Marshall Memo 868

A Weekly Round-up of Important Ideas and Research in K-12 Education
January 4, 2021

In This Issue:

Quotes of the Week

"We miss you."

> The key words used by educators in a Wisconsin middle school as they e-mailed, texted, called, and made personal visits to missing students, ultimately getting 99 percent engaged in remote instruction, described by Douglas Reeves in "Relentless Communication Leads to a Dramatic Improvement in Attendance", December 29, 2020; Reeves is at douglas.reeves@creativeleadership.net.

"We are often in such a rush in school – from one class to the next, from one topic to another – that we don't remember that the fundamental job is to partner with families to raise successful human beings."

> Jal Mehta (see item #4)

"In the greater context of the pandemic, who cares about photosynthesis?"

> A Chicago science teacher (quoted in item #2)

"Although leaders may fear being micromanagers, most employees receive far too little feedback – and even those who receive negative feedback would prefer to get more."

> Ryan Pendell in "7 Gallup Workplace Insights: What We Learned in 2020" in Gallup Workplace Science, December 11, 2020

"If you go looking for a study showing your idea is a good one, you will find one. You might find studies showing it's a bad one too, but your subconscious is on the job, looking for reasons to dismiss those findings."

> Nora Gordon in "One Study Is Enough to Be Dangerous" in *School Administrator*, January 2021 (Vol. 78, #1, pp. 12-13); Gordon is at Nora.Gordon@georgetown.edu.

1. Kids Sum Up 2020

In this *New York Times* feature, Lucas Smith, age 9, asked young people around the U.S. to describe 2020 in just six words. Here are his favorites, from contributors age 7 to 11:

- Daytime pajamas make great school attire.
- Never take seeing friends for granted.
- The world is a fragile place
- Great parents aren't always great teachers.
- Life can be easy…and hard.
- If I learned one thing: masks.
- I love and hate my family.
- Be catlike: Nap, eat, avoid humans.
- Real friends actually stick with you.
- Lifesavers: doctors, cousins, teachers, elections, Minecraft.

"10 Lessons from 2020" by Lukas Smith in *The New York Times*, December 27, 2020

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2. A Tough Time for Teachers

In this *New York Times* article, Natasha Singer reports on the exhaustion many teachers were experiencing in the closing months of 2020, especially those being asked to toggle between remote, hybrid, and in-person formats as infection rates in their communities waxed and waned. Hybrid instruction seemed to be causing the most stress, with teachers trying to keep an eye on proper mask-wearing and social distancing in their classrooms while engaging students at home.

"I have *never* been this exhausted," said a veteran high-school English teacher in New Jersey. "This is not sustainable." Another teacher wrote on an online discussion site, "I work until midnight each night trying to lock and load all my links, lessons, etc. I never get ahead. E-mails, endless e-mail. Parents blaming me because their kids chose to stay in bed, on phones, on video games instead of doing work." An NEA survey found that 28 percent of teachers were considering leaving the profession or retiring early.

In addition to the challenges inherent in remote instruction, many teachers have stepped up to be impromptu social workers: grief counseling, helping students deal with anxiety, depression, and isolation, and steering them to local food banks. Teachers try to maintain a sense of optimism and normalcy, but it's difficult. "In the greater context of the pandemic,"

said a Chicago science teacher, "who cares about photosynthesis?" And then there's the requirement to judge students' work. "Just the fact that I have to give grades to 9-year-olds right now doesn't seem morally right," said a grade 4-5 teacher, painfully aware that two of his students had recently lost a grandparent to Covid-19. This teacher, who is African American, feels especially pressured because his students are dealing with the pandemic and a heightened awareness of racial injustice.

Some principals are making a point of doing one-on-one check-ins with teachers, urging self-care, and giving them extra time for planning – in one case an entire day each week. In Minnesota, the governor issued an executive order requiring schools to give teachers 30 minutes of additional prep time every day for remote or hybrid instruction.

"U.S. Faces a New Crisis: 'An Extreme Level of Teacher Burnout'" by Natasha Singer in *The New York Times*, December 1, 2020

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3. Thoughts on Remote Instruction

In this article, Steve Blank reports the results of an online forum of 500 university and K-12 educators conducted in December 2020. These are some observations:

- Forced into remote learning by the pandemic, many instructors concluded that, for a lot of things, it works better than they thought it would.
- It's been easier for teams to meet, mentors to mentor, and teachers to access world-class visiting speakers.
- Many, many students feel overwhelmed.
- It takes longer for people to absorb information when delivered online.
- Online, there's more pressure for instructors to be entertaining.
- Some educators say that hybrid instruction – some students in person and some virtual – is the most detrimental learning environment.
- Good instructional design is more important than ever for student engagement and retention of material.
- Online instruction has forced educators to become clearer and more coherent about what they want to achieve, explicit about what students need to take away from a class.
- With online teaching, everything has to be broken down to bite-size chunks.
- The flipped classroom – lectures as prerecorded homework – reduces the "load" in a remote class and focuses synchronous time on collaboration between instructor and students – and among students.
- There's going to be carryover when we go back to regular instruction, and people are beginning to figure that out.

