Marshall Memo 819

A Weekly Round-up of Important Ideas and Research in K-12 Education
January 13, 2020

In This Issue:

Quotes of the Week

"Technology can do many things, but it can't teach discernment."
Sam Wineburg and Sarah McGrew (see item #6)

"An amazing lesson for third graders on first-grade standards produces fourth graders who are ready for the second grade."
Douglas Fisher, Nancy Frey, and Olivia Amador (see item #2)

"Inside the school, evaluation was a distraction from the real work of teaching and learning… The discussions following observations were usually about scores, not instruction."
Simon Rodberg (see item #4)

"Achievement is low, costs are high, staff are burning out, and many parents are unhappy."
Nathan Levenson on special education in many districts (see item #5)

"If every principal sets scheduling priorities on their own, some students will benefit but others won't."
Nathan Levenson (*ibid*.)

"Today many parents are unsure of how to raise a boy, what sort of masculinity to encourage in their sons. But as I learned from talking with boys themselves, the culture of adolescence, which fuses hyperrationality with domination, sexual conquest, and a glorification of male violence, fills the void… Boys routinely confided that they felt denied – by male peers, girlfriends, the media, teachers, coaches, and especially their fathers – the full spectrum of human expression."
Peggy Orenstein in "The Miseducation of the American Boy" in *The Atlantic*, January/February 2020 (Vol. 325, #1, pp. 62-74), https://bit.ly/30ixChf

1. Questions to Ask Students During a Classroom Visit

In this article in *Principal*, Douglas Fisher and Nancy Frey (San Diego State University and Health Sciences High & Middle College) and Olivia Amador (Chula Vista Elementary School District) suggest visiting classrooms every day and quietly asking a sampling of students these questions:

- *What are you learning today?*
- *Why are you learning that?*
- *How will you know whether you've learned it?*

Fisher, Frey, and Amador say that if 90 percent of students have good answers to these questions, the school has a high level of *instructional clarity*. "Simply put," they say, "when students know what they're supposed to learn,, why they are learning it, and how they will know whether they have learned it, they are more likely to demonstrate mastery." Here are their thoughts on each of the questions:

The first is different from asking, *What are you working on today?* which focuses on the task or the assignment. Better to ask about learning intentions which, if the teacher has been clear, should be on the tip of every student's tongue. They might say:

- *We are learning about the impact of the setting on a character.*
- *We are learning about the rotation of the sun and moon.*
- *We are learning about persuasive techniques used in advertising.*

Another advantage of asking about learning intention is that it's easier for an observer to see if the instructional task is at the appropriate level of rigor. "An amazing lesson for third graders at first-grade standards," say Fisher, Frey, and Amador, "produces fourth graders who are ready for the second grade."

Answers to the second question – *why* students are learning something – are a good way of assessing engagement and perceived relevance. A stellar response from a student might be, *We are learning more about syllables today because they help us read big words, and reading bigger words lets us read new books and understand what we're reading.*

The third question is about benchmarks for mastery, which are often a secret locked in the teacher's mind. "Success criteria provide students with clear, specific, and attainable goals," say Fisher, Frey, and Amador, "and can spark motivation in some of the most reluctant learners. When teachers articulate success criteria, they are more likely to enlist tudents in their own learning."

What students say in response to these three questions can provide exceptionally helpful feedback to teachers after classroom visits. There's no better gauge of instructional

clarity than what individual students say when they're questioned one on one. This feedback to teachers, say Fisher, Frey, and Amador, can bring about marked changes in learning intentions, rationales, and success criteria, which are the foundation for good choices of pedagogy and materials.

"Clear Benefits" by Douglas Fisher, Nancy Frey, and Olivia Amador in *Principal*, January/ February 2020 (Vol. 99, #3, pp. 42-43), https://www.naesp.org/principal; Fisher can be reached at dfisher@mail.sdsu.edu, Frey at nfrey@mail.sdsu.edu.

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2. Clickers and Peer Discussion in High-School Classes

In this *Harvard Educational Review* article, Bryan Henderson (Arizona State University) says "active learning" is a broad term that covers everything that isn't traditional lecture teaching to passive students. In fact, there are many ways of making students more "active" learners; one of the best, Henderson believes, is "peer instruction" using clickers (wireless audience response devices) in the following manner:

- Students listen as the teacher presents content.
- The teacher poses a conceptual question on the content with several answer options.
- Students consider the options and anonymously submit their answers via clickers.
- The teacher displays the number of "votes" for each option.
- Students pair up and debate their choices and the reasons they made them.
- Students re-vote on the same question via clickers (they may or may not have changed their mind after discussing the question).
- All answers are displayed (the correct answer usually gets more votes).
- The teacher discusses the correct answer and any lingering misconceptions.

