Marshall Memo 982

A Weekly Round-up of Important Ideas and Research in K-12 Education
April 17, 2023

In This Issue:

Quotes of the Week

"Never mistake activity for achievement."
John Wooden, legendary UCLA basketball coach

"Through conflict, kids learn how to take responsibility for their actions and how to pick 'right-fit' friends. It's how they acquire social skills such as generosity, reciprocity, and active listening. It's how they learn how to pick their battles, set good boundaries, apologize, and figure out when to forgive and let things go."
Phyllis Fagell (see item #1)

"Sophisticated language is a kind of shorthand resting on a body of common knowledge, cultural references, allusions, idioms, and context broadly shared among the literate. Writers and speakers make assumptions about what readers and listeners know. When those assumptions are correct, when everyone is operating with the same store of background knowledge, language comprehension seems fluid and effortless. When they are incorrect, confusion quickly creeps in until all meaning is lost. If we want every child to be literate and to participate fully in American life, we must ensure all have access to the broad body of knowledge that the literate take for granted."
Robert Pondiscio in "At Long Last, E.D. Hirsch, Jr. Gets His Due: New Research Shows Big Benefits from Core Knowledge" in *Education Gadfly*, April 13, 2023
(see item #5 for details on this study)

"High-quality math experiences always encourage students to answer questions such as 'How do you know?' 'What is your strategy?' and 'Can you prove that?' Students have to dig deeply, metacognitively (thinking about their own thinking), to answer such questions, building both language and executive function competencies."
Douglas Clements and Julie Sarama (see item #3)

"I used to teach Shakespeare by powering through student complaints. In response to their perennial confusion, I would assign vocabulary lists, give a primer on Renaissance pronouns, and plug my ears to their protestations, confident that reading Shakespeare was, in fact, not really that hard."

Matthew Helmers in "Shakespeare's Adventurous Language" in *English Journal*, March 2023 (Vol. 112, #4, pp. 95-97)

"What I believe people want more than anything else is a sense of a vision that's inclusive and respectful and appreciative of who they are."

Mel King, Boston community activist and former mayoral candidate, who died March 28th at 94; see this *New York Times* obituary.

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1. Building Middle Schoolers' Interpersonal Skills

In this *Edutopia* article, Paige Tutt interviews middle-school counselor and author Phyllis Fagell on the ways young teens' undeveloped social skills discombobulate their interactions with peers and adults. Some excerpts:

"Lots of mean behavior doesn't rise to the level of bullying," says Fagell. "With bullying, there is an intent to wound. It's not just a one-off comment; there's a pattern of interactions and a power imbalance. If you have two kids on the same footing who are simply having a disagreement or saying mean things to one another, that's not bullying – that's meanness."

Conflict among kids this age is normal, even imperative, Fagell believes. "Through conflict, kids learn how to take responsibility for their actions and how to pick 'right-fit' friends. It's how they acquire social skills such as generosity, reciprocity, and active listening. It's how they learn how to pick their battles, set good boundaries, apologize, and figure out when to forgive and let things go."

Conflict is most likely, Fagell says, when young teens are made to feel uncomfortable, insecure, and inadequate – for example, a peer making a negative remark about their appearance, betraying a confidence, or commenting on how slow they were answering a teacher's question in class. "If you're vulnerable, insecure, or worrying you're not good enough," she says, "it's going to be harder to assume someone didn't intentionally want to hurt your feelings." In situations like these, adults' role is to help teens develop the cognitive flexibility to avoid jumping to conclusions and assuming ill intent.

"Every single student is going to get rejected at some point during the middle-school years," says Fagell. "These are the years when students are figuring out who they are and how they want to show up in the world." In sixth grade, according to one study, only a third of friendships last through the school year. Asked to name a best friend, only half of the middle-school students who are named as that friend will reciprocate. By high-school graduation, just one percent of middle-school friendships are still intact.

