Marshall Memo 666

A Weekly Round-up of Important Ideas and Research in K-12 Education
December 19, 2016

In This Issue:

Quotes of the Week

"When it comes to engaged time in school, the kids who need the most clearly get the least."
James Lytle (see item #2)

"Teachers deserve a workday and a work year that has instruction at its core but builds in time for planning, personal learning, and collaboration."
Joan Richardson in "Time to Learn, Time to Teach" in *Phi Delta Kappan*, December 2016/January 2017 (Vol. 88, #4, p. 4), http://www.kappanonline.org/time-to-learn

"We're not even close to preparing citizens who can continually evaluate online information to make informed decisions about their lives."
Donald Leu, quoted in "Media Literacy vs. Bogus News" by Benjamin Herold in *Education Week*, December 14, 2016 (Vol. 36, #15, p. 1, 12), www.edweek.org

"When teachers help too much, they reinforce the idea that it's about getting it right and not about the struggle for learning."
Robyn Jackson (quoted in item #6)

"For a lot of kids, the classroom is a social minefield. When kids are entering middle and high school, the idea of what it means to be cool or popular is changing… [P]utting forth effort is a really vulnerable thing."
Sarah Kiefer (quoted in the full article summarized in item #6)

"The closer a school's start time comes to enabling eight or more hours of sleep each school night, the greater the reduction in risky teen behaviors."
Kyla Wahlstrom (see item #4)

1. The Origins of Implicit Bias – and How It Can Be Overcome

In this *New York Times* article, Daniel Yudkin and Jay Van Bavel (New York University) note that "implicit bias" was a hot topic in the U.S. presidential campaign. In one of the debates, Hillary Clinton said it was a problem for everyone, not just police officers. Mike Pence responded that this was a smear, suggesting that all Americans are racists. But recent research indicates that the presence of unconscious biases doesn't mean someone is bigoted. Rather, say Yudkin and Van Bavel, implicit bias "is grounded in a basic human tendency to divide the social world into groups… to think in terms of 'us versus them'… This doesn't make the effects of implicit bias any less worrisome but it does mean people should be less defensive about it."

In one experiment, volunteers played a game with monetary stakes and saw a player stealing money from another participant. Those who witnessed the theft were given the opportunity to punish the perpetrator by taking some or all of his or her money and removing it from the game. The researchers found that if people believed the thief was a fan of their football team, they confiscated less money than if they believed the thief supported a rival team. The same was true if they believed the thief was a citizen of their own country versus being a foreigner.

Interestingly, behavior that was biased in one direction or the other occurred only if people had to make their decision quickly – in a few seconds or less – or if they were distracted by another cognitively demanding task – for example, being asked to retain a string of seven letters and numbers in memory. If, on the other hand, they were given time to reflect on their decision – to engage in rational deliberation – they showed little or no bias toward those who favored a rival football team or were citizens of a foreign country.

Why do humans have an instinctive, gut-level bias toward their in-group and against a perceived out-group? "*Homo sapiens* spent thousands of years in close-knit communities competing for scarce resources on the African savanna," say Yudkin and Van Bavel. "Members of the in-group were presumably sources of help, comfort, and cooperation; members of opposing groups, by contrast, were sources of threat and violence. As a result, the tendency to instinctively treat in-group members with care and foreigners with caution may be etched into our DNA." This can carry over to racial groups, since people often live with others of their own race and form some degree of group identity. This tendency is certainly heightened if there's racial stereotyping and institutional discrimination going on.

However, conclude Yudkin and Van Bavel, "We need not resign ourselves to a future of tribalism. On the contrary, our research suggests that people have the capacity to override their worst instincts – if they are able to reflect on their decision-making as opposed to acting on their first impulse… Acknowledging the truth about ourselves – that we see and think about the world through the lens of group affiliations – is the first step to making things better."

"The Roots of Implicit Bias" by Daniel Yudkin and Jay Van Bavel in *The New York Times*, December 11, 2016, http://nyti.ms/2hksUMd

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2. How the Racial and Economic Achievement Gap Widens

"When it comes to engaged time in school, the kids who need the most clearly get the least," says James Lytle (University of Pennsylvania) in this *Kappan* article. He compares the amount of time that students in four types of high schools spend on school-related activities:

• Urban schools – 24 hours a week; this is based on school attendance ranging from 70-75 percent, homework often done during the six-hour school day, and few organized after-school activities, if any. "City kids consider time outside of school their time," says Lytle, "whether it's for jobs, family responsibilities, or just hanging out."

