Marshall Memo 812

A Weekly Round-up of Important Ideas and Research in K-12 Education
November 18, 2019

In This Issue:

Quotes of the Week

"Counterintuitive as it may seem, children do not become independent problem solvers by independently solving problems."
Clare Sealy (see item #1)

"When teachers plan lessons, we need to be mindful of what children will be thinking about during each part of the lesson, rather than what they will be feeling or doing."
Clare Sealy (*ibid.*)

"When teachers judge that the demands of their job outweigh their resources, they experience stress. But that's only part of the story – equally important is how they *cope* with the stress."
Christopher Jay McCarthy (see item #3)

"Don't expect new parents to come to school ready to jump on a train that's already moving. They want you to stop the train and ask them if they'd like to add a new car."
Dillon Kalkhurst (see item #4)

"To execute strategy, leaders must set ambitious targets, translate them into specific metrics and milestones, make them transparent throughout the organization, and discuss progress frequently."
Donald Sull and Charles Sull in "With Goals, FAST Beats SMART" in *MIT Sloan Management Review*, October 4, 2019, https://bit.ly/33V7ryh

"Four things you can't control in an outdoor athletic event: field conditions, the referee, the weather, and the attitude of the other team."
Mike McCallister (personal communication, July 12, 2006)

1. Understanding Two Very Different Kinds of Memory

In this *Education Next* article, British educator Clare Sealy says it's commonly believed that to make a lesson stick in students' memories, teachers need to make it spectacular, exciting, and unusual. "Memorable events, in this view, should form the template for creating memorable lessons," says Sealy – but she believes that's a myth, stemming from conflating two ways in which we remember things:

• *Episodic memory* – These are memories of events each day, and they are formed automatically, with no special effort on our part: what we had for lunch, a joke someone told this afternoon. The downside of episodic memories is that they fade quickly; we won't remember what we had for lunch a month ago unless something very unusual happened at the meal, and that joke – what *was* the punch line?

This means that if we as teachers put our faith in episodic memory, we'll be constantly disappointed when we ask our students what they learned the day before. They'll "remember all sorts of things," says Sealy: "that you used Post-it Notes, that Mollie was late, that you spilt your coffee, that Liam made a hilarious joke." In other words, students remember the "contextual tags but not the actual learning. Episodic memory is so tied up with context it is no good for remembering things once that context is no longer present." This is especially true when students move to a different classroom, grade, or school. It's not that last year's teachers are lying when they say their students mastered fractions; it's that students' memories were largely episodic, and now the context is different.

• *Semantic memory* – This kind involves much more work – taking notes, studying, and encoding information – but the advantage is that such memories last longer. "Semantic memories have been liberated from the emotional and spatial/temporal context in which they were first acquired," says Sealy. "Once a concept has been stored in semantic memory, it is more flexible and transferable between different contexts. Semantic memory is central, therefore, to long-term learning, learning that can be put to use in novel contexts to solve unexpected problems. Semantic memory is what we use when we are problem-solving or being creative."

Episodic memories are the stuff of life in schools, especially the way students are treated and how adults treat each other. And broadening experiences outside of school (field trips to museums, theaters, historic sites, forests, mountains) are especially important for children whose families are not able to provide them. But the hum-drum semantic memories are the most important takeaways from schooling.

Cognitive psychologist Daniel Willingham says that "memory is the residue of thought." This means, says Sealy, that "teachers have to make sure that lessons give students the opportunity to think about the things we actually want them to remember, rather than some extraneous other thing. We need them to think about the message of the lesson, rather than the medium we use to teach it." And this is why "fun" lessons may be getting in the way of long-term learning – the medium may become more prominent than the message. "When teachers plan lessons," she continues, "we need to be mindful of what children will be thinking about during each part of the lesson, rather than what they will be feeling or doing. Have we planned activities that will ensure children think hard about the right things?"

British school inspectors noticed this phenomenon as they watched elementary students doing science experiments. Checking in with students, observers found that kids could explain what they were doing but not the underlying scientific concepts; there wasn't enough cognitive bandwidth for that. The logical conclusion is that students should be taught the concepts before diving into hands-on experiments. "Once the scientific concepts are secure," says Sealy, "children are much more able to really 'think like scientists,' with the added benefit that the practical activity then consolidates understanding of the previous learning."

The same is true of having students research information on their own: the cognitive work of looking for information and making judgments about its relevance prevents them from grasping and remembering content.