This process has produced learning gains twice as great as conventional instruction in some studies.

Henderson wondered which was the most important step in the model and whether variations in active-learning pedagogy might produce the same robust learning gains. He studied the same teacher working with four different groups of high-school physics students, introducing variations in how students spent their time between their first clicker vote and their re-vote: (a) pure lecture and note-taking; (b) students writing down their thinking; (c) students debating each question with peers; and (d) students writing first, then discussing with peers.

The results showed the strongest learning gains when students were given the chance to talk with other students between clicker votes. Henderson also found that time of day mattered: the benefits of turning the class over to the students for discussion were greater in the morning than in the afternoon.

An important message here is that results were not dependent only on whether clicker technology was used; what mattered was *how* and *when* the technology was used with students, with the most powerful variable being a chance to talk with a peer about a challenging question.

"Beyond 'Active Learning': How the ICAP Framework Permits More Acute Examination of the Popular Peer Instruction Pedagogy" by Bryan Henderson in *Harvard Educational Review*, Winter 2019 (Vol. 89, #4, pp. 611-634), available for purchase at https://bit.ly/3a9xfdk; Henderson can be reached at jbryanh@asu.edu.

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3. In Math, Which Comes First, Conceptual Understanding or Skills?

In this article in *Communiqué*, Amanda VanDerHeyden (Spring Math) and Robin Codding (Northeastern University) say that students' proficiency in mathematics is "a socially meaningful action that, in effect, can be an economic gateway to their future lives." It's possible to see if students are on track to future success if they have mastered foundational material at several points:

- Kindergarten – Early numeracy;
- Grade 3 – Whole numbers;
- Grade 6 – Proportion quantity and operations;
- Grade 8 – Linear functions.

Unfortunately, say VanDerHeyden and Codding, many schools don't intervene until the middle grades, by which point it may be too late for students who are deeply entrenched in remedial tracks.

It's not that teachers, counselors, and school leaders are unaware that some students are struggling with math in the early grades, so why the paucity of effective interventions? The authors cite two reasons: (a) a plethora of materials and recommendations from researchers, websites, blogs, colleagues, and publishers, which leave students "vulnerable to ineffective approaches by well-meaning adults;" and (b) misconceptions among educators about procedural versus conceptual math and which should come first; this confusion is partly the result of mixed signals from researchers in recent years.

VanDerHeyden and Codding believe that when educators untangle the misconceptions about procedural and conceptual math, they will make better decisions choosing instructional materials and approaches. The best research indicates that:

- Procedural fluency and conceptual understanding emerge *in concert* around specific and connected skills;
- To become fluent with procedures, students need frequent doses of practice, engaging materials, lots of opportunities to respond, and feedback;
- To know if students have attained mathematical fluency, teachers need to use brief timed assessments.

For many educators, these are controversial statements. VanDerHeyden and Codding explain their thinking by addressing five misconceptions:

• *Misconception #1: Practicing math procedures and taking timed tests are just rote memorization*. Actually, say the authors, practice to mastery is important and brief timed tests tell teachers whether students have developed fluency (accuracy plus speed) with key building blocks (e.g., times tables). Teachers who use untimed assessments of content and

understanding will miss important information on fluency, handicapping subsequent instruction.

• *Misconception #2: Math instruction and assessment cause anxiety*. The biggest source of math anxiety, say VanDerHeyden and Codding, is poor performance, and a high level of anxiety degrades performance. The best way to address this vicious cycle, they believe, is knowing how students are doing (frequent assessments) and focusing on "improving skill proficiency (this cannot be done by avoiding challenging math work and timed assessments) and promoting a growth mindset (as opposed to a fixed ability mindset) using specific language and instructional arrangements to promote the idea that I, as a student, can work hard and beat my score; I can grow today; my brain is like a muscle that gets stronger when I work it with challenging math content."

• *Misconception #3: You can't teach a child how to solve a math problem until you have established conceptual understanding*. Not true, say VanDerHeyden and Codding: "In order to solve problems flexibly and efficiently, students need to be exposed to instruction that is both conceptual and procedural… Effective instruction includes both, and not in a linear fashion, but in a way that facilitates bidirectional input and opportunity and results in understanding and performance that is flexible, retained, adaptable, and useful in learning new, more-complex content."