• Suburban schools – 55 hours a week, based on strong attendance, a six-to-seven-hour school day, one or two hours of homework each night, and an additional 10-20 hours a week for students involved in sports or other extracurricular activities.

• Private day schools – 70 hours a week, based on very few absences, a nine-hour school day, two or three hours of homework a day, and required after-school and weekend activities.

• Boarding schools – 168 hours a week, based on a long instructional day, rare absences, required extracurricular activities, faculty members often eating with students, and supervised study in the evening and on weekends. "Students' lives are controlled all day, every day," says Lytle.

In addition to these extraordinary inequities in hours, many economically advantaged students benefit from summer camps, traveling sports teams, music lessons, tutoring, SAT prep, e-learning through more-robust Internet connections, and adult relationships. "Suburban high schools, independent schools, and boarding schools are organized to increase the likelihood that students will connect with concerned adults who become their mentors, coaches, and advocates," says Lytle. "In the absence of such connections, the motivator for urban high-school students may simply be the threat of failing high-stakes exit tests."

And on top of all this, students are essentially being tracked for workday expectations in different occupations. For clerks at Wal-Mart or bus drivers, anything above 35-40 hours a week is overtime, while beginning lawyers, bankers, and doctors may need to put in a 90-hour work week. Most students graduating from independent schools can handle the latter, but it would be extremely challenging for many urban students, for whom even the lower time

demands of college may be a stretch. "Unknowingly," says Lytle, "they've been prepared for the hourly workforce."

What will it take to level the playing field? Higher standards and expectations, enriched curriculums and assessments, after-school programs and tutoring, summer enrichment and web-based supplementary courses – all these are a start. But, says Lytle, "addressing the achievement gap requires time before all things – and for most urban high-school students, the time isn't there."

"Equity and School Time" by James Lytle in *Phi Delta Kappan*, December 2016/January 2017 (Vol. 98, #4, p. 80), http://journals.sagepub.com/doi/full/10.1177/0031721716681787

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3. The Inhibiting Cost of After- School Sports, Art, and Club Activities

This *Kappan* report summarizes the findings of a National Poll on Children's Health, which found that one in four students from lower-income families did not participate in any school sports, arts, or club activities, with cost being a major factor. Here are some total costs, including fees, equipment, travel, private lessons, and special events, according to a C.S. Mott Children's Hospital study (October 17, 2016, http://bit.ly/Mottsportspoll):

- Average per sport – $302
- Arts activities – $218
- Clubs – $124

Ten percent of low-income students received a waiver for activity fees; 60 percent of students in arts and club activities pay nothing, while only 30 percent pay nothing for sports.

"Fees Go Up, Participation Goes Down" in *Phi Delta Kappan*, December 2016/January 2017 (Vol. 98, #4, p. 6)

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4. A Major Study on Later High-School Start Times

"The body of evidence concerning the academic benefits of a later start time for high-school students is compelling," says Kyla Wahlstrom (University of Minnesota/Minneapolis) in this *Kappan* article. "Also, the medical research into the functioning of the brain in memory, learning, and cognition is robust, while the link between sleep and mental health is unequivocal." Wahlstrom, who was skeptical when she got a call in 1996 from a Minnesota school about the possible benefits of later start times, is now a true believer, and major medical groups are also on board: the American Academy of Pediatrics (http://bit.ly/APsleep) and the American Medical Association (http://bit.ly/AMAsleep) now support moving high-school opening times to 8:30 or later, based on what's really happening to teens – the two-hour shift in biological sleep-wake cycles that occurs at the start of puberty.