And this insight also applies to classroom mathematical discovery and creative problem-solving. Sealy believes these activities "are completely inappropriate for the initial stage of learning, when children are encountering a concept for the first time. If we want children to become independent problem-solvers, we need to teach them carefully and explicitly so that semantic memory can begin to form. Counterintuitive as it may seem, children do not become independent problem solvers by independently solving problems. This is because when children are trying to solve problems before they know the necessary math to do so, they will be expending considerable mental energy tracking what they are meant to be solving against what they have found out so far, so much so that even when they are successful, they will have forgotten what they actually did en route to finally finding the answer!... Frustratingly, current *performance* is a terrible guide to knowing whether or not *learning* has actually happened or not."

Explicit, step-by-step instruction is essential, she says, followed by retrieval and application at intervals after the initial lesson, with fewer cues and prompts. Only then will students begin to cement knowledge and skills in long-term memory.

It's common for people to say they don't remember anything they learned in school – but this simply means they don't have an episodic memory of specific lessons. That's not a bad thing, says Sealy, because if we remembered everything, our brains would explode. But if we were taught well, we know lots of deeper stuff, says Sealy: "triangles and oxygen, Anne Boleyn and paragraphs, square numbers and ox bow lakes, color-mixing and Lady Macbeth… That's the beauty of semantic memory. It isn't, and doesn't need to be, tied up with episodic

clutter." Those deeper memories, formed by good teaching, serve as a foundation for further learning and all sorts of creative endeavors – even if we don't remember learning them.

Well-schooled people are "knowledge-privileged," says Sealy: "You have been given opportunities to think hard about stuff you didn't know and therefore have a vast repository of semantic memory on hand, readily available whenever you want it. Yet it is all too easy to overlook this privilege and vastly underestimate how much we do in fact know and how much our schooling benefited us. Because we don't remember learning what we know, we don't remember the effort that went into teaching it."

Sealy's concern is that schools that focus on immersing students in "fun" and "involving" lessons may be short-changing this vital area, leaving kids "with an impoverished ability to think or be truly creative… Before we decide to impose our own agendas onto children's education," she concludes, "we need to check our knowledge privilege before making decisions that will deprive children of their fair share of the rich cultural inheritance our world affords and to which they are entitled."

"The Best Way to Help Children Remember Things? Not 'Memorable Experiences'" by Clare Sealy in *Education Next*, September 26, 2019, https://bit.ly/2XsBfjy

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2. Pushing Back on Lesson Plan Micromanagement

(Originally titled "Free the Lesson Plans!")

In this *Educational Leadership* article, teacher/author Matthew Kay says that requiring teachers to submit 1-2 weeks of lesson plans in advance undermines effective instruction. For one thing, it encourages lying and cynicism. Teachers know that most administrators can't give meaningful feedback and will just check for compliance, which incentivizes busywork: resubmitting last year's lesson plans with new dates, handing in the same plan for different classes, or copying and pasting material from the Internet.

But aren't administrators right to require advance planning? Not if it locks teachers into a rigid sequence, says Kay, because "no student-centered teacher knows on Sunday night where their students will be in their learning *next* Thursday." Good teachers constantly check for understanding and adapt when they see misconceptions, gaps in understanding, and teachable moments. Fearing that an administrator may visit, clipboard in hand, teachers might not provide "space for students to dig into topics or projects that require continuity of thought and depth of understanding…"

A better approach, Kay believes, is asking teachers to submit plans for 3-5-week curriculum units following the Wiggins/McTighe backwards-planning template: standards, enduring understandings, facts and skills, likely misconceptions, essential questions, transfer, assessments, and the lesson progression. At Kay's school, teachers' unit plans must also include how the unit engages their school's core values. Unit plans have several advantages:

- They allow for greater day-by-day flexibility, while keeping the end in sight.

- Administrators can provide meaningful feedback when they're looking at compact unit plans covering a month or more of instruction. "With the larger scope," he says, "they can critique a teacher's strategic planning, not just any day's tactical execution."
- Unit plans can be easily shared with colleagues, making for good discussion and PD.

"Free the Lesson Plans!" by Matthew Kay in *Educational Leadership*, November 2019 (Vol. 77, #3, pp. 90-91), https://bit.ly/2NYEPyI

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3. Addressing Teacher Stress and Burnout

In this *Phi Delta Kappan* article, Christopher Jay McCarthy (University of Texas/ Austin) says the conventional explanation for teacher burnout has been dissatisfaction with school administrators and colleagues, lack of autonomy, insufficient resources, and stressful interactions with adults and students. But these can't be the whole truth since only about 25 percent of teachers report dissatisfaction with working conditions. A more sophisticated explanation is that job dissatisfaction is a mismatch between the pressures teachers feel and the resources available to meet those demands. "This may, in part, explain why some teachers are more vulnerable to stress in their classroom," says McCarthy, "even compared to neighboring teachers working in the same school with the same types of students… Teachers who *chronically* find themselves on the losing end of the demand/resource equation are the most vulnerable to stress and most at risk for lowered job satisfaction, greater burnout, and lowered occupational commitment."

