Marshall Memo 600

A Weekly Round-up of Important Ideas and Research in K-12 Education
August 24, 2015

In This Issue:

Quotes of the Week

"In science it's not a sin to change your mind when the evidence demands it."
Joel Achenbach (see item #1)

"Apologizing feels uncomfortable and risky. There's a loss of power or face involved – it rearranges the status hierarchy and makes us beholden, at least temporarily, to the other party. That doesn't feel good."
Maurice Schweitzer, Alison Wood Brooks, and Adam Galinsky (see item #2)

"I realized years ago that I needed to remove the term 'cover' from my professional vocabulary and I encourage the teachers I mentor to do the same. There is a huge difference between teaching and covering."
Nicole Naditz, ACTFL National Language Teacher of the Year, in an interview in *The Language Educator*, August/September 2015 (Vol. 10, #3, p. 24-27), no free e-link

"Hiring a teacher should be like buying a house. But according to a new report from Bellwether Education Partners, California treats the process like it's purchasing a widget."
Kate Stringer in "Rethinking Teacher Preparation" in *The Education Gadfly*, August 19, 2015 (Vol. 15, #32), http://edexcellence.net/articles/rethinking-teacher-preparation

"I don't think writers or artists can afford to have a 'creative temperament' or to wait for inspiration to descend. You have to simply sit there and make yourself do it. Once your mind understands that it has no excuses, it's remarkable how it begins to play along."
Salman Rushdie (see item #6)

"In every successful professional learning scenario I've been involved in, the leaders and learners actually wanted to be there."
Fred Ende (see item #7)

1. The Challenging Job That Science Teachers Have in Today's World

In this article in *National Geographic*, Joel Achenbach examines the gap between the scientific consensus and the beliefs held by many Americans. Here are a few examples of the disparity in beliefs on four hot issues (from a September/October 2014 survey of AAAS scientists and an August 2014 survey of U.S. adults):

- Humans have evolved over time: Scientists 98%, U.S. adults 65%
- Climate change is mostly due to human activity: Scientists 87%, U.S. adults 50%
- Childhood vaccines such as MMR should be required: Scientists 86%, U.S. adults 68%
- It's safe to eat genetically modified foods: Scientists 88%, U.S. adults 37%

In addition, there are pockets of resistance to the fluoridation of drinking water (Portland, Oregon has unfluoridated water because of determined citizen opposition) and a small number of Americans believe the 1969 Apollo moon landing was faked. "Empowered by their own sources of information and their own interpretations of research," says Achenbach, "doubters have declared war on the consensus of experts."

In principle, science should help us decide what to believe about the world around us and how to act on those beliefs – but the gulf between what science says and many people's beliefs is wide. What's going on here? The Internet's democratization of information is part of the story, but there's also a widespread misconception about what science really is. "Science is not a body of facts," says geophysicist Marcia McNutt, the editor of a major scientific journal. "Science is a method for deciding whether what we choose to believe has a basis in the laws of nature or not."

Over time, the biggest problem has been getting people to let go of seemingly logical, fact-based beliefs. When Galileo said the Earth spins on its axis and orbits the sun, he was asking people to disbelieve their senses and accept something that defied common sense. After all, we see the sun crossing the sky every day and we certainly don't feel the Earth spinning under our feet. Similarly, Darwin's theory of evolution was wildly counterintuitive, flying in the face of people's beliefs and observations. The same is true of the proposition that carbon dioxide, an invisible gas that makes up less than a tenth of one percent of the Earth's atmosphere, could be making the whole planet's climate warmer. "Even when we intellectually accept these precepts of science," says Achenbach, "we subconsciously cling to our intuitions – what researchers call our naïve beliefs… They lurk in our brains, chirping at us as we try to make sense of the world."

Scientists themselves struggle with the scientific method, sometimes succumbing to confirmation bias (the tendency to look for and see only evidence that confirms what we already believe), and there have been plenty of instances of fraud and error. But scientists have a well-establish practice of peer review and replication and they delight in debunking each other's work. "Science will find the truth," says Francis Collins, director of the National Institutes of Health. "It may get it wrong the first time and maybe the second time, but ultimately it will find the truth." And science is a group effort; major breakthroughs and insights are rarely the product of a lone genius. "The (boring) truth," says Achenbach, "is that it usually advances incrementally, through the steady accretion of data and insights gathered by many people over many years."