Adolescents need help dealing with their desire to be popular and fit in – and the fear of being an outsider. "Everyone knows who has social power," says Fagell, " and it is real power. Popular kids get to dictate what is considered cool and drive the behaviors of the kids who are in their orbit. You can't talk kids out of wanting to be popular." But adults might pull kids aside and make helpful observations about how certain friends bring out the best in them while others make them feel tongue-tied.

"Being kind involves a very specific set of social skills that kids need to be taught," says Fagell. "At the same time, it's incumbent on adults to call out meanness in real time." This is best done in a nonjudgmental conversation out of earshot of peers. Kids need practice at building pro-social skills, she says, rather than adults harping on what they shouldn't do – which is too often the message in anti-bullying programs. "If we want a more harmonious school culture where middle schoolers feel that sense of belonging we know they so badly need," says Fagell, "then we need to give them the skills to interact with one another in healthy ways and not wait and target the stuff that leaks out at the end."

Where should this social-emotional work take place? "Everywhere," says Fagell. "In a math class. In history class. It doesn't matter. Relational needs are everything to this age group." If it's done right, she believes, "kids will actually be in the right headspace to learn the content." But this isn't every teacher's cup of tea, and that's okay. Some might say, "I'm going to pay attention to student dynamics. I'm not comfortable jumping in but I can mention it to the counselor."

"Why Bullying Is Too Narrow a Lens for Addressing Conflict in Middle School" by Paige Tutt in *Edutopia*, March 31, 2023; Fagell's book is *Middle School Matters*.

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2. How Can We Get More Boys Interested in the HEAL Professions?

In this *Kappan* article, Tim Spitsberg (Baylor University) and Jonathan Plucker (Johns Hopkins University) say that while girls have made real gains in STEM education and women in employment, males continue to lag in the HEAL fields – health, education, administration, and literacy. In K-8 teaching, social work, and psychology, the percentage of men has dropped by at least half since 1980 (to 20 percent in 2020), and the decrease in male teachers of color is a continuing concern.

The origin of these trends is in boys' lower K-12 reading engagement and achievement compared to girls. The most recent NAEP data show a 7-point gender gap in fourth grade reading (on a 500-point scale) growing to 9 points by eighth grade and 13 by high-school graduation. In comparison, in math, girls are only 3 points behind boys by twelfth grade.

Assessments in English language arts, writing, and social studies similarly show boys falling further behind girls as they move through the grades.

Boys' level of engagement in these subjects is a key factor. A recent update of Mihaly Csikszentmihalyi's theory of "flow" – deep task engagement that leads to optimal performance – listed these key factors:

- Competence and control;
- Appropriate level of challenge;
- Clear goals and feedback;
- A focus on the immediate;
- A social connection.

For many boys, these are the very factors that seem to be missing in humanities classrooms. "In fact," say Spitsberg and Plucker, "schools instead often offer up curriculum and teaching strategies that seem diametrically opposed to the attainment of flow states… School-based reading instruction isn't engaging for students, especially for boys. Instead, it is something done to them. And given the importance of agency for talent development, this fact presents a major developmental roadblock."

A 2002 study by Michael Smith and Jeffery Wilhelm identified the expectations boys have of their teachers – an "implicit social contract" required for boys to trust that school work is worth engaging in. Boys want teachers who:

- Get to know them personally;
- Care about them as individuals;
- Pay attention to their interests;
- Help them learn and ensure that they actually do;
- Are personally passionate, committed, hardworking, and knowledgeable.

These qualities raise engagement and achievement for boys *and girls*.

But this is not enough, say Spitsberg and Plucker. Boys are so far behind in K-12 humanities achievement and the HEAL professions that we need "additional, bolder steps," including:

• *Redshirting boys* – Given most boys' well-documented physical and intellectual immaturity compared to girls as they enter school, having boys start kindergarten a year later can give them a leg up in reading achievement – and be advantageous for girls' learning experience as well. Of course this intervention, which is more common in affluent communities, depends on easy access to high-quality and affordable early childhood programs.