But how has this idea worked out in the real world? Wahlstrom reports on a major study on the impact of later high-school opening times in eight high schools in Minnesota, Colorado, and Wyoming. Researchers surveyed more than 9,000 students on their sleep habits,

mood, study habits, substance abuse, and co-curricular activities and analyzed grades, attendance, tardiness, and standardized test results. The high schools had a range of students of color, free-and-reduced-price meal percentages, and graduation rates. Here are the major findings:

• *Academics* – There were significant decreases in student absences and tardiness in all grades that shifted to the latest opening times (8:35 – 8:55 a.m.). There were statistically significant increases in student grade point averages in one or more English, math, social studies, and science classes that met first period in schools that started from 8:00 to 8:35 a.m. In a Wyoming school that opened at 8:55, there were significant grade increases in all first-period core courses for all semesters in all grades.

• *Health* – "The closer a school's start time comes to enabling eight or more hours of sleep each school night, the greater the reduction in risky teen behaviors," says Wahlstrom. Here are the findings on the percent of students getting eight hours of sleep:

- 8:00 a.m. start time – 49.7 percent
- 8:35 a.m. start time – 60 percent
- 8:55 a.m. start time – 66.2 percent

Eight or more hours of sleep appears to be the tipping point for reducing cigarette, alcohol, and marijuana use, which declined by 8-14 percent when teens slept that much; depression and sexual activity declined 9-11 percent for those students.

• *Car accidents* – After the high schools changed to later start times, car crashes in the districts involving teens decreased by 13 percent. The greatest reduction in the first year was in the Wyoming school that shifted its opening time to 8:55 a.m.: accidents dropped by 70 percent.

• *Complicating factors* – Wahlstrom says that "a later start time isn't in itself a panacea for reducing sleep deprivation in teenagers." Students who participate in after-school activities or jobs are significantly more likely to get insufficient sleep, and students who wake up often during the night to get on social media (87.6 percent of students had their cell phone in their bedroom) are also significantly less likely to get enough sleep.

Based on the study's findings, Wahlstrom has the following recommendations for schools and districts considering a change in opening times:

- *Go for the latest start time*. Benefits are proportional to the amount of sleep added. Modest changes – for example, from 7:25 to 7:55 – will have only modest benefits while causing almost the same amount of disruption.
- *Address the real concerns*. Issues that need to be addressed include athletic schedules, bus schedules, child care, parents' work schedules, and rush-hour traffic.
- *Some issues aren't really a problem*. The experience of these districts is that moving to a later start time didn't affect sports teams' win/loss record, teens staying up even later at night, student participation in after-school activities, students' punctuality for after-school jobs, or transportation costs.
- *Deal creatively with transportation shifts*. One solution is flipping high-school and elementary school bus schedules.

- *Educate parents* – Many need information on what constitutes good sleep hygiene for their teenagers, including the importance of removing electronics from their bedrooms at bedtime.
- *Involve stakeholders*. Districts that have successfully shifted to later start times have reached out to pediatricians, parks and recreation leaders, and public safety officials as well as family members.

"It's taken 20 years for schools across the United States to fully engage in the movement to change high-school start times," concludes Wahlstrom. "Education decision-makers have begun to realize that teens aren't lazy and that they are, instead, in a unique time in their development where they need substantial amounts of sleep… Teens face an incredibly challenging world. Together, school leaders and parents have the responsibility to create the best possible conditions for them in which to grow and thrive. Implementing later high-school start times is a significant change that positively affects their health, safety and learning. If we have that will, we can find the way."

From the National Sleep Foundation, here are suggested bedtimes for teens age 14-17 based on 9 hours of sleep:

- Wake-up time 4:30 a.m. – Bedtime 7:30 p.m.
- Wake-up time 4:45 a.m. – Bedtime 7:45 p.m.
- Wake-up time 5:00 a.m. – Bedtime 8:00 p.m.
- Wake-up time 5:15 a.m. – Bedtime 8:15 p.m.
- Wake-up time 5:30 a.m. – Bedtime 8:30 p.m.
- Wake-up time 5:45 a.m. – Bedtime 8:45 p.m.
- Wake-up time 6:00 a.m. – Bedtime 9:00 p.m.
- Wake-up time 6:15 a.m. – Bedtime 9:15 p.m.
- Wake-up time 6:30 a.m. – Bedtime 9:30 p.m.
- Wake-up time 6:45 a.m. – Bedtime 9:45 p.m.