Are the chasms between the scientific consensus and the beliefs of many Americans the product of poor scientific literacy? Not so, says Yale professor Dan Kahan. In a study of a representative sample of 1,540 U.S. adults, he found that better scientific literacy was associated with stronger views – at *both* ends of the climate-change opinion spectrum! Kahan believes this is because people use their scientific knowledge to reinforce beliefs they already hold, with people falling into two camps: those with a more egalitarian, communitarian mindset (they're suspicious of the carbon industry and more likely to believe that global warming is real); and those with a hierarchical, individualistic mindset (they respect leaders of industry, don't like government interference, and are apt to reject the view that human activity is making the planet warmer). In other words, climate change has become a litmus test for which group we're in, what *people like us* believe, who we are. "Science appeals to our rational brain," says Achenbach, "but our beliefs are motivated largely by emotion, and the biggest motivation is remaining tight with our peers."

Marcia McNutt puts it more bluntly: "We're all in high school. We've never left high school. People still have a need to fit in, and that need to fit in is so strong that local values and local opinions are always trumping science. And they will continue to trump science, especially when there is no clear downside to ignoring science." The Internet makes it easier for each tribe to find its own experts and put together plausible arguments for its beliefs. People can live in a "filter bubble" that lets in only the information they already believe.

Can scientists and educators penetrate people's bubbles? Throwing scientific facts at those with contrarian beliefs doesn't work. What's sometimes effective is hearing from trusted people. Liz Neeley, who trains scientists to be better communicators, confronted her father, a climate-change skeptic who got most of his information from conservative media. "Do you believe them or me?" she demanded, saying that she accepted what scientists said about the issue and personally knew a lot of them. "If you think I'm wrong, the you're telling me that you don't trust me." Her father softened his position – but it wasn't facts that moved him.

Achenbach is troubled by all this. "[E]volution actually happened," he says. "Biology is incomprehensible without it. There aren't really two sides to all these issues. Climate change is happening. Vaccines really do save lives. Being right does matter – and the science tribe has a long track record of getting things right in the end. Modern society is built on things it got right. Doubting science also has consequences. The people who believe vaccines cause autism

– often well educated and affluent, by the way – are undermining 'herd immunity' to such diseases as whooping cough and measles… In the climate debate the consequences of doubt are likely global and enduring. In the U.S., climate change skeptics have achieved their fundamental goal of halting legislative action to combat global warming. They haven't had to win the debate on the merits; they've merely had to fog the room enough to keep laws governing greenhouse gas emissions from being enacted." He was horrified to hear actress and anti-vaccine activist Jenny McCarthy say on the *Oprah Winfrey Show*, "The University of Google is where I got my degree from."

Is the solution for scientists to be more public and forceful? Achenbach sees a danger in this, since the push-back on scientific theories is that they're political and driven by environmental activism, not scientific data. "It's their very detachment, what you might call the cold-bloodedness of science, that makes science the killer app," he says. "It's the way science tells us the truth rather than what we'd like the truth to be. Scientists can be as dogmatic as anyone else – but their dogma is always wilting in the hot glare of new research. In science it's not a sin to change your mind when the evidence demands it. For some people, the tribe is more important than the truth; for the best scientists, the truth is more important than the tribe."

Which brings Achenbach to the way science is being taught in schools. "Students come away thinking of science as a collection of facts, not a method," he says. Even many college students don't really understand what evidence is, says Andrew Shtulman of Occidental College. And indeed, the scientific method doesn't come naturally. But neither does democracy. "For most of human history neither existed," says Achenbach. "We went around killing each other to get on a throne, praying to a rain god, and for better or worse, doing things pretty much as our ancestors did. Now we have incredibly rapid change, and it's scary sometimes. It's not all progress. Our science has made us the dominant organisms, with all due respect to the ants and blue-green algae, and we're changing the whole planet. Of course we're right to ask questions about some of the things science and technology allow us to do… We need to get a lot better at finding answers, because it's certain the questions won't be getting any simpler."