• *Ramping up efforts to recruit men into HEAL professions* – especially early-childhood education and ELA classrooms;

• *Investing in effective dropout-prevention programs* through early interventions and use of early-warning data;

• *Gender-sensitive curriculum and classrooms* – In the same way that school texts and images have been revised to encourage girls to see themselves in STEM fields, the authors suggest similar efforts to encourage boys to construct their sense of masculinity in ways that lead into HEAL fields.

• *Reporting results* – Gender differences in student outcomes should be included in publicly released data and school district reports, say Spitsberg and Plucker.

"Boys and the Humanities: Making the Twain Meet" by Tim Spitsberg and Jonathan Plucker in *Kappan*, April 2023 (Vol. 104, #7, pp. 12-17); the authors can be reached at tim_spitsberg1@baylor.edu and jplucker@jhu.edu.

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3. Making Sure Math Skills Hold Their Own in STEM Projects

In this article in *American Educator*, Douglas Clements and Julie Sarama (University of Denver) appreciate the way STEM curriculum units can integrate science, technology, engineering, and mathematics. But Clements and Sarama are concerned about an unintended consequence: in the lower grades, students' engagement in STEM activities and concepts can lead to insufficient focus on the "essential domain-specific content" of math.

The essence of math, they believe, is "logic, reasoning, and proof" – for example, a triangle is a triangle because it has three connected sides, whatever its shape – whereas validity in science, technology, and engineering comes from trying out ideas and theories in the real world – *We don't know if this design is the best; we need to test it*. Mathematics, say Clements and Sarama, "*is a core component of cognition*… High-quality math experiences always encourage students to answer questions such as 'How do you know?' 'What is your strategy?' and 'Can you prove that?' Students have to dig deeply, metacognitively (thinking about their own thinking), to answer such questions, building both language and executive function competencies."

Clements and Sarama give the example of a commonly used elementary school unit that has students planting seeds in a garden. The project incorporates a variety of disciplines but uses only low-level math counting skills that students already know, failing to challenge them to learn and apply higher-level skills and concepts. In the words of a Texas elementary instructional coach, in STEM projects like this, mathematics "is put in the passenger seat to lightly serve another subject, project, or task." This has downstream consequences, say Clement and Sarama: "Without developing competence and a productive disposition in math in the early grades, students are unlikely to enter STEM fields."

The solution, they say, is an *interdisciplinary* approach where "rich connections are made between domains, but each retains its core conceptual, procedural, and epistemological structures. That is, two or more domains are always – and *only* – integrated when that combination is both consistent and complementary with those structures for *each* domain." This might involve teaching a math skill first, then showing its connections to a STEM project. In the garden seed-planting activity, the teacher introduces geometry and measurement, moving students up a continuum of challenging and relevant skills and concepts.

Based on their work in elementary STEM curriculum projects, Clements and Sarama suggest the following guidelines:

- Maintain high expectations for what children can do in each domain.
- Ensure that students are learning appropriate content – challenging but achievable.

- Consider the role of different domains in a project – science, math, technology, engineering, literacy, music, and the arts.
- Incorporate investigations and explorations with real-world purposes similar to the problems addressed by scientists, engineers, and applied mathematicians.
- Focus on shared concepts and "big ideas."
- Look for all possible connections between domains without forcing them.

"When we do integrate," conclude Clements and Sarama, "make the integration explicit and respect what's unique about each discipline, especially how it determines the truth."

"Rethinking STEM in the Elementary Grades" by Douglas Clements and Julie Sarama in *American Educator*, Spring 2023 (Vol. 47, #1, pp. 16-21); the authors can be reached at douglas.clements@du.edu and julie.sarama@du.edu.

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4. Getting Students Thinking More Deeply About Technologies

"While adults often stereotype students as singularly obsessed with their smartphones and social media," say Daniel Krutka (University of North Texas/Denton), Jacob Pleasants (University of Oklahoma/Norman), and Philip Nichols (Baylor University) in this *Kappan* article, "we consistently have found that students want to engage in deep and reflective conversations about the complex relationships they have with ever-present technologies. These discussions aren't simply about technology, but about the type of world we want to live in. We should provide students tools to think about their tools."

