# Marshall Memo 167

A Weekly Round-up of Important Ideas and Research in K-12 Education
January 8, 2007

## In This Issue:



## Quotes of the Week

"I couldn't care less whether my neighbors and co-workers are authentically sexist, racist or ageist. What matters is that they behave with civility and tolerance, obey the rules of social interaction and are sincere about it."

Harvard sociology professor Orlando Patterson (see item #1)

"The fact is, having fifteen priorities is the same as having none at all."

Robert Kaplan (see item #2)

"As a leader, you're watched closely. During a crisis, your people watch you with a microscope, noting every move you make. In such times, your subordinates learn a great deal about you and what you really believe, as opposed to what you say."

Robert Kaplan (*ibid.*)

"I will bend over backwards to build good relations with those who do not agree with me."

Anglican bishop Katharine Jefferts Schori (*Newsweek*, Dec. 25, 2006/Jan. 1, 2007)

"Kids love words."

A primary-grade teacher during a vocabulary-building project (see item #3)

"Textbooks would make my job so much easier."

Miriam Coulibaly, a teacher in Mali, whose class has 195 students
*New York Times*, December 30, 2006, p. A6

## 1. Are We All Bigots? And Does It Matter If We Just *Behave*?

In this thought-provoking Op Ed column in the *New York Times*, Harvard sociology professor Orlando Patterson addresses a tricky question: Do we need to know people's true inner beliefs about race, gender, age, sexual orientation, and appearance – or is civil behavior what counts?

"Authenticity now dominates our way of viewing ourselves and our relationships," says Patterson, "with baleful consequences. Within sensitive individuals it breeds doubt; between people it promotes distrust; within groups it enhances group-think in the endless quest to be one with the group's true soul; and between groups it is the inner source of identity politics."

A focus on people's authentic beliefs has also led social scientists to cast doubt on polls showing that Americans are becoming increasingly tolerant. People have just learned to hide their deeply-ingrained prejudices, the argument goes, to appear politically correct. Harvard psychologist Mahzarin Banaji and her colleagues have conducted more than three million Web-based tests that prove, she claims, that almost all of us, deep down inside, are bigots.

*So what*, says Patterson. "I couldn't care less whether my neighbors and co-workers are authentically sexist, racist or ageist. What matters is that they behave with civility and tolerance, obey the rules of social interaction and are sincere about it. The criteria of sincerity are unambiguous: Will they keep their promises? Will they honor the meanings and understandings we tacitly negotiate? Are their gestures of cordiality offered in conscious good faith?"

"Sincerity rests in reconciling our performance of tolerance with the people we become," concludes Patterson. "And what that means for us today is that the best way of living in our diverse and contentiously free society is neither to obsess about the hidden depths of our prejudices nor to deny them, but to behave as if we had none."

"Our Overrated Inner Self" by Orlando Patterson in the *New York Times*, December 26, 2006, p. A27, no free e-link available

## 2. Questions Leaders Might Ask Themselves

In this *Harvard Business Review* article with crossover appeal for school leaders, Harvard Business School lecturer (and former Goldman Sachs vice-chairman) Robert Kaplan suggests that managers should periodically step back (especially when things aren't going well) and ask themselves the following questions. "Having all the answers," he says, "is less important than knowing what to ask."

• *Is my organization's theory of action aligned with research-based success factors?* If I had to design my organization with a blank sheet of paper, would it be different from the

current design? Maybe it's time to create a task force to answer these questions and make recommendations to me.

• *How often do I communicate a vision for my organization?* If asked, would my employees be able to articulate the vision and priorities? Many leaders, in the welter of day-to-day activities, don't convey their vision and goals to the people who matter the most.

• *Have I identified and communicated three to five key priorities to achieve that vision?* "The fact is," says Kaplan, "having fifteen priorities is the same as having none at all."

• *How am I spending my time?* How are my subordinates spending theirs? Does how we spend our time match our key priorities? Kaplan often has managers chart their activities for a week and then look at the data. Most are horrified at the disconnect between their priorities and their crisis-driven days.

• *Am I delegating sufficiently?* Or have I become a decision-making bottleneck?

• *Do I give people timely, direct, and constructive feedback?* Leaders often fail to coach employees in a timely manner, says Kaplan, instead giving unpleasant surprises in end-of-year evaluations. This misses opportunities for professional development and undermines morale.