McNutt has the final word: "Everybody should be questioning. That's the hallmark of a scientist. But then they should use the scientific method, or trust people using the scientific method, to decide which way they fall on those questions."

"The Age of Disbelief" by Joel Achenbach in *National Geographic*, March 2015 (Vol. 227, #3, p. 30-47), http://bit.ly/1hDc4Vv

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2. Effective Apologies

In this *Harvard Business Review* article, Maurice Schweitzer (University of Pennsylvania's Wharton School), Alison Wood Brooks (Harvard Business School), and Adam Galinsky (Columbia Business School) say that when organizations mess up, "Senior leaders must immediately express candor, remorse, and a commitment to change in a high-profile

setting – and make it sincere." The problem is that people are "psychologically predisposed to find reasons (or excuses) to delay or avoid saying we're sorry," say Schweitzer, Brooks, and Galinsky. "Apologizing feels uncomfortable and risky. There's a loss of power or face involved – it rearranges the status hierarchy and makes us beholden, at least temporarily, to the other party. That doesn't feel good." For all these reasons, leaders become defensive, obsess about legal liability, argue the other side of the story, get mired in indecision, and shift blame to others.

Of course not every mistake requires a public apology. Here are the authors' criteria for deciding when that's necessary:

• *Harm was caused, whether real or perceived*. If so, the organization's leaders need to see the situation from the victims' viewpoint and immediately address their concerns. "As we make the apology decision," say Schweitzer, Brooks, and Galinsky, "we need to consider the 'psychological contract' – the expectations customers, employees, business partners, and other stakeholders have about an organization's responsibilities and what is right and fair… To understand those expectations, managers have to imagine the situation from different vantage points."

• *The violation involves the organization's core mission*. Examples: food poisoning in a restaurant or steering problems in an automobile. "Core violations pose a fundamental threat to the mission of the organization," say the authors, and an immediate apology is essential.

• *Public outrage is likely*. In the era of social media, even a small incident can go viral. Consider the case of the Canadian singer whose guitar was damaged by United Airlines, which then subjected him to a Kafkaesque customer service experience. His video "United Breaks Guitars" https://www.youtube.com/watch?v=5YGc4zOqozo has been viewed by more than 15 million people and ultimately led to a personal apology from a United managing director. Public outrage is most likely when word gets out about a powerful organization doing harm to an ordinary individual.

• *The organization is willing and able to change its behavior*. Leaders must make an honest assessment of this, say Schweitzer, Brooks, and Galinsky. "If they can't or don't want to do things differently in the future, the case for making an apology is weak, because it will sound hollow and unconvincing." And if the organization is willing to make changes, it's important not to skip the apology: "[W]ithout a show of remorse, people are likely to think you're whitewashing the violation."

Okay, let's say a situation meets some or all of these criteria and clearly merits an apology. How to go about it? "It's astonishing how many well-intentioned, sophisticated organizations completely botch apologies," say the authors. "While a good apology can restore balance or even improve relationships, a bad apology can make things much worse." Here are some suggestions for apologizing well:

• *Who* – With serious mess-ups, the organization's top leader should be out front making the apology, not passing the buck to underlings, and should directly address those who were harmed through a channel (perhaps YouTube) that can reach them all.

• *What* – Candor, remorse, and commitment to change are the key components. Effective apologies "leave no room for equivocation or misinterpretation, and they make absolutely clear that the organization acknowledges both the harm that was caused and its own responsibility," say Schweitzer, Brooks, and Galinsky. "Organizations should never sound defensive or as if they're trying to justify a violation." But it's appropriate to include details of what's being done to remedy the situation – for example, with a flight delay, explaining what's broken, what's being done to fix it, how long it will take, and that safety is the priority. Remorse is expressed with the right choice of words and a certain amount of self-abasement: "We really messed this one up," said Facebook CEO Mark Zuckerberg after a glitchy product launch. "Even though I wish I hadn't made so many of you angry, I am glad we got to hear you." As for commitment to change, the apology should create distance from the "old self" that screwed up and clear movement to the "new self" that won't let it happen again. As part of this, people may be fired and/or new protocols put in place.