Krutka, Pleasants, and Nichols suggest that when a technology topic comes up in classrooms, teachers should take the opportunity to introduce a "technoskeptical" perspective, asking questions like:

- Who benefits from and who is harmed by this particular technology?
- What resources does it need?
- What are the unintended or unexpected changes caused by the technology?
- What does society give up for the benefits of the technology?
- Why is it difficult to imagine our world without technology?

With this technoskeptical perspective, the authors developed an framework to think about technology in two dimensions. First, they propose these layers:

- *Technical* – How technologies are made, how they function, how they fit into the larger system of production, use, and maintenance, and their effect on human health and the environment.
- *Psychosocial* – How technologies affect the ways in which humans think and interact as individuals and communities – for example, the impact of social media on our concentration, relationships, and culture.
- *Political* – Who makes decisions about technologies, including legislators, companies, and individuals.

For each of these layers, the framework suggests analyzing technology in terms of:

- *Tools* that produce direct and predictable outcomes;

- *Systems* with complex and collateral effects;
- *Values* such as efficiency, freedom, power, democracy, and justice.

Krutka, Pleasants, and Nichols give three examples of using this framework to think about technology in ways that might not ordinarily be considered, leading to deeper and richer discussions:

• *Science: Water filter technology* – Surface-level questions: What kinds of matter need to be removed from water? What filter materials are most effective? Beneath-the-surface questions: Why do we need to filter water? How does access to clean water change the way we use water? Who is responsible for ensuring people have access to potable water?

• *Social studies: Transportation* – Surface-level questions: How did railroads result in new settlements? Why did the government support highway expansion? Deeper questions: Were railroads a tool of invasion of indigenous homelands? How can a city be designed for everyone?

• *English language arts: Search engines* – Surface-level questions: How have search engines changed the way we research? How do we use search engines to find information about a topic? Deeper questions: How do search engine algorithms shape what information we encounter? How might algorithmic bias in search engines reproduce social inequalities?

"Talking the Technology Talk" by Daniel Krutka, Jacob Pleasants, and Philip Nichols in *Kappan*, April 2023 (Vol. 104, #7, pp. 42-45); the authors can be reached at Dan.Krutka@unt.edu, jacob.pleasants@ou.edu, and Phil_Nichols@baylor.edu.

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5. The Impact of a Knowledge-Focused K-8 Curriculum

In this Annenberg/Brown University EdWorkingPaper, David Grissmer (University of Virginia) and eight colleagues report on their experimental study of student achievement in nine charter schools using the Core Knowledge curriculum compared to schools using a conventional curriculum. The researchers were able to juxtapose the charter school students' test scores in grade 3-6 math and reading and grade 5 science with the scores of comparable groups of students in traditional public schools – those students not admitted to these charter schools in a kindergarten lottery.

What did the study find? There were statistically significant gains in the Core Knowledge schools compared with schools that used a more-conventional approach to teaching reading, math, and science – and socioeconomic achievement gaps were eliminated.

This study sheds light, say the researchers, on a perennial question with reading achievement: what works best, a procedural approach – teaching reading skills – or a knowledge approach – building students' storehouse of general information? In the past, it's been difficult to study the impact of general knowledge because students in different schools are taught pretty much the same general information. But the charter schools in this study implemented the K-8 Core Knowledge curriculum in addition to teaching procedural reading skills, systematically inculcating general knowledge at each grade level.

The researchers note two interesting insights from the study. First, students in the Core Knowledge schools made the most significant gains in reading, not math. Grissmer et al. believe this is because a more-compact body of knowledge in mathematics is taught in most schools. Second, the charter school students' reading gains happened gradually over several years. This points to the challenge faced by a knowledge-based approach: building students' background knowledge is a gradual, year-by-year process, and only schools that methodically implement a knowledge-rich curriculum will see this kind of success.

