present a page of problems requiring the same procedure (e.g., multiplication), which doesn’t help students distinguish among problems that need different solution strategies.
- They teach students to look for certain key words to decide which procedure to use (*in all* indicates addition, *left* indicates subtraction, *share* indicates division), which can sometimes be misleading. “The keyword method does not emphasize the meaning and structure of the problem and thus may not help students to reason and make sense of problem situations, which is crucial in solving novel problems,” say Jitendra and Star.
- The problem-solving heuristic used in most textbooks – understand the problem, devise a plan, carry out the plan, look back and reflect –doesn’t provide enough guidance and structure to struggling students.

Jitendra and Star say that to bring low-achieving students up to speed in mathematics, the following practices are essential:

- Systematic, explicit instruction;
- Student think-alouds;
- Visual representations;
- Peer-assisted learning opportunities in which students focus on problem details and observe or are guided by models of proficient students’ problem solving;
- Formative assessments that provide feedback to teachers and students.

Schema-based instruction (SBI), which Jitendra and Star developed working with middle-school students, incorporates these elements and is a promising way to improve the

achievement of students with learning difficulties. Their problem-solving sequence is FOPS:

- Find the problem type or schema.
- Organize the information using a diagram.
- Plan to solve the problem.
- Solve the problem.

The first step is teaching students to differentiate among the following math problem schema:

- Change (addition or subtraction) – For example, *A squirrel made a pile of nuts. It carried away 15 nuts up to its nest. Now there are 38 nuts in the pile. How many nuts were in the pile at the beginning?* In this kind of problem, there is a permanent change over time in the value of one variable.

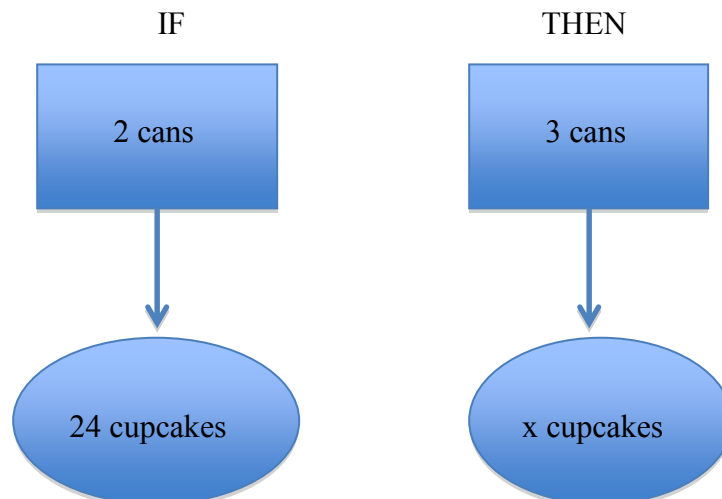
- Group (addition or subtraction) – For example, *A new baseball bat costs \$50. A new baseball cap costs \$10. How much would it cost to buy the baseball bat and cap?* This kind of problem involves a number of smaller groups combining to form a new larger group, with an emphasis on the part-part-whole relationship.

- Compare (addition or subtraction) – For example, *At the park, there were 8 children on the slide and some children on the swings. There were 5 more children on the slide than on the swings. How many children were on the swings?* This kind of problem compares two distinct sets and the relationship between the two is the key to solving it.

- Restate (multiplicative compare, ratio) – For example, *Orange juice concentrate is mixed with water in the ratio of 1:3. How many cans of orange juice need to be mixed with 6 cans of water?* This problem type involves a known relationship between two things and an unknown quantity.

- Vary (equal groups, proportion) – For example, *Yuri can eat 3 hot dogs in 2 minutes. At this rate, how many hot dogs can he eat in 6 minutes?* In this type of problem, one variable increases in the same proportion as the other.

The second step, since struggling students have deficits in working memory, is teaching them to represent problems in schematic diagrams. For example, with this problem – *Toshi used exactly 2 cans of icing to cover 24 cupcakes. How many cupcakes can she ice with 3 cans of icing?* – students would learn how to create a diagram like this:



The third step is to think aloud and figure out how to solve the problem. The teacher would guide students to translate this diagram into a mathematical problem to be solved for x .