• *Where* – It's often effective for the organization's leader to go to the site of the problem, make a public apology, and personally console the victims. But this can come across as a publicity stunt, and the leader may be caught in an uncontrolled environment (what if the victims don't accept the apology?). A statement on YouTube can sometimes be more effective.

• *When* – "A good apology arrives quickly," say the authors. "Speed signals sincerity and dispels the idea that executives feel uncertainty and ambiguity about their responsibility… The desire to be cautious is reasonable, but we believe that it's better to offer a quick 'placeholder' apology than to be silent."

• *How* – Informal language can be effective, say the authors, for example, Zuckerberg's "We really messed this one up." In-person statements are often better than written material, since it's possible for the leader to convey emotion, humility, and empathy through facial expressions, tears, and vigorous gestures. However, public apologies can go wrong if they're not thought through. The worst example was the statement by BP's chief executive during the catastrophic Deepwater Horizon oil spill in the Gulf of Mexico: "We're sorry for the massive disruption it's caused to [people's] lives. There's no one who wants this thing over more than I do. I'd like my life back." In this case, an apology rehearsal would have made all the difference.

"The Organizational Apology: A Step-by-Step Guide" by Maurice Schweitzer, Alison Wood Brooks, and Adam Galinsky in *Harvard Business Review*, September 2015 (Vol. 93, #9, p. 44-52), https://hbr.org/2015/09/the-organizational-apology

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3. Should Employees' Performance Rankings Be Shared?

In this *New York Times* article, Phyllis Korkki reports on two recent studies of companies that used performance data to publicly rank employees. The theory of action behind ranking is that it will motivate low-performing people to work harder and smarter while helping high-performing people maintain their edge. But does this work in practice?

The first study by Wharton professor Iwan Barankay compared furniture salespeople who were told how their results compared to colleagues, with salespeople who received their individual data but were not told how it compared with others. Those who were unaware of their comparative ranking did better in subsequent sales than lower-performing salespeople who were told their status compared to others. Barankay believes this is because people tend to be optimistic about how they're doing and are discouraged when confronted with the fact that they're average or below average – which causes their performance to wilt. What about the sales representatives who had high rankings compared to others? Their future performance stayed the same.

In the second study, Steven Blader and Claudine Gartenberg of New York University and Andrea Prat of Columbia University analyzed truck drivers' fuel use and driving behavior and shared comparative data with some drivers and just individual data with others. Some of the drivers had taken part in a "lean management" program intended to build a more team-oriented environment in pursuit of greater efficiency and safety. Despite the program's stated emphasis on teamwork and assurances from management that the data wouldn't be used for high-stakes evaluation, drivers viewed the rankings with suspicion and resentment, fearing that the company was trying to pit employees against one another. But truck drivers who had not taken part in the teamwork program were motivated by the rankings and improved their performance.

The takeaway? "Competition in a collaborative environment doesn't work well," says Blader. In a work environment in which teamwork and cooperation are key to success, it's better to tell people their individual performance data and not rank them against colleagues. But if the organization's culture is "self-focused," publicizing rankings may be effective.

"Applied Science: At Work, Misguided Measures" by Phyllis Korkki in *The New York Times*, July 12, 2015, http://nyti.ms/1JfgJUb

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4. Improving the Quality of Feedback After Classroom Visits

"If we expect teachers to grow, we must pay more attention to the quality of support they receive," says Miriam Greenberg (Harvard Center for Education Policy Research) in this article in *Education Week*. "[In] order for classroom observations to be meaningful to teachers, they must be accompanied by high-quality feedback." The problem, says Greenberg, is that districts and states are pushing principals and other supervisors to score and evaluate teachers' performance rather than giving specific, detailed, face-to-face feedback. "Identifying the difference between 'proficient' and 'effective' differentiation, for example, isn't worth much if you can't support a teacher in understanding how this plays out in the classroom and what would make a positive difference to his or her students," she says. Here are Greenberg's suggestions for improving the quality of feedback:

• *Listen in*. Record some supervisor/teacher conversations with teachers' permission (perhaps using a smartphone) and use them at administrator meetings for self-reflection, calibration, and professional development among supervisors.