• *What types of events create pressure for me – and what behaviors do my subordinates see when I am under pressure?* "As a leader," says Kaplan, "you're watched closely. During a crisis, your people watch you with a microscope, noting every move you make. In such times, your subordinates learn a great deal about you and what you really believe, as opposed to what you say… Successful leaders need to be aware of their own stress triggers and consciously modulate their behavior during these periods to make sure they are acting in ways that are consistent with their beliefs and core values."

• *Is my leadership style comfortable? Does it reflect who I truly am?* A career is a marathon, says Kaplan, and if we aren't true to ourselves, we will eventually get worn down.

• *Do I assert myself sufficiently, or have I become tentative?* Does worry about being politically correct – or my future career – cause me to pull punches or hesitate to express my views?

• *Do I have five or six subordinates who will tell me things I may not want to hear but need to hear?* Honest information and feedback fuel improvement. "The problem," says Kaplan, "is that confrontation and disagreement are crucial to effective decision making… As a leader, therefore, you must ask yourself whether you are expressing your views or holding back or being too politic. At the same time, leaders must encourage their own subordinates to express their unvarnished opinions, make waves as appropriate, and stop tiptoeing around significant issues."

• *Have I, at least in my own mind, picked one or more potential successors* – and am I coaching them and giving them challenging assignments?

"What To Ask the Person in the Mirror" by Robert Kaplan in *Harvard Business Review*, January 2007 (Vol. 85, #1, p. 86-95), no e-link available

## 3. Early, Systematic Teaching of Sophisticated Vocabulary

In this exceptionally helpful article in *Elementary School Journal*, University of Pittsburgh professors Isabel Beck and Margaret McKeown report on two studies in which kindergarten and first-grade teachers taught sophisticated vocabulary to their inner-city students. The results were very positive, and Beck and McKeown argue that systematically and skillfully expanding vocabulary is key to improving reading achievement in high-poverty schools. By learning around 400 words a year, they say, disadvantaged students could add thousands of words to their vocabularies throughout their school years and become much stronger readers.

The authors begin with the brutal facts about the widening vocabulary achievement gap: in first grade, economically advantaged students know twice as many words as their less-advantaged peers. By twelfth grade, high-performing students know *four* times as many words as their low-performing peers. A student who enters school with a small vocabulary finds it difficult to understand many reading materials and falls further and further behind. Curiously, elementary schools don't emphasize the teaching new words, say the authors. Teachers "do much mentioning and assigning and little actual teaching of new vocabulary," they write. For students who enter school knowing a lot of words, this teaching approach works just fine; for those who don't, it's a significant reason that the achievement gap widens every year.

So how are vocabulary-poor students going to learn the sophisticated words that they need to become mature, literate language users? Four approaches that work for vocabulary-rich students don't work for students who enter school with deficits: (a) Everyday conversations are not very helpful, because this kind of discourse uses everyday words and not the rich vocabulary these children need to acquire; (b) Reading primary-grade storybooks also isn't much help because these books contain grade-level vocabulary and not high-value words; (c) Independent reading is a good way for students to learn new words, but students who know fewer words do much less reading on their own, and when they do read, they are less able to infer the meaning of unfamiliar words from context clues because they know fewer of the surrounding words in the text; and finally, (d) Teacher readalouds from more sophisticated trade books have little impact because students hear the more advanced words but there isn't enough context and repetition for them to sink in.

Beck and McKeown suspected that there was teaching potential in the rich vocabulary in some readaloud books, and designed two experiments to test their hypothesis – that *systematic* teaching of these words in the context of engaging readalouds would expand students' vocabularies. They chose children's books that were conceptually challenging, contained complex events and subtle expression of ideas, presented unfamiliar ideas and topics, had a flow of events (rather than a series of situations), contained rich vocabulary, and didn't have too many pictures. From each book, the researchers selected a few sophisticated, "second-tier" words that students wouldn't encounter in their everyday conversations and reading and would have high utility for them down the road (see the lists below).