The fourth step is to solve the problem and check to see if the answer makes sense.

“Meeting the Needs of Students with Learning Disabilities in Inclusive Mathematics Classrooms: The Role of Schema-Based Instruction on Mathematical Problem-Solving” by Asha Jitendra and Jon Star in *Theory Into Practice*, Winter 2011 (Vol. 50, #1, p. 12-19), no e-link available; Jitendra can be reached at jiten001@umn.edu

[Back to page one](#)

5. Ten Ways to Use Online Resources to Build Vocabulary

In this article in *The Reading Teacher*, Vanderbilt University teacher Bridget Dalton and National University/La Jolla teacher Dana Grisham note the high correlation between vocabulary knowledge and reading comprehension (0.6 to 0.8) and recommend ten technology-based strategies for improving students’ vocabulary:

- *Strategy 1: Using visual displays of words* – Wordle is a free Web application that creates a word cloud of the words in an inputted text, with the size of words proportional to their frequency in the text: <http://www.wordle.net>.

- *Strategy 2: A digital vocabulary field trip* – TrackStar is a Web tool that allows teachers to collect a series of websites and annotate them so students follow the online journey exploring a vocabulary theme: <http://trackstar.4teachers.org>. For example, a class studying weather might go to websites featuring an Alaska dog race and the aurora borealis to gather words dealing with extremes of weather.

- *Strategy 3: Online vocabulary games* – Dalton and Grisham recommend these two sites: <http://vocabulary.co.il> and <http://www.vocabulary.com>.

- *Strategy 4: PowerPoint presentations* – These can be effective vocabulary builders if they are enhanced by audio, photos, and hyperlinks to effective websites and work by other students.

- *Strategy 5: Online reference tools* – The Visual Thesaurus website has free information in addition to its fee-based content, including Behind the Dictionary, Teachers at Work, and teacher-created themes word lists: <http://www.visualthesaurus.com>.

- *Strategy 6: Just-in-time vocabulary reference support* – Dalton and Grisham recommend that students bookmark online dictionaries so they have fingertip access when they don’t know a word: <http://dictionary.reference.com> and <http://www.merriam-webster.com>. These two sites have channels for visual representations of words: <http://visual.merriam-webster.com/index.php> and <http://www.enchantedlearning.com>. NASA has a space picture dictionary at <http://www.nasa.gov/audience/forstudents/k-4/dictionary>.

- *Strategy 7: Language translators* – For English language learners, it’s great to have ready access to sites like Babelfish – <http://babelfish.yahoo.com>; Google Translator – <http://translate.google.com>; and Bing Translator – <http://www.microsofttranslator.com>. In addition, this website will translate any website: http://translate.google.com/translate_buttons.

- *Strategy 8: Digital texts* – Teachers can dramatically increase the texts available to students by using: Time for Kids – <http://www.timeforkids.com/TFK/kids/news>; Weekly Reader - <http://weeklyreader.com/featurezone>; National Geographic Kids - <http://kids.nationalgeographic.com/kids>; National Geographic Kids’ blogs – <http://kidsblogs.nationalgeographic.com/kidsnews>; and Science News for Kids – <http://www.sciencenewsforkids.org>.

- *Strategy 9: Listening to digital text* – Text-to-speech tools are especially helpful for students having difficulty reading on-grade-level text: Click, Speak for Firefox – <http://clickspeak.clcworld.net>; Natural Reader – <http://www.naturalreaders.com>; and Balabolka – <http://www.cross-plus-a.com/balabolka.htm>. Students who have a documented print disability can get core curriculum texts from organizations like Bookshare – <http://bookshare.org> and Recording for the Blind and Dyslexic – <http://www.rfbd.org>.

- *Strategy 10: Combining vocabulary learning and social service* – Free Rice is an online vocabulary game; for each correct answer, the United World Food Programme donates 10 grains of rice to countries in need: <http://www.freerice.com>.

“eVoc Strategies: 10 Ways to Use Technology to Build Vocabulary” by Bridget Dalton and Dana Grisham in *The Reading Teacher*, February 2011 (Vol. 64, #5, p. 306-317), no e-link available; the authors can be reached at bridget.dalton@vanderbilt.edu and dana.grisham@gmail.com.