"Later Start Time for Teens Improves Grades, Mood, and Safety" by Kyla Wahlstrom in *Phi Delta Kappan*, December 2016/January 2017 (Vol. 88, #4, p. 8-14), http://www.kappanonline.org/later-start-time-for-teens; Wahlstrom can be reached at wahls001@umn.edu. For data on later start times, see www.startschoollater.net.

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5. Teaching Primary-Grade Students to Be Flexible with Subtraction

In this article in *Teaching Children Mathematics*, Ian Whitacre, Robert Schoen, Zachary Champagne (Florida State University) and Andrea Goodard (Leon County Schools) ask why first and second graders (respectively) find these subtraction items:

41 – 39 201 – 199

much more difficult to solve correctly than this one:

100 – 3

In a 2014 study, only 29 percent of second graders were able to solve 201 – 199 correctly, but

almost all first and second graders could solve 100 – 3, often by counting backwards using their fingers.

What makes 100 – 3 easier is that the subtrahend is small; students only need to take away 3, and they can solve it quickly by using the standard "take away" strategy, counting backwards from 100. The challenge with the other two problems is that the take-away strategy (*How much is left if I take 39 away from 41?*) is cumbersome and inefficient; the subtrahend is large and, say the authors, "one has much work to do to find the answer and many potential pitfalls along the way."

A much more efficient way of thinking about the top two problems is asking, *How far apart are 41 and 39?* or *What would I have to add to 39 to get 41?* Why don't primary-grade students use this approach? Because when subtraction is introduced in the primary grades, students are taught to use the take-away approach – for example, *Connie has 13 marbles. She gave 5 to Juan. How many marbles does Connie have left?* Students read 13 – 5 as "Thirteen take away five." This works for beginning problems, but is unhelpful and confusing with a problem like, *Connie has 5 marbles. How many marbles does she need to have 13 altogether?* Nothing in the story is being taken away, and the problem makes no sense – nor at this point does mathematics! But thinking in terms of the distance between numbers on a number line, problems like this are easy to solve; for example, 201 – 199 is easy if students ask themselves, "How far is 199 from 201?" This approach also paves the way for algebra problems determining the horizontal or vertical distances between two points on a plane.

The key insight, say Whitacre, Schoen, Champagne, and Goodard, is that there are situations where the distance-between approach is more efficient than the other – specifically, where the numbers are closer to each other. What students need to learn is pausing and considering the numbers in a problem before trying to solve it – what the authors call *relational thinking*. "A student with a disposition toward relational thinking has a habit of thinking before acting," they say (for example, noticing that 100 – 3 should be solved one way while 41 – 39 will be easier using a different approach).

"Relational Thinking: What's the Difference?" by Ian Whitacre, Robert Schoen, Zachary Champagne, and Andrea Goodard in *Teaching Children Mathematics*, December 2016/January 2017 (Vol. 23, #5, p. 302-308),), http://bit.ly/2gkdOEM; the authors can be reached at iwhitacre@fsu.edu, rschoen@lsi.fsu.edu, zchampagne@lsi.fsu.edu, and goddarda@leonschools.net.

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6. Productive Struggle in Middle-School Classrooms

(Originally titled "The Ins and Outs of Academic Help Seeking")

In this article in *Education Update*, Sarah McKibben says there are three ways students may ask teachers for help (or not) in classrooms:

- Expedient help-seeking – Asking for the answer so they can move on;
- Avoidant help-seeking – Not asking for help when they actually need it;

- Adaptive help-seeking – Asking for just enough information or the clue needed to solve a problem, the goal being real learning.

Unfortunately, expedient help-seeking is quite common. Many teachers "rescue" students who are having difficulty, either because a student is about to give up or because several students are simultaneously asking for help. A frazzled teacher tends to give quick answers, which doesn't really solve students' confusion. Teachers should respond to questions with complete explanations, advises Stuart Karabenick (University of Michigan): "Just saying, at the beginning of class, to 'ask when you don't understand' is not enough."

In addition, says teacher/author Robyn Jackson, "When teachers help too much, they reinforce the idea that it's about getting it right and not about the struggle for learning." Students can get in the habit of asking for help rather than putting in the necessary effort and becoming more self-reliant.