The researchers then set up control groups in each school (classes that proceeded with the regular literacy curriculum) and trained the experimental-class kindergarten and first-grade

teachers to go through specific steps with the second-tier words. Here's an example, using *The Bremen Town Musicians*, whose second-tier words were *feast*, *exhausted*, and *cautiously*:

- The teacher reads the book aloud, briefly explaining any words that might prevent students from understanding the meaning but not interrupting the flow.
- After completing the story and discussing it with the class, the teacher takes the first target word, *feast*, and reminds students of its context within the book: "In the story, it said that the animals found the robbers' table full of good things to eat, and so they had a *feast*."
- The teacher defines the word: "A *feast* is a big special meal with lots of delicious food."
- Students are asked to say the word: "Say the word with me: *feast*."
- The teacher gives examples in contexts different from that of the story: "People usually have a *feast* on a holiday or to celebrate something special. We all have a *feast* on Thanksgiving Day."
- Students are asked to judge examples and non-examples: "Which would be a *feast*: eating an ice-cream cone or eating at a big table full of all kinds of food? Why?"
- Students are asked to come up with their own examples: "If you wanted to eat a feast, what kinds of food would you want?"
- The teacher reinforces the word's sound and meaning: "What's a word that means a big special meal?"
- The teacher repeats these steps with the other second-tier words in the story.
- The teacher reinforces the words over the next few days, keeping second-tier words on a chart, putting a tally mark by each when it is used in class, and using the words whenever possible in class – for example, in a morning message, writing "Today is Monday. Jamal wants a *feast* for his birthday."

Teachers were surprised by how receptive their students were to this rather laborious process, and they were very positive about the experiment. "Kids love words," said one teacher who had been a skeptic. Rigorous follow-up testing showed that students who were taught this way learned significantly more words than students in the control groups.

But Beck and McKeown were not satisfied with the number of words students had learned, and they designed a second experiment in which students were taught second-tier words the same way, but then did more systematic, carefully spaced follow-up teaching in subsequent weeks with a subset of the words. Teachers spent five days on each book:

- On the first day, students heard and discussed the story.
- On the second day, the teacher systematically taught the first three words.
- On the third day, the teacher taught the remaining three words (the target words).
- On the fourth and fifth days, students received more instruction on those three words.
- Four weeks later, the target words were reviewed.
- Three weeks after that, the target words were reviewed again.

Here is the review cycle used for each set of words:

| Day | Review Week 1 | Review Week 2 |
|---|---|---|
| 1 | Words from weeks 1, 2 | Words from weeks 6, 7 |
| 2 | Words from weeks 3, 4 | Words from weeks 5, 6 |
| 3 | Words from weeks 1, 3 | Words from weeks 5, 7 |
| 4 | Words from weeks 2, 4 | Words from weeks 5-7 |
| 5 | Words from weeks 1-4 | |

Follow-up testing showed that both kindergarten and first-grade students learned the target words at twice the rate they learned the first set of words. The more systematic, spaced instruction really made a difference.

Beck and McKeown conclude that learning sophisticated words as early as possible will give students a significant boost in the years ahead: "[T]he earlier word meanings are learned, the more readily they are accessed later in life," they write. "More specifically, accessing word-meaning information is more efficient and robust for words acquired early. More efficient retrieval in turn promotes comprehension, whereas effortful retrieval jeopardizes it."

The authors note that not all words need to be taught this systematically; many words can be learned with less elaborate procedures in the course of everyday classroom instruction. But their big point is that without very systematic, skilled teaching of sophisticated words, the achievement gap will get wider every year students are in school.

Below are the books used in the study and the second-tier words selected from each one for special instruction:

Kindergarten:

*An Extraordinary Egg* by Leo Lionni: *astonished, enormous, extraordinary*
*Bremen Town Musicians* by Ilse Plume: *feast, exhausted, cautiously*
*Doctor DeSoto* by William Steig: *protect, quiver, timid*
*How Many Stars in the Sky* by Lenny Hort: *gazing, dazzling*
*Jamela's Dress* by Niki Daly: *clutching, cross*
*Mouse in the House* by Patricia Baehr: *toppled, nibble, appear*
*Pocket for Corduroy* by Don Freeman: *affectionate, drowsy, reluctant*
*Mr. Tanen's Ties* by Maryann Cocca-Leffler: *appropriate, concentrate, charming*
*Mrs. Potter's Pig* by Phyllis Root: *glisten, complain*
*Rusty, Trusty Tractor* by Joy Cowley: *sprout*
*Santa's Book of Names* by David McPhail: *lunge*
*Sweet Strawberries* by Phyllis Reynolds Naylor: *impatient, stingy*
*The Popcorn Dragon* by Jane Thayer: *envious, forlorn, delighted*

First Grade:

*Amos and Boris* by William Steig: *miserable, immense, leisurely*
*Bravest Dog Ever…The Story of Balto* by Natalie Standiford: *panic*
*Burnt Toast on Davenport Street* by Tim Egan: *festive, absurd*
*Friday Night at Hodges' Café* by Tim Egan: *satisfy, menacing, exquisite*