[*Back to page one*](#)

6. How to Keep Students from Choking Under Exam Pressure

In this intriguing article in *Science*, University of Chicago professors Gerardo Ramirez and Sian Beilock report on two randomized field experiments demonstrating that ninth graders who were asked to write about their anxieties for ten minutes just before their first final exam of their high-school career – a high-pressure situation – did significantly better than a control group of students who sat quietly or wrote about an unrelated topic for ten minutes before taking the test. Students who were habitually anxious about taking tests benefited most from the pre-exam expressive writing.

Why would this be true? Ramirez and Beilock believe it’s because anxiety impairs working memory and writing about worries brings them to the surface and makes them less disruptive to performance.

“Writing About Testing Worries Boosts Exam Performance in the Classroom” by Gerardo Ramirez and Sian Beilock in *Science*, Jan. 14, 2011 (Vol. 331, #221, online) <http://www.sciencemag.org/content/331/6014/211.short>; Beilock can be reached at Beilock@uchicago.edu.

[*Back to page one*](#)

7. Websites:

a. *Insights on third-world countries* – At this website sponsored by the Peace Corps – <http://www.peacecorps.gov/www/educators/lessonplans/section.cfm?sid=9> – educators can access more than 50 interactive lessons.

“An Eye on the World” in *Educational Leadership*, March 2011 (Vol. 68, #6, p. 9)
[Back to page one](#)

b. *Harvard course on justice* – Professor Michael Sandel’s hugely popular course, “What is the Right Thing to Do?” is now available online at <http://www.justiceharvard.org/>.

Spotted in “The Humanities: Why Such a Hard Sell?” by David Ferrero in *Educational Leadership*, March 2011 (Vol. 68, #6, p. 22-26)
<http://www.ascd.org/publications/educational-leadership.aspx>
[Back to page one](#)

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Do you have feedback? Is anything missing?

If you have comments or suggestions, if you saw an article or web item in the last week that you think should have been summarized, or if you would like to suggest additional publications that should be covered by the Marshall Memo, please e-mail: kim.marshall8@verizon.net

About the Marshall Memo

Mission and focus:

This weekly memo is designed to keep principals, teachers, superintendents, and others very well-informed on current research and effective practices in K-12 education. Kim Marshall, drawing on 41 years' experience as a teacher, principal, central office administrator, and writer, lightens the load of busy educators by serving as their "designated reader."

To produce the Marshall Memo, Kim subscribes to 44 carefully-chosen publications (see list to the right), sifts through more than a hundred articles each week, and selects 5-10 that have the greatest potential to improve teaching, leadership, and learning. He then writes a brief summary of each article, pulls out several striking quotes, provides e-links to full articles when available, and e-mails the Memo to subscribers every Monday evening (with occasional breaks; there are about 50 issues a year).

Subscriptions:

Individual subscriptions are \$50 for the school year. Rates decline steeply for multiple readers within the same organization. See the website for these rates and information on paying by check or credit card.

Website:

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- Headlines for all issues
- What readers say
- About Kim Marshall (including links to articles)
- A free sample issue

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- The current issue (in PDF or Word format)
- All back issues (also in PDF or Word)
- A database of all articles to date, searchable by topic, title, author, source, level, etc.
- How to change access e-mail or log-in

Publications covered

Those read this week are underlined.

American Educator
American Journal of Education
American School Board Journal
ASCD, CEC SmartBriefs, Daily EdNews
Ed. Magazine
EDge
Education Digest
Education Gadfly
Education Next
Education Week
Educational Leadership
Educational Researcher
Edutopia
Elementary School Journal
Essential Teacher (TESOL)
Harvard Business Review
Harvard Education Letter
Harvard Educational Review
JESPAR
Journal of Staff Development
Language Learner (NABE)
Middle Ground
Middle School Journal
New York Times
Newsweek
PEN Weekly NewsBlast
Phi Delta Kappan
Principal
Principal Leadership
Principal's Research Review
Reading Research Quarterly
Reading Today
Rethinking Schools
Review of Educational Research
Teachers College Record
The Atlantic Monthly
The Chronicle of Higher Education
The Language Educator
The Learning Principal
The New Yorker
The Reading Teacher
The School Administrator
Theory Into Practice
Tools for Schools