How can teachers encourage a better dynamic? A general strategy is fostering a growth mindset and valuing mastery over competition. It's helpful to build in scaffolding and resources that support students working through problems independently. Teachers can also model how to think through what made an answer incorrect and find a better way. "That's a great non-example," a teacher might say, then walk students through the steps needed to correct it.

Teachers can also get students thinking explicitly about the help-seeking process and deciding the kind of help they need and when. In one Washington, D.C. school, students are taught what it means to "be kind, be specific, and be helpful" when working with classmates. The school's aim, says curriculum director Jeff Heyck-Williams, is to "ensure that the kids are grappling constructively, not just looking for a crutch… The learning process is about the struggle, and you don't want to take that away from someone… We don't just step in and give kids answers or steps to solving a problem, but we direct them with questions." The message is that students need to do the intellectual heavy lifting.

Students can also be taught to use different words when asking for help. "Maybe if we called it 'seeking input' rather than 'asking for help', kids would go for it more," says Carol Dweck (Stanford University). "Kids could say to the teacher, 'I think I need some input, now.' Or the teacher [could] say, 'Tell me when you need some input.' Everyone needs input, at some point."

"The Ins and Outs of Academic Help Seeking" by Sarah McKibben in *Education Update*, December 2016 (Vol. 58, #12, p. 1, 4-5), available to ASCD members at http://bit.ly/2i00jfS

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7. A Strategy to Make Multi-step Word Problems Easier

In this article in *Teaching Children Mathematics*, consultant Robyn Silbey suggests a way to help students grapple with word problems that have more than one step – for example, *702 children take part in an art contest. 417 are girls, the rest are boys. How many more girls than boys are there in the art contest?* "Some students become overwhelmed and are unable to

wade through the problem-solving process," says Silbey. "Others find the numbers too threatening to make sense of the problem."

To work out problems like this one, students need to (a) understand it, (b) make a plan, (c) solve it, and (d) look back to evaluate the solution (these steps were identified by George Pólya in 1945). Silbey suggests students use an expanded version of these steps to make a complex problem more manageable:

- Read the problem to yourself or aloud and rephrase it in your own words.
- Replace the whole number values with numbers no greater than 20 that make sense (in the example, *7 children take part in an art contest. 4 are girls, the rest are boys. How many more girls than boys?*).
- Reread the problem aloud with the replaced numbers.
- Use the replaced numbers to describe and justify the solution strategy.
- Check for reasonableness in the problem using the replaced numbers.
- Return to the actual numbers and use the process determined in the previous steps to solve and check.

"Reasoning Through Multistep Problems" by Robyn Silbey in *Teaching Children Mathematics*, December 2016/January 2017 (Vol. 23, #5, p. 271), no e-link available

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8. Using Individual Conferences to Get Reluctant Readers Reading

(Originally titled "The Secret to Engaging Reluctant Readers")

In this *Education Update* article, Iowa first-grade teacher Anne Apland says her most powerful strategy with reluctant readers is individual conferencing. "I am absolutely amazed by the information I am able to learn about each student in a very short time," says Apland. She sits with students wherever they are working, focuses entirely on them (students know that interrupting is not okay), and:

- Finds out each student's likes and dislikes – fiction? nonfiction? a particular style?
- Encourages them to work on one thing affecting their confidence or development;
- Steers them away from books that are too difficult, or suggests a more challenging book.

Apland does 2-3 conferences a day, each about five minutes, and uses a spreadsheet to jot notes about each student and reflect on the most effective strategies.

"The Secret to Engaging Reluctant Readers" by Anne Apland in *Education Update*, December 2016 (Vol. 58, #12, p. 8), http://bit.ly/2hRCqUn

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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 others very well-informed on current research and effective practices in K-12 education. Kim Marshall, drawing on 45 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 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).

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Core list of publications covered

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
Communiqué
Ed. Magazine
Education Digest
Education Gadfly
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)
Journal of Staff Development
Kappa Delta Pi Record
Knowledge Quest
Literacy Today
Mathematics in the Middle School
Middle School Journal
Peabody Journal of Education
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
The Atlantic
The Chronicle of Higher Education
The District Management Journal
The Journal of the Learning Sciences
The Language Educator
The New York Times
The New Yorker
The Reading Teacher
Theory Into Practice
Time Magazine