*Grandpa's Teeth* by Rod Clement: *complain*
*Ida and the Wool Smugglers* by Sue Ann Alderson: *meadow*
*Livingston Mouse* by Pamela Duncan Edwards: *argumentative*
*Metropolitan Cow* by Tim Egan: *fortunate, dignified, rambunctious*
*Mole's Hill* by Lois Ehlert: *snarl, quiver, stroll*
*Mountain That Loved a Bird* by Alice McLerran: *amazed, nestle*
*Patchwork Quilt* by Valerie Flournoy: *dread, glanced, masterpiece*
*Possum's Harvest Moon* by Anne Hunter: *gaze, creature*

"Increasing Young Low-Income Children's Oral Vocabulary Repertoires Through Rich and Focused Instruction" by Isabel Beck and Margaret McKeown in *Elementary School Journal*, January 2007 (Vol. 107, #3, p. 251-271), no e-link available

## 4. The Value – and Limitations – of Teacher Reading Strategies

In this regular "Ask the Cognitive Scientist" report in *American Educator*, University of Virginia psychology professor Daniel Willingham looks at whether it's worthwhile to teach reading comprehension strategies. Here's his argument:

• The name of the game from kindergarten through second or third grade is learning to decode and read fluently. Willingham believes there is little to be gained from teaching reading strategies before students have mastered decoding.

• Starting in third and fourth grade, teaching children reading strategies is definitely a good idea. Strategies are a low-cost way to give developing readers a one-time boost; strategies are a helpful, temporary bridge to what mature readers must be able to do: understand what the author is saying. Literate adults don't construct story maps or pose and answer questions as they read the morning paper – but they do know that the goal of reading is to obtain meaning, and they monitor their comprehension to make sure they understand.

• Students pick up reading strategies quite quickly (usually in five or six lessons), so spending weeks and weeks teaching strategies doesn't add value. Reading strategies, says Willingham, are really tricks, similar to learning to check your work in mathematics. The main challenge is getting students to *use* the strategies on a consistent basis.

• The much bigger and more time-consuming challenges for reading teachers are: (a) building students' *vocabulary* (see the preceding article), and (b) building broad *background knowledge*. These two, says Willingham, "must be the product of years of systematic instruction as well as constant exposure to high-quality books, films, conversations, and so on, which provide students with incidental exposure to a great deal of new vocabulary and knowledge." These are key to filling in the gaps and making the inferences necessary to understand most written material.

Willingham goes on to describe the difference between listening comprehension, at which most of us are quite proficient by the time we enter school, and silent reading comprehension. When we are reading silently, we face three challenges that make comprehension more difficult: (a) monitoring our attention and understanding – it's easy for our mind to wander; (b) activating prior knowledge – authors make assumptions about what we

already know; and (c) relating sentences to one another and making inferences to fill in the gaps in a writer's prose. For example, look at this short paragraph:

*Bill came to my house yesterday. He dropped a cup of coffee. My rug is a mess.*

The reader must infer that Bill's coffee messed up the rug, even though it's not explicitly stated. Proficient readers do this all the time.

Almost all reading strategies are designed to help developing readers with these three challenges so they can make the transition from primary-grade listening comprehension to proficient reading comprehension. Some of the strategies have plenty of data backing them up, and others have a less robust research base. Willingham provides the following list from the National Reading Panel's research (2000):

<u>Strategies to help students monitor their comprehension:</u>

• *Comprehension monitoring*: readers are taught to become aware of when they do not understand, for example by formulating what exactly is causing them difficulty. Good evidence of effectiveness.

• *Listening actively*: students learn to think critically as they listen and to appreciate that listening involves understanding a message from the speaker. Research inconclusive.

<u>Strategies to help students relate sentences to one another:</u>

• *Graphic organizer*: Students learn how to make graphic representations of texts, for example, story maps. Good evidence of effectiveness.

• *Question answering*: After students read a text, the teacher poses questions that emphasize the information students should have obtained from the text. Good evidence of effectiveness.

• *Question generation*: Students are taught to generate their own questions, to be posed during reading, that integrate large units of meaning. Good evidence of effectiveness.

• *Summarization*: Students are taught techniques of summarizing, e.g., deleting redundant information and choosing a topic sentence for the main idea. Good evidence of effectiveness.

• *Mental imagery*: Students are instructed to create a mental visual image based on the text. Research inconclusive.

• *Cooperative learning*: Students enact comprehension strategies – for example, prediction and summarization – in small groups, rather than with the teacher. Good evidence of effectiveness.