Over the last decade, McCarthy has worked with colleagues to develop the Classroom Appraisal of Demands and Resources tool. Teachers rate 35 factors that place demands on teachers, including student behavior, time pressures, testing, shortages of instructional supplies, and administrators' behaviors, on a 1-to-5 scale (not at all demanding to extremely demanding), then 30 resources that might help deal with those demands (from very unhelpful to very helpful), including instructional resources, administrators, school counselors and psychologists, teaching aides, parent volunteers, and mentors. Drawing on data from nearly 1,000 teachers who have taken the assessment, the researchers created three groups:

- Resourced teachers – resources exceed classroom demands;
- Balanced teachers – resources are equal to demands;
- Demanded teachers – demands exceed resources.

"When teachers judge that the demands of their job outweigh their resources," says McCarthy, "they experience stress. But that's only part of the story – equally important is how they *cope* with the stress."

For that third category of teachers (20-25 percent of the workforce), there are two approaches: *problem*-focused coping (e.g., using an effective classroom management technique or asking an administrator to intervene with a student's parent) and *emotion*-focused coping (taking a few deep breaths before calling an upset parent or attending a yoga class to recharge

after a long day of staff meetings). These are helpful, but what can school leaders do to prevent stressful conditions from taking their toll?

• *Identify teachers who are most vulnerable*. This could be done by regular check-in meetings and/or surveys of the entire staff (e.g., the Classroom Appraisal of Demands and Resources, the Perceived Stress measure, or the Maslach Burnout Inventory).

• *Deal proactively with stress-producing factors*. This might include reducing the demand level for all teachers; scheduling and facilitating teacher teamwork; tailoring class assignments, the number of preps, and the percent of challenging students to teachers' capabilities (e.g., not assigning new teachers, however eager, to the most difficult classes); assigning mentors; scheduling release time for professional learning; providing schoolwide support for meditation and mindfulness; and increasing teacher autonomy. "Allowing teachers to manage day-to-day functioning of their classrooms and perhaps even participate in decision making for their school not only reduces stress," says McCarthy; "it also comes at little financial cost. Moreover, under such conditions, teachers can come to see administrators as allies rather than bosses."

"Teacher Stress: Balancing Demands and Resources" by Christopher Jay McCarthy in *Phi Delta Kappan*, November 2019 (Vol. 101, #3, pp. 8-14), https://bit.ly/3497yXj; McCarthy can be reached at cjmccarthy@austin.utexas.edu.

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4. Schools Communicating with Four Generations of Caregivers

In this article in *Principal*, Dillon Kalkhurst (Center for Intergenerational Engagement) says that a century ago, when Americans had shorter lifespans and work lives, students' caregivers were mostly from a narrow age demographic. Nowadays, schools need to know how to communicate with as many as four generations of family members and colleagues, each with its own characteristics and preferences. "Communication starts on Day One by asking parents how they prefer to receive information," says Kalkhurst. "You'll be surprised by the variety of responses." Some notes:

• *Generation Z: iGen* (born 1997-2012) – A small but growing number of pre-K parents are entering the workforce. They are savvy consumers, believe in social responsibility, and have short attention spans. They prefer using Snapchat, Instagram, YouTube, FaceTime, and texts, rather than phone calls; only about 14 percent use Facebook.

• *Generation Y: Millennials* (born 1981-1996) – These make up the majority of K-8 parents. Many were over-parented and believe they can change the world. They're the heaviest users of texts and Facebook and require constant feedback and evaluation, so providing "sharable" moments helps promote family engagement and a positive culture.

• *Generation X: Forgotten Generation* (born 1965-1980) – They are most often the parents of high-school and college students. Many were latchkey kids, don't respond well to micromanagement, and focus on results, not policies. Their preference tends to be e-mail, then texting and visiting school websites.

• *Baby Boomer grandparents* (born 1946-1964) – Due to life circumstances, they may be primary caretakers. They want respect from younger generations. Their preference is often phone calls and face-to-face conversations.

The Boomer generation is more likely to believe teachers and principals are always right. Most of today's parents "will question everything and have hundreds of parenting and education 'experts' available at the swipe of a finger," says Kalkhurst. "If you don't answer their questions, they will find the answer somewhere else… Don't expect new parents to come to school ready to jump on a train that's already moving. They want you to stop the train and ask them if they'd like to add a new car… Engage them early and often." PTA membership has declined, especially dues-paying memberships; parents believe they can get the same benefits online.