• *Poll teachers*. Anonymous questionnaires can provide candid feedback to administrators and perhaps identify those who are best at this art form so their techniques can be emulated by others.

• *Work with classroom videos*. When a supervisor and teacher watch classroom footage together, the conversation is often less adversarial and more helpful than when supervisors rely on notes and memory.

"Listening In: Do We Need Quality Assurance for Teacher Feedback?" by Miriam Greenberg in *Education Week*, August 19, 2015 (Vol. 35, #1, p. 48), www.edweek.org; Greenberg can be reached at miriam_greenberg@gse.harvard.edu.

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5. Infusing Movement Into Secondary-School Classrooms

(Originally titled "Learning from the Feet Up")

In this article in *Education Update*, Kathy Checkley reports on a number of ways secondary teachers can get teenagers moving in their classrooms to overcome torpor, increase blood flow to their brains, and get neurons firing. Sitting for extended periods of time "is biologically incompatible" with effective brain function, says Michael Kuczala of the Regional Training Center in New Jersey. "The brain wants the body to move… Movement is important because it makes for a better learner."

Why don't more teachers get adolescents moving in class? One reason is concern about classroom management and losing control of barely-under-control students. But in fact, well-orchestrated movement may *prevent* discipline problems and help problem students behave better. Another reason many teachers hesitate to build movement into their classes is that they've forgotten how stultifying and, in fact, exhausting it is to sit for long periods of time.

To change the conventional mindset about what a classroom looks like (students sit, the teacher moves around), PD leaders should remind teachers of what it's like to endure long meetings and get them on their feet and active during workshops. When this happens, says Kuczala, "They begin to feel and understand that we don't just learn from the neck up. We learn from the feet up." Here are some specific ideas for secondary classrooms:

- Standing up and stretching – A short break with students reaching arms overhead, bending left and right, touching the floor, and standing on their toes is amazingly beneficial.
- Acting out content – In a geometry class, the whole class stands and students mime circumference, diameter, and radius; in a Spanish class, students act out cracking an egg as they learn *heuvo*; in English, students act out the word *lackadaisical*.
- Give one, get one – Students find a partner and compare notes on the day's lesson, identifying similarities and differences in their learning.
- Voting with their feet – Students peruse signs around the classroom displaying variations on the answer to a key question and stand by the one they think is best.
- Learning stations – Students move from one activity to another, cycling through all of them by the end of the period.

- Gallery walk – For example, in a class on the Holocaust using Elie Wiesel's book, *Night*, students spend 20 minutes moving around the room jotting reactions to a series of primary-source images and displays.
- Story telling – The teacher tells a story and students work in groups to retell the story while speaking in Spanish, using whiteboards, iPads, or acting it out.

"Learning from the Feet Up" by Kathy Checkley in *Education Update*, August 2015 (Vol. 57, #8, p. 2-3, 6), available for purchase at http://bit.ly/1WO55ZG

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6. Salman Rushdie On His Work

In this *Harvard Business Review* interview with Allison Beard, author Salman Rushdie talks about his life as a writer. Some excerpts:

• On his work ethic: "I don't think writers or artists can afford to have a 'creative temperament' or to wait for inspiration to descend. You have to simply sit there and make yourself do it. Once your mind understands that it has no excuses, it's remarkable how it begins to play along."

• On how he knows he's finished with a book: "Exhaustion. It's not that I'm physically tired, but my imagination is. There's a point at which you're not making it better; you're just making it different. You have to be good at recognizing that point."

• On how he chooses critical friends to critique an almost-finished draft: "You need non-sycophantic people who will tell you the truth."

• On why leaders should read fiction: "[O]ne thing you learn as a history major is how contested events are. Facts are slippery. The truth is imperfect. Fiction recognizes that. There's also another kind of truth – the truth of how we human beings relate to one another, to place, to ideas and belief systems – and you find that in a novel."