• *Story structure*: Students are taught the typical structure of a story and learn how to create a story map. Good evidence of effectiveness.

• *Multiple strategy instruction*: Multiple strategies are taught, often summarization, prediction, question generation, and clarification of confusing words and passages. Good evidence of effectiveness.

<u>Strategies to help students activate their prior knowledge:</u>

• *Prior knowledge*: Students are encouraged to apply what they know from their own lives to the text, or to consider the theme of the text before reading it. Research inconclusive.

• *Vocabulary-comprehension relationship*: Students are encouraged to use background knowledge (as well as textual clues) to make educated guesses about the meaning of unfamiliar words. Research inconclusive.

<u>Other strategies:</u>

• *Curriculum*: Strategy instruction is carried over to subjects other than reading. Thus, students might study story structure during reading time, apply the structure themselves during writing time, and look for story structure during social studies. Research inconclusive.
• *Mnemonic*: Students are taught to associate a keyword with some aspect of the text to help memory for that aspect; it is designed for use with very unfamiliar words. Research inconclusive.
• *Psycholinguistic*: Students are taught language conventions that will help comprehension; for example, how to find the antecedent of a pronoun like "she." Research inconclusive.
• *Teacher training*: Teachers learn techniques by which to teach reading strategies. Research inconclusive.

Willingham has one more interesting observation: research probably underestimates the impact of reading strategy instruction for the following reason: When a teacher teaches strategies to a class, there are usually three categories of students in the room:

- Students who aren't yet fluent enough at decoding to use the strategy;
- Students who have already discovered the strategy on their own;
- Students who can decode fluently and haven't learned the strategy yet.

The first two groups of students wouldn't show any gains from strategy instruction, says Willingham. Only the third category of students would benefit, which cuts way back on positive findings of a study.

"The Usefulness of Brief Instruction in Reading Comprehension Strategies" by Daniel Willingham in *American Educator*, Winter 2006/07 (Vol. 30, #4, p. 39-45, 50), http://www.aft.org/pubs-reports/american_educator/issues/winter06-07/CogSci.pdf

## 5. Five Ways to Increase Student Writing in Math Classes

In this online piece from the Center for Performance Assessment, author/consultant Doug Reeves suggests five ways to improve students' performance on constructed-response items on state math assessments. "These test items can represent a great opportunity for improvement," he writes, "as constructed-response items typically have a greater point value than multiple-choice items."

• *Incorporate writing into traditional multiple-choice test items.* Teachers can do this by having students explain why one of the incorrect answers is wrong – which gets students writing about math and thinking critically about distracters.

• *Find ways of using graphs and charts in other subjects.* Science and social studies are ideal for this; if teachers of these subjects get students to display data visually just once a week, students will have dramatically more chances to learn these skills.

• *Have students create math rubrics.* When students are challenged to tease out the different levels of math problem-solving, they get a much deeper understanding of what proficient work looks like – and better understand adult-created scoring rubrics.

• *Express ideas three ways: with numbers, symbols, and words.* We tend to assume that some people are good with numbers and some are good with words, but teachers can bridge this divide by requiring students to look at problems and solutions in three modes.

• *Get creatively crazy about measurement.* "Hallways, gymnasiums, cafeterias, playgrounds – every cubic centimeter of the school offers opportunities for measurement, display, and description using a variety of units," says Reeves. "Within the walls of a single classroom, students can create treasure hunts with the directions expressed in yards, inches, meters, and fractions of a mile. Every class in physical education, art, and almost every other subject provides wonderful opportunities for just a few minutes of clear reinforcement of measurement."

"Top Five Tips to Use Student Writing to Improve Math Achievement" by Douglas Reeves in a *Center for Performance Assessment Update*, January 4, 2007

## 6. Chronic Procrastination and Work Avoidance – What People Can Do

In this article in the *New York Times Education Life* section, Michelle Slatalla offers advice to college students who have a tendency to avoid buckling down and writing big papers – but her suggestions might also apply to educators who avoid daunting tasks:

• *Am I a chronic procrastinator, or is my work-avoidance situation-specific?* Chronic procrastinators have a deeper problem: they postpone everything in life, showing up late for work, making great excuses for belated birthday cards, and blowing deadlines large and small. "To say to a chronic procrastinator 'just do it' is like saying to a clinically depressed person 'just cheer up,'" advises Joseph Ferrari, a psychologist at DePaul University in Chicago. These people need professional counseling – unless they can learn from the consequences of their actions. But situation-specific procrastinators can improve more readily. To judge which you are, you can take "That's Me, That's Not Me," a quiz designed by Ohio State professor Bruce Tuckman: http://all.successcenter.ohio-state.edu/quizzes.asp.