"Engagement Across the Generations" by Dillon Kalkhurst in *Principal*, November/December 2019 (Vol. 99, #2, pp. 26-27), https://bit.ly/35dZIeO

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5. A PD Program for Principals Falls Short

In this study for the U.S. Department of Education's Institute of Education Sciences, Mariesa Hermann and eight Mathematica colleagues report on a PD program designed to improve elementary principals' instructional leadership, especially classroom observations and feedback to teachers. Over a two-year period, 100 principals in high-need schools in eight districts received 188 hours of professional development from the University of Washington's Center for Educational Leadership (CEL). The program emphasized frequent classroom observations, documenting teacher and student actions using a rubric, and giving teachers feedback based on the evidence that was gathered.

The CEL program's theory of action was that by improving principals' instructional leadership skills, teaching would improve, which would result in higher student achievement. Here's how the intervention was delivered (the training was in addition to PD that principals received from their districts):

- 28 hours of in-person sessions over the summer introducing principals to CEL's approach to instructional leadership;
- 54 hours of in-person training during the first school year giving principals hands-on experience observing teachers and discussing approaches to providing feedback;
- 6 hours of virtual community sessions for principals to meet each quarter with other principals and CEL coaches to discuss issues they were facing in their schools;
- 100 hours of individualized coaching (in-person and virtual) in which principals worked with CEL coaches to identify focus areas, set goals, implement strategies, and analyze effects.

CEL coordinated its training with each district's teacher evaluation program. The researchers did not directly observe principals' feedback to teachers or the quality of teachers' instruction; instead, they relied on teacher and principal surveys.

The results of this two-year program were discouraging. The training didn't affect the

amount of time principals spent on instructional leadership, or the number of classroom observations they conducted. Comparing intervention and control-group schools, the researchers found virtually no difference in teachers' perceptions of the quantity and quality of principals' classroom visits and the usefulness of the feedback they received. On average, student ELA and math test scores were virtually identical in program and control-group schools (there were negative results in some schools, positive results in others).

"Future studies," the researchers conclude, "could investigate the effectiveness of different professional development activities for improving principals' feedback to teachers."

[There are several possible explanations for why this very time-intensive program had zero impact: (a) The training itself could have been ineffective – too theoretical or based on the wrong research about instructional leadership; (b) the massive amount of training time, on top of districts' regular PD and principals' day-to-day responsibilities, might have limited the amount of time for classroom visits and teacher feedback; (c) CEL's rubric-scoring model of classroom observation and teacher feedback might have been bureaucratic and ineffective; (d) principals might have been hampered by their districts' ineffective teacher-evaluation policies; and finally, (e) because CEL coaches were not close enough to the action (i.e., classroom visits and debriefs with teachers), they were hampered in their ability to guide principals to effective practices. K.M.]

"The Effects of a Principal Professional Development Program Focused on Instructional Leadership" by Mariesa Hermann, Melissa Clark, Susanne James-Burdumy, Christina Tuttle, Tim Kautz, Virginia Knechtel, Dallas Dotter, Claire Smither Wulsin, and John Deke, Institute of Education Sciences, U.S. Department of Education, October 2019, https://bit.ly/2CVJ2g2; the authors can be reached at communications@mathematica-mpr.com.

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6. Using Barbie, Batman, and Bratz Dolls to Teach Proportional Reasoning

In this *Rethinking Schools* article, Flannery Denny describes spending several years trying to figure out how to teach proportional reasoning to her New York City middle-school students. She believes this is one of the most important math concepts for the age group, with all kinds of real-life applications: cooks scaling recipes to feed different numbers of people; farmers planning seed orders for their fields; and anesthesiologists determining dosages for different patients. Denny liked the idea of using Barbie dolls, but worried that girls might compare the doll's "idealized" proportions to their own, and boys might fixate on certain features.

Then in a workshop with teachers from other schools, Denny hit upon the idea of using action figures. She reached out to her school community and gathered a diverse collection including Buzz Lightyear, Bratz dolls, G.I. Joe, Batman, Robin, Ant-Man, Aquaman, Ariel, and, yes, Barbie and Ken. Over three days, students worked in groups of three measuring foot size, height, waist, and shoulder width and using charts of human measurements to extrapolate what the action figures would be like if they were full size. Three question for students working with Barbie:

- Size 8 is one of the top-selling women's shoe sizes. If Barbie's feet were that big, how tall would she be?
- What size shoe would Barbie wear if she were 5'4" tall (the average height for women in the U.S.)?
- What would be the circumference of Barbie's waist?