• *Misconception #4: Explicit instruction is beneficial only for struggling learners*. It's true that students having difficulty with mathematics benefit from explicit instruction, but that's also true for students who are doing well. The key is how explicit instruction is defined, say VanDerHeyden and Codding. It's not didactic lectures but "a systematic approach that incorporates previewing of previous skills and concepts, precise instructions, modeling, guided and independent practice, immediate feedback, and checks for maintenance of skills… Explicit instruction provides highly engaging learning volleys between content, teachers, and students that build many opportunities for practice, verbalization, feedback, and demonstration of mathematical thinking, which in turn sets the stage for successful skill acquisition and mastery, and enables creative expression and curious exploration."

• *Misconception #5: Executive functioning interventions improve math performance*. There certainly is a correlation between the two, say VanDerHeyden and Codding, but studies don't show causation – which suggests a more integrated approach: "It has long been recognized that students at risk for mathematics learning disabilities may also have difficulties with attention, motivation, self-regulation, and working memory. Thus, when building intensive interventions, it is useful to include self-regulation and reinforcement strategies, minimize cognitive load on working memory and reasoning by including explicit instruction and breaking down problems into smaller more-manageable parts, minimize excessive language load by incorporating visual representations, and provide fluency practice."

"Belief-Based Versus Evidence-Based Math Assessment and Instruction" by Amanda VanDerHeyden and Robin Codding in *Communiqué*, January/February 2020 (Vol. 48, #5, pp. 1, 20-25), no e-link available; the authors can be reached at amandavande@gmail.com and r.codding@northeastern.edu.

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4. Problems with a Teacher-Evaluation Process

In this article in *Principal*, Simon Rodberg (American University) remembers his days in the central office of the Washington, D.C. Public Schools, where he worked on designing and rolling out IMPACT, an innovative approach to teacher evaluation. In the system's first year, more than 200 underperforming teachers were fired (from among the district's 5,000 instructors). "We were going to change the education world through evaluation," says Rodberg. "Evaluation was supposed to help principals become instructional leaders." A new rubric with a 4-3-2-1 scale of proficiency was designed to provide a common language about good and not-so-good instruction, give observers an objective way to score lessons, and gather data and make comparisons among 5,000 teachers in 200 schools.

But when Rodberg become an assistant principal in the district ("I missed the daily energy of schools," he says), the evaluation process looked quite different: "Inside the school, evaluation was a distraction from the real work of teaching and learning… The discussions following observations were usually about scores, not instruction. The simplicity of those single-digit numbers assigned – a 3 or a 4 for checking for understanding, a 2 or a 3 for building classroom community – made them the focal point of teacher-supervisor discussion, not the improvement of student learning." The rubric scores were part of a teacher's end-of-year performance evaluation (with firing a possibility), but day by day they sparked intense debates on the difference between a 3.2 and a 3.3 after a classroom visit. "We couldn't talk about pedagogy," says Rodberg. "The number took up all the conversational room."

When he became principal of a startup charter school, Rodberg had the luxury of rethinking teacher evaluation, and his school did away with formal evaluations and giving a rubric score to individual classroom visits. Teachers were observed informally throughout the year, and feedback conversations focused on specific classroom practices and the best ways to help students learn. "Replacing a more-complex evaluation with a simple one made room for valuable instructional conversation and feedback," Rodberg concludes.

"The Unintended Impact of Evaluation" by Simon Rodberg in *Principal*, January/February 2020 (Vol. 99, #3, pp. 48-49), https://www.naesp.org/principal; Rodberg can be reached at simonr@gmail.com.

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5. Effective Practices for Students with Special Needs

In this article in *School Administrator*, Nathan Levenson (District Management Group) says that after consulting with hundreds of school districts, he sees why special education is keeping leaders up at night: "Achievement is low, costs are high, staff are burning out, and many parents are unhappy." But students with special needs are doing much better in some districts, and Levenson has found it's because their superintendents have taken five key steps:

• *Creating urgency and hope* – "School district leaders need to promote the view that students with disabilities deserve better and better outcomes, and those are achievable in times of tight budgets… What superintendents talk about will set the agenda for others."