"Life's Work: An Interview with Salman Rushdie" by Alison Beard in *Harvard Business Review*, September 2015 (Vol. 93, #9, p. 128), http://bit.ly/1I9pJbu

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7. A TV Game Show's Techniques for Improving Professional Development

(Originally titled "The Millionaire Method to Powerful PD")

In this *Education Update* article, Fred Ende (Yorktown Heights NY BOCES) suggests that the three "lifelines" in in the TV show *Who Wants to Be a Millionaire* have parallels in professional development workshops:

• *Ask the audience* – "In every successful professional learning scenario I've been involved in," says Ende, "the leaders and learners actually wanted to be there." And everyone had a voice.

• *Phone-a-friend* – "We need strategic advisors – nodes in our network who can honestly critique our work," says Ende. "This lifeline is about reaching out to a targeted few people with questions you would not ask the stakeholders at large."

• *50-50* – It's all about prioritizing, says Ende. He recommends working backward from the ideal end result – improving teaching practice and student learning – and focusing on what needs to happen and the simplest process to get there.

"The Millionaire Method to Powerful PD" by Fred Ende in *Education Update*, August 2015 (Vol. 57, #8, p. 7), http://bit.ly/1NEPcko; Ende can be reached at fende@pnwboces.org.

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8. Short Items:

a. Web tools for adding questions to videos – In this article in *The Language Educator*, California teacher Nicole Naditz (ACTFL National Language Teacher of the Year) recommends Zaption www.zaption.com, EduCanon www.educanon.com, and EdPuzzle www.edpuzzle.com, all of which allow teachers to add questions and other interactive features to videos. "Rather than requiring students to watch the entire video and then answer all questions at the end," says Naditz, "teachers can place their questions throughout the video, and even adjust the video settings to allow (or not allow) students to repeat the segment that occurred before the question." She also recommends Blendspace www.blendspace.com and LessonPaths www.lessonpaths.com to sequence authentic documents on a theme and add comprehension and language production tasks.

"Tech Watch: Tips from Educators" by Nicole Naditz in *The Language Educator*, August/September 2015 (Vol. 10, #3, p. 57)

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b. Free language teaching videos – *The Language Educator* recommends these websites (among others):

• VAULTT – Video Assistance for Understanding Language Teaching Techniques http://vaultt.clear.msu.edu from the Center for Language Education and Research (CLEAR) at Michigan State University is a collection of videos highlighting various aspects of classroom teaching.

• Saber es Practico www.saberespractico.com is a Spanish-language site with articles and other material focused on events occurring that day.

"Tech Watch: Websites to Watch" in *The Language Educator*, August/September 2015 (Vol. 10, #3, p. 58)

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If you have feedback or suggestions,
please e-mail kim.marshall48@gmail.com

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 44 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 64 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 50 issues a year).

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Those read this week are underlined.

American Educational Research Journal
American Educator
American Journal of Education
American School Board Journal
AMLE Magazine
ASCA School Counselor
ASCD SmartBrief/Public Education NewsBlast
Better: Evidence-Based Education
Center for Performance Assessment Newsletter
District Administration
Ed. Magazine
Education Digest
Education Gadfly
Education Next
Education Week
Educational Evaluation and Policy Analysis
Educational Horizons
Educational Leadership
Educational Researcher
Edutopia
Elementary School Journal
Essential Teacher
Go Teach
Harvard Business Review
Harvard Educational Review
Independent School
Journal of Education for Students Placed At Risk (JESPAR)
Journal of Staff Development
Kappa Delta Pi Record
Knowledge Quest
Literacy Today
Middle School Journal
Peabody Journal of Education
Perspectives
Phi Delta Kappan
Principal
Principal Leadership
Principal's Research Review
Reading Research Quarterly
Responsive Classroom Newsletter
Rethinking Schools
Review of Educational Research
School Administrator
School Library Journal
Teacher
Teachers College Record
Teaching Children Mathematics
Teaching Exceptional Children/Exceptional Children
The Atlantic
The Chronicle of Higher Education
The District Management Journal
The Journal of the Learning Sciences
The Language Educator
The Learning Principal/Learning System/Tools for Schools
The New York Times
The New Yorker
The Reading Teacher
Theory Into Practice
Time Magazine
Wharton Leadership Digest