Students were able to calculate that given the size of the doll's feet, a Barbie with human size 8 feet would be 11 feet 4 inches tall!

Students answered similar questions for other action figures, read and discussed articles about dolls and body image that Denny posted on the class homework website, and on the third day completed life-size posters for a hallway display with some eye-opening discoveries on how disproportionate these iconic bodies are – including 33-inch-wide Batman shoulders and a 19-inch Barbie waist circumference.

"'Do You Have Batman Shoulders?'" by Flannery Denny in *Rethinking Schools*, Fall 2019 (Vol. 34, #1, pp. 22-27), no e-link available; Denny is at flannery.denny@gmail.com.

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7. Recommended Young Adult Books with Latinx Authors and Topics

This *School Library Journal* feature by Katy Hershberger highlights high-quality young adult books for Hispanic Heritage Month – and the whole year. For full reviews of each book, click the link below.

- *With the Fire on High* by Elizabeth Acevedo (HarperCollins/Harper, 2019), grade 9 and up
- *Five Midnights* by Ann Dávila Cardinal (Tor Teen, 2019), grade 9 and up
- *Becoming Beatriz* by Tami Charles (Charlesbridge Teen, 2019), grade 8 and up
- *Color Me In* by Natasha Díaz (Delacorte, 2019), grade 7 and up
- *They Could Have Named Her Anything* by Stephanie Jimenez (Little A., 2019)
- *All of Us with Wings* by Michelle Ruiz Keil (Soho Teen, 2019), grade 10 and up
- *The Liars of Mariposa Island* by Jennifer Mathieu (Roaring Brook, 2019), grade 9 and up
- *We Set the Dark on Fire* by Tehlor Kay Mejia (HarperCollins/Katherine Tegen Books, 2019), grade 8 and up
- *Barely Missing Everything* by Matt Mendez (Atheneum/Caitlyn Dlouhy Books, 2019), grade 9 and up
- *Don't Date Rosa Santos* by Nina Moreno (Disney Pr., 2019), grade 9 and up
- *Nocturna* by Maya Motayne (HarperCollins/Balzer + Bray, 2019), grade 8 and up
- *The Library of Lost Things* by Laura Taylor Namey (Inkyard, 2019), grade 9 and up
- *Juliet Takes a Breath* by Gabby Rivera (Dial, 2019), grade 9 and up
- *Dealing in Dreams* by Lilliam Rivera (S. & S., 2019), grade 7 and up
- *The Truth Is* by NoNieqa Ramos (Carolrhoda Lab, 2019), grade 7 and up
- *The Grief Keeper* by Alexandra Villasante (Putnam, 2019), grade 9 and up

"Literatura Latinx: Books for All Ages in Honor of Hispanic Heritage Month" by Katy Hershberger in *School Library Journal*, October 2019 (Vol. 65, #9, pp. 50-51), https://bit.ly/2WFZIkK

8. Does Full-Day Preschool Make a Difference?

In this article in *Educational Evaluation and Policy Analysis*, Allison Atteberry (University of Colorado/Boulder) and Daphna Bassok and Vivian Wong (University of Virginia) report on their study comparing a full-day/full-week prekindergarten with a half-day program. The researchers found that students in the full-day preschool outperformed their half-day peers on receptive vocabulary and teacher-reported measures of cognition, literacy, math, and physical and socioemotional development.

"The Effects of Full-Day Prekindergarten: Experimental Evidence of Impacts on Children's School Readiness" by Allison Atteberry, Daphna Bassok, and Vivian Wong in *Educational Evaluation and Policy Analysis*, December 2019 (Vol. 41, #4, pp. 537-562), https://bit.ly/2XuSxMW; Atteberry can be reached at Allison.Atteberry@colorado.edu.

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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 50 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 HTML 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
District Management Journal
Ed. Magazine
Education Digest
Education Next
Education Update
Education Week
Educational Evaluation and Policy Analysis
Educational Horizons
Educational Leadership
Educational Researcher
Edutopia
Elementary School Journal
English Journal
Essential Teacher
Exceptional Children
Go Teach
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
Knowledge Quest
Language Arts
Literacy Today (formerly Reading Today)
Mathematics Teacher
Middle School Journal
Peabody Journal of Education
Phi Delta Kappan
Principal
Principal Leadership
Reading Research Quarterly
Responsive Classroom Newsletter
Rethinking Schools
Review of Educational Research
School Administrator
School Library Journal
Social Education
Social Studies and the Young Learner
Teachers College Record
Teaching Children Mathematics
Teaching Exceptional Children
The Atlantic
The Chronicle of Higher Education
The Education Gadfly
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 Magazine