The researchers list several characteristics of the Core Knowledge curriculum that account for these schools' success in gradually and significantly building students' reading achievement:

- Building on and enhancing students' existing knowledge about the world;
- Starting in kindergarten and adding new knowledge with each grade;
- Avoiding duplication from grade to grade;
- Building knowledge across the curriculum – in ELA, history, science, and the arts;
- Teaching the unique structure and modes of inquiry in each subject area;
- Using explicit instruction organized around conceptual maps or schema;
- Ascertaining and taking advantage of each students' interests;
- Reducing the cognitive load by integrating content across all subjects and grades.

"The evidence would suggest," conclude Grissmer et al., "that the level of General Knowledge may be a critical, largely unmeasured, cognitive characteristic that may help explain the factors underlying achievement for students from all income levels, as well as accounting for current achievement score gaps between advantaged and disadvantaged students. Moreover, this study suggests that the level of General Knowledge is malleable, and an intervention that increases General Knowledge may increase achievement for students from all family income groups with much larger effects that eliminate achievement gaps for disadvantaged students."

"A Kindergarten Lottery Evaluation of Core Knowledge Charter Schools: Should Building General Knowledge Have a Central Role in Educational and Social Science Research and Policy?" by David Grissmer, Richard Buddin, Mark Berends, Daniel Willingham, Jamie DeCoster, Chelsea Duran, Chris Hulleman, William Murrah, and Tanya Evans in an Annenberg/Brown University EdWorking Paper, April 2023 (pp. 1-76); Grissmer can be reached at dwg7u@virginia.edu.

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6. A Quest-Based Approach to Teaching Library Skills – and More

In this *Knowledge Quest* article, New Hampshire school librarians Etienne Vallée and Carrie Fair say they used to dread the "stale and boring" lesson on library orientation and catalog search they felt obligated to perform every September. They showed students how the library was organized, how to search the catalog for projects and pleasure reading, and how to check out books. "We didn't feel satisfied that our students had actually learned anything," say Vallée and Fair, "and we certainly didn't learn anything about them."

Two years ago they decided to try a quest-based approach with middle- and high-school students. Students were asked to provide book suggestions for members of a fictional royal family getting ready to travel to a palace in an area with no book stores, libraries, or access to shipping. Each person had specific reading preferences:

- Queen – reads anything
- King Consort – sports and adventures
- First child – horror and graphic novels
- Second child – fantasy and historical fiction
- Third child – romance and realistic fiction
- Fourth child – dystopia and comedies
- Fifth child – science fiction and paranormal
- Sixth child – a non-reader, doesn't know what he likes.

Students chose a character and a genre and used NoveList Plus (a site with readers' recommendations and reviews for librarians) and Goodreads (a site with crowdsourced reviews) to choose books they thought might interest their royal person (the librarians modeled how to fill out a customized Google Form and then circulated as students worked individually on their computers).

Many students weren't familiar with the websites, discovered books they wanted to read themselves, and were intrigued with how reviews confirmed or differed from their opinions of books they were familiar with. Searching the library's catalog, students identified a number of books that were not in the school's collection. Vallée and Fair gave students the option of completing a side quest: judging a book by its cover or finding the highest-rated book on Goodreads and deciding, based on its reviews, if it was appropriate for their character.

This engaging and popular activity had several payoffs: (a) It quickly and efficiently familiarized students with the library's catalog and the way books were organized; (b) students learned how to use NoveList and Goodreads to discover new books they wanted to read; (c) the librarians learned a lot about students' interests – including the surprising number interested in realistic fiction; and (d) students identified more than a hundred high-interest books that were not in the library collection – which Vallée and Fair immediately purchased and highlighted in subsequent lessons, much to students' delight.

After completing the quest activity with several classes, the librarians improved their illustrated Google Form (which they're willing to share – see e-mail addresses below). They also noted two changes they plan to make. First, not all classroom teachers engaged in the activity; in fact, say Vallée and Fair, half of them "promptly disappeared once we had taken charge of their students." In the future, the librarians will ask teachers to circulate as students engage in the quest and learn about their kids' reading interests.

Second, Vallée and Fair found that two class periods weren't enough for the activity and plan to spread it out over four classes to give students time to fully explore the websites and their own interests – and give their royal family members plenty of good reading for their remote vacation.