• *Do I really work better at the last minute?* Most procrastinators claim that they do their best work under deadline pressure. The truth, says Tuckman, is that they work *only* under pressure, and doing serious work at the last minute doesn't produce the best results. The trick is to find ways of creating pressure that motivates you to work *earlier* in the process.

• *What is causing me to wait until the last minute?* Ferrari says there are "arousal" procrastinators – thrill-seekers who get a rush from leaving something until just before the deadline and then working like crazy to finish – and "avoidant" procrastinators, who don't get started because they are afraid they will fail. Figuring out the reason behind your procrastination could help get to the heart of the problem.

• *What is to be done?* When people look at a big project – the "forest" – it seems daunting and there's a strong tendency to put it off. But if they focus on one "tree" at a time, they can get started. The trick is to break down the project into small, specific, manageable increments that require no more than an hour of work on any given day – and then systematically "cut down one tree" each day.

"The Big Dilly-Dally" by Michelle Slatalla in the *New York Times Education Life*, January 7, 2007, p. 14, http://www.nytimes.com/2007/01/07/education/edlife/07guidancecounselor.html

## 7. Precocious Sexuality on Stage in a Suburban Middle School

In this column on the *New York Times* editorial page, Lawrence Downes describes a recent Long Island, NY middle-school talent show where sixth, seventh, and eighth-grade girls performed "elaborately choreographed re-creations of music videos, in tiny skirts or tight shorts, with bare bellies, rouged cheeks and glittery eyes. They writhe and strut, shake their bottoms, splay their legs, thrust their chests out and in and out again. Some straddle empty chairs, like lap dancers without laps. They don't smile much. Their faces are locked from grim exertion, from all that leaping up and lying down without poles to hold onto."

Downes is shocked by the show, and even more horrified by parents' and students' reactions: cheers, whistles, and applause. If parents have given up on "society's march toward eroticized adolescence," he asks, how can schools resist? He finds it ironic that these parents protect and micromanage their children yet "allow the culture of boy-toy sexuality to bore unchecked into their little ones' ears and eyeballs, displacing their nimble and growing brains and impoverishing the sense of wider possibilities."

"Boys don't seem to have such constricted horizons," says Downes. "They wouldn't stand for it – much less waggle their butts and roll around for applause on the floor of a school auditorium."

"Middle School Girls Gone Wild: When Little Bratz Strut Their Stuff for Mom and Dad" by Lawrence Downes in the *New York Times*, December 29, 2006, p. A24, no free e-link

## 8. Short Items:

***a. Discovery box websites*** – This sidebar in an *Essential Teacher* article gives a number of websites for discovery boxes that are available online:

• A virtual discovery box at WGTE Public Broadcasting: http://www.historyhunt.org/attic.htm

• U.S. Fish and Wildlife Service, Pacific Region, Leavenworth NFH Complex: http://www.fws.gov/leavenworth/boxes.htm

"Discovery Boxes, Windows, and Mirrors" by Kate Mastruserio Reynolds and Deb Pattee in *Essential Teacher*, December 2006 (Vol. 3, #4, p. 30-33), no e-link available

***b. Why study science?*** – In this lively article in *American Educator*, a scientific illustrator, a roller coaster designer, and a forensics services technician talk about their work and the scientific training and skills it requires. See the link below for the full text.

"Science Careers for the 'Why Take Science?' Crowd" by Megan Sullivan and Steve Metz in *American Educator*, Winter 2006/07 (Vol. 30, #4, p. 39-45, 50), http://www.aft.org/pubs-reports/american_educator/issues/winter06-07/nsta.htm

***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 36 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 (with occasional breaks; there are about 50 issues a year).

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- How to change access e-mail or password

### *Publications covered*

*Those read this week are underlined.*

American Educator
American School Board Journal
ASCD, CEC SmartBriefs
Atlantic Monthly
Catalyst Chicago
CommonWealth Magazine
Daily EdNews
Ed. Magazine
EDge
Education Digest
Education Gadfly
Education Next
Education Week (Quality Counts)
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
NASSP Bulletin
New York Times
New Yorker
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
Teacher Magazine
Teachers College Record
TESOL Quarterly
Theory Into Practice
Times Educational Supplement, Magazine