• *Championing a robust theory of action* – For students with mild to moderate special needs, these are proven, research-based best practices:

- 100 percent of core instruction – All of the subject-area curriculum needs to be with regular-education students and taught by skilled general-education teachers;
- Extra time to learn – Students have additional time every day to fill in past skill gaps, re-learn current-year content, unlearn misconceptions, and hear tomorrow's lesson in advance.
- Content-strong teachers – The teachers providing extra-time instruction need to have deep content knowledge.

"These best practices are common sense but not common practice," says Levenson.

• *Funding what works* – It's not enough to advocate for effective practices; the funding must be there to cover the reading, math, and English teachers to handle the extra-time interventions. This may mean shifting funding from generalist special educators and paraprofessionals.

• *Setting a few non-negotiables for school schedules* – "Scheduling either brings to life or buries the best practices," says Levenson. "If every principal sets scheduling priorities on their own, some students will benefit but others won't." Effective superintendents take a hands-on approach in this key area: in elementary schools, intervention periods need to be scheduled if students with special needs are going to have 100 percent of core instruction with their peers, as well as extra learning time. In secondary schools, intervention courses need to be blocked in, staffing has to be sufficient, and graduation requirements can't box out intervention classes.

• *Supporting special educators* – "Superintendents can make the job more sustainable for special educators," says Levenson, "by streamlining meetings and paperwork and allowing staff members to play to their strengths."

"Be the Champion! When It Comes to Special Education" by Nathan Levenson in *School Administrator*, January 2020 (Vol. 77, #1, pp. 26-29), no e-link available; Levenson can be reached at Nlevenson@DMGroupk12.com.

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6. Who Is Best at Spotting Junk on the Internet?

"Technology can do many things, but it can't teach discernment," say Sam Wineburg (Stanford University) and Sarah McGrew (University of Maryland) in this *Teachers College Record* article. "The Internet has democratized access to information but in so doing has opened the floodgates to misinformation, fake news, and rank propaganda masquerading as dispassionate analysis." Wineburg and McGrew share the results of their study of three different groups' ability to critically examine online material, how long they took, and the strategies they used. They watched 25 Stanford undergraduates, 10 Ph.D. historians, and 10

professional fact checkers as they looked at online material on bullying in schools, minimum wage policy, and teacher tenure.

Who did best? It wasn't even close. "Only two of the 10 historians adroitly evaluated digital information," say Wineburg and McGrew. "Others were often indistinguishable from college students. Both groups fell victim to the same digital ruses." Only 20 percent of the undergraduates were able to identify the most reliable website for one of the issues, only 50 percent of the historians – and 100 percent of the fact checkers. The amount of time needed to find a relevant source for another issue was 318 seconds for the students, 220 seconds for the historians, and 51 seconds for the fact checkers.

The fact checkers did significantly better because they used two specific techniques that are eminently teachable:

- Taking bearings – "Before diving deeply into unfamiliar content, chart a plan for moving forward," say Wineburg and McGrew. "Taking bearings is what sailors, aviators, and hikers do to plot their course toward a desired destination."
- Lateral reading – This means immediately leaving the website being examined and opening new tabs along the browser's horizontal axis, drawing on the resources of the Internet to learn more about the site in question and its claims.

It's interesting that these approaches are quite different from the Common Core skill of close reading: "read and reread deliberately" in order to "reflect on the meanings of individual words and sentences." When looking critically at Internet content, quite a different approach is needed. "Instead of closely reading or ticking off elements on a list," say Wineburg and McGrew, "[the fact] checkers ignored massive amounts of irrelevant (or less crucial) text in order to make informed judgments about the trustworthiness of digital information. In short, fact checkers read less but learned more."

"Lateral Reading and the Nature of Expertise: Reading Less and Learning More When Evaluating Digital Information" by Sam Wineburg and Sarah McGrew in *Teachers College Record,* November 2019 (Vol. 121, #11, pp. 1-40), available for purchase at https://bit.ly/2RbxpbL; Wineburg can be reached at wineburg@stanford.edu, McGrew at mcgrew@umd.edu.

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7. U.S. Educational Trends for 2019

"There was no shortage of news about American education in 2019," says Dana Goldstein in this *New York Times* article. Her summary of some key developments:

• *Stagnant student performance and widening achievement gaps* – The NAEP (National Assessment of Educational Progress) found that only one-third of 4th and 8th graders were proficient readers, and there's been no growth in reading and math scores over the last decade. The PISA (Program for International Student Assessment) found that U.S. 15-year-olds haven't made progress in reading and math for two decades. On both tests, the gap between low-performing and high-performing students grew wider, despite a number of reform efforts.