"Improved Catalog Search Skills Through Quest-Based Activity in the Library" by Etienne Vallée and Carrie Fair in *Knowledge Quest*, March/April 2023 (Vol. 51, #4, pp. 40-45); the authors can be reached at evallee@sau45.org and cfair@sau45.org.

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7. Award-Winning Children's Picture Books

In this feature in *Language Arts*, Kathryn Will and six colleagues share their committee's selection of Notable Children's Books for grades K-8 published for 2022, starting with picture books (additional lists will appear in the next two Memos):

- *A Day for Rememberin': Inspired by the True Events of the First Memorial Day* by Leah Henderson, illustrated by Floyd Cooper
- *Eyes That Kiss in the Corners* by Johanna Jo, illustrated by Dung Ho
- *Home Is in Between* by Mitali Perkins, illustrated by Lavanya Naidu
- *Kiyoshi's Walk* by Mark Karlins, illustrated by Nicole Wong
- *Milo Imagines the World* by Matt de la Peña, illustrated by Christian Robinson
- *My Two Border Towns* by David Bowles, illustrated by Erika Meza
- *Outside, Inside* by LeUyen Pham
- *Ten Beautiful Things* by Molly Beth Griffin, illustrated by Maribel Lechuga
- *When Langston Dances* by Kaija Langley, illustrated by Keith Mallett
- *Wishes* by Muon Thi Van, illustrated by Victo Ngai

"The 2022 Notable Children's Books in the English Language Arts" by Kathryn Will, Vera Ahiyya, Patrick Andrus, Dorian Harrison, Laretta Henderson, Janine Schall, and Fran Wilson in *Language Arts*, March 2023 (Vol. 100, #4, pp. 307-316)

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8. Short Items:

a. A Speeded-Up Trip Through the Panama Canal – This seven-minute transit through the Panama Canal by Steve Noble uses time-lapse photography to collapse what is usually an 8-12 hour trip.

"Panama Canal – Full Transit – Time Lapse" by Steve Noble on YouTube, February 28, 2016

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b. A Short Graphic History of the Suez Canal – This history of the canal dug from the Mediterranean Sea to the Red Sea, opened in 1869, packs in a lot of history and maps.

"This Little Waterway Generates an Astounding $7 Billion" by Sharp Side on YouTube

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If you have feedback or suggestions,
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About the Marshall Memo

Mission and focus:

This weekly memo is designed to keep principals, teachers, superintendents, and other educators very well-informed on current research and effective practices in K-12 education. Kim Marshall, drawing on 48 years' experience as a teacher, principal, central office administrator, writer, and consultant lightens the load of busy educators by serving as their "designated reader."

To produce the Marshall Memo, Kim subscribes to 60 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). Every week there's a podcast and HTMI version as well.

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Core list of publications covered

Those read this week are underlined.

All Things PLC
American Educational Research Journal
American Educator
American Journal of Education
American School Board Journal
AMLE Magazine
ASCA School Counselor
ASCD SmartBrief
Cult of Pedagogy
District Management Journal
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
English Journal
Exceptional Children
Harvard Business Review
Harvard Educational Review
Independent School
Journal of Adolescent and Adult Literacy
Journal of Education for Students Placed At Risk (JESPAR)
Kappa Delta Pi Record
Kappan (Phi Delta Kappan)
Knowledge Quest
Language Arts
Learning for Justice (formerly Teaching Tolerance)
Literacy Today (formerly Reading Today)
Mathematics Teacher: Learning & Teaching PK-12
Middle School Journal
Peabody Journal of Education
Principal
Principal Leadership
Psychology Today
Reading Research Quarterly
Rethinking Schools
Review of Educational Research
School Administrator
School Library Journal
Social Education
Social Studies and the Young Learner
Teachers College Record
Teaching Exceptional Children
The Atlantic
The Chronicle of Higher Education
The Journal of the Learning Sciences
The Language Educator
The Learning Professional (formerly Journal of Staff Development)
The New York Times
The New Yorker
The Reading Teacher
Theory Into Practice
Time
Urban Education