Why the disappointing results? Fingers were pointed at uneven implementation of the Common Core, less-than-effective reading instruction, and persistent poverty.

• *A crisis in college admissions* – The Varsity Blues scandal captured national attention, shaming wealthy parents who tried to bribe and cheat their children into elite colleges. "It called attention to deep-seated inequities in the college-admissions process," says Goldstein, "from unequal access to quality advising and test prep to the ability of wealthy parents to essentially purchase disability diagnoses that can earn a student extra time to take the SAT or ACT exams." A lawsuit challenged Harvard's admission practices with respect to Asian-American students, and although Harvard prevailed (the case is being appealed), new attention was focused on the advantages enjoyed by several majority-white groups, including the children of alumni and donors, and students from rural areas.

• *Declining trust in higher education*. Admission scandals, equity concerns, accusations of political bias, sticker shock, and high dropout rates are feeding doubts about whether a college degree is worth it.

• *Charter schools losing Democratic Party support* – Charter schools now serve about six percent of U.S. students, but have come under fire from the left for harsh discipline policies, serving fewer students with special needs, and contributing to racial segregation.

• *A continuing debate on school integration* – In response to the continued (and in some cases increasing) segregation of U.S. students by race and family income, several Democratic presidential candidates have school integration in their platforms. But in several cities, including New York and Baltimore, white parents resisted efforts to desegregate their children's schools.

"Year In Education Stalled Test Scores, Increased College Costs" by Dana Goldstein in *The New York Times*, December 28, 2019, https://nyti.ms/2tTXtQz

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8. The Challenge Faced by Every Elementary School

In this *Education Gadfly* article, Michael Petrilli reflects on research and development and school improvement. "R&D is top-down," he says; "school improvement is bottom up. R&D is about creating solutions to thorny problems; school improvement is about taking those solutions and fitting them together in ways that work for particular children, communities, and circumstances. R&D is about tools and technology; school improvement is about how to best implement them in the real world." The challenge, says Petrilli, is bringing these two processes together in "purposeful engagement."

In the article, Petrilli lays out what we are asking a typical elementary school to achieve: "Take a group of fifty to one hundred five-year-olds… and, over the course of six years, prepare most of them to succeed in middle school and beyond. That preparation must include mastering grade-level expectations in reading, writing, and math, plus history, geography, and science, plus essential social and emotional skills, including a growth mindset; perseverance; attention to detail; and teamwork. And do all this while forming habits of good character and citizenship; creating an appreciation for art and music; providing opportunities

for physical exercise; in a community of kindness and respect…" In high-poverty schools, there are many more challenges, including lots of turnover of students year to year.

"Where R&D and School Improvement Meet, Good Things Happen" by Michael Petrilli in *The Education Gadfly*, January 8, 2020, https://bit.ly/3a6H0JC

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9. Books About the Deaf, Hard of Hearing, and Deaf-Blind Experience

In this *School Library Journal* article, Ann Clare Lezotte suggests these books about the experience of being deaf, hard of hearing, or deaf-blind. Click on the link below for a full description of each book.

- *She Touched the World: Laura Bridgman, Deaf-Blind Pioneer* by Sally Hobart Alexander (HMH/Clarion, 2008), grade 5-7
- *El Deafo* by Cece Bell (Abrams, 2014), grade 3-7
- *You Don't Know Everything, Jilly P!* by Alex Gino (Scholastic, 2018), grade 3-7
- *The Gallaudet Children's Dictionary of American Sign Language* by Jean Gordon (Gallaudet, 2014), grade K-4
- *Hello, Universe* by Erin Entrada Kelly (HarperCollins/Greenwillow, 2017), grade 3-7
- *Song for a Whale* by Lynne Kelly (Delacorte, 2019), grade 3-7
- *Kasey's First Day of Basketball* by Kentrell Martin (Shelley's Adventures, 2016), grade 2-5
- *Wonderstruck* by Brian Selznick (Scholastic 2011), grade 4-6
- *Feathers* by Jacqueline Woodson (Puffin, 2010), grade 5-7

"Read the Signs" by Ann Clare Lezotte in *School Library Journal*, January 2020 (Vol. 66, #1, pp 42-43), https://www.schoollibraryjournal.com/?detailStory=read-the-signs-deaf-experience

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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 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