"What I Learned from 500 Educators" by Steve Blank, December 28, 2020

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4. Reimagining Schools When We Return to a New Normal

"It's looking as though all schools should be able to open fully in the fall," says Jal Mehta (Harvard Graduate School of Education) in this *New York Times* article. "The pandemic is giving us an opportunity to make a pivot that we should have made long ago." His suggestions:

• *Rethink one-size-fits-all schooling*. The pandemic has produced a wide variety of student responses: some kids haven't missed the social pressures and anxieties of in-person schooling, while others feel lonely at home and can't wait to be back in school. Some shy students have learned how to participate more fully in class via the chat function, and others have enjoyed small-group interaction in breakout rooms. "When we reopen schools," says Mehta, "could we do so in a way that creates different kinds of opportunities for all kinds of students – introverts and extroverts, fast processors and reflective thinkers?"

• *Make schools more human*. Paradoxically, the distance created by remote classes has forced schools to get in closer touch with students' and families' life circumstances – and how those intersect with what schools expect. "We are often in such a rush in school – from one class to the next, from one topic to another – that we don't remember that the fundamental job is to partner with families to raise successful human beings," says Mehta. "The pandemic is helping many of us to think about our students in a fuller and more holistic way." Many teachers are building stronger relationships, having frequent check-ins, delving into relevant curriculum topics (including racial injustice), designing tasks that give students agency and purpose, and allowing students more choices - including the music they play during breaks. Another important development: adolescents are getting more sleep, which one study credits for reducing mental health issues in recent months.

• *Rethink the high-school schedule*. The seven-period day is "unsafe in person, unmanageable at home" says Mehta. Some schools have experimented with a quarter system where students take no more than three subjects at a time, allowing teachers to work with far fewer students (for example, 80 instead of 160) and focus more on relationships and deeper understanding of content. One Wisconsin high school took personalization a step further, assigning every adult 10-15 students and to be "on call" for them as they navigate their virtual classes.

• *Reconcile the interests of educators and families*. In some districts, says Mehta, teachers have been "demonized" for pushing back on school reopening to protect their own health and safety. This is a shame, because teachers are essential workers, and "the success of students is intimately connected to the success of teachers… Coming up with ways to build trust and find solutions that are good for both students and adults is one of the meta-lessons of the pandemic," he says.

• *Make up lost ground*. In one recent survey, 56 percent of teachers said they've taught only half the curriculum they cover in in normal times, if that, and the impact has been greatest in lower-income communities and for children of color. "The right choice here," says Mehta, "is to get very specific on what needs to be made up and what does not; teams of teachers and administrators could work together to decide what is essential to keep and what can be pared."

The goal: "greater depth on fewer topics." Funding and access to counseling, technology, and broadband need to be equalized, and Mehta believes there should be a moratorium on standardized testing this spring.

"Make Schools More Human" by Jal Mehta in *The New York Times*, December 27, 2020; Mehta can be reached at jal_mehta@gse.harvard.edu.

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5. Not Getting Covid-19 in the Final Stretch

In this *New York Times* article, Siobhan Roberts reports on the "Swiss cheese" model for maximizing protection against the coronavirus. The idea is that no single layer of defense is perfect – every slice of Swiss cheese has holes – but the more layers between you and the virus (assuming the holes are not aligned), the less chance viral particles have of getting into your body. Here's a graphic of the model, and here are all the layers in more detail:

• Personal responsibilities:
- Physical distance from others who are not in our assured "bubble;"
- Wearing a mask;
- Hand washing
- Cough and sneeze etiquette
- Not touching your face;
- Limiting time in crowded situations.

• Shared responsibilities:
- Fast and sensitive testing and tracing;
- Good ventilation for outdoor interactions;
- Effective indoor ventilation and air filtration;
- Clear messaging from experts;
- Quarantine and isolation for infected people, and those exposed to them;
- Vaccines.

The more layers, the better, says Dr. Julie Gerberding, a scientist at Merck: "Pretty soon you've created an impenetrable barrier, and you really can quench the transmission of the virus. But it requires all of those things, not just one of those things."

Continuing the Swiss cheese metaphor, there are also "mice" that can eat away at the effectiveness of any layer. The worst one is misinformation. "People who are uncertain about an intervention can be swayed by a confident-sounding voice proclaiming that a particular layer is ineffective," says Ian Mackay, a virologist at the University of Queensland in Australia. "When we listen to the loud nonexperts who have no experience in protecting our health and safety, we are inviting them to have an impact on our lives. That's not a risk we should take." He urges us to heed the advice of public health officials and scientists.

"Beating the Pandemic with a Swiss Cheese Defense" by Siobhan Roberts in *The New York Times*, December 8, 2020

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6. Teaching About Exponential Growth in Elementary Math Classes

In this article in *Mathematics Teacher: Learning & Teaching PK-12*, James Russo and Penelope Kalogeropoulos (Monash University, Australia) and Toby Russo (Spensley Street Primary School, Melbourne, Australia) argue that the concept of exponential growth is essential to being a numerate citizen. In fact, they say, a poor understanding of exponential growth is a factor in some countries being slow to react to the coronavirus pandemic. But in most schools, the concept is not introduced properly until high school, when many students have disengaged from mathematics. (The Common Core math standards cover multiplicative patterns in 4.OA.C.5, but don't emphasize their broader implications.) Even at the high-school level, exponential growth is taught in ways that underemphasize its real-world implications.

Russo, Russo, and Kalogeropoulos argue that exponential growth belongs in the upper elementary math curriculum, and needs to be taught in ways – perhaps involving games and children's literature – that help students understand its powerful implications in their lives. The authors suggest four design principles they believe should underpin learning experiences.

• *Present the concept in ways that are meaningful to young learners*. These can include scenarios that are fictional and spark students' imagination.

• *Tasks must lend themselves to visualization*. This is often a shortcoming of mathematical concepts, say the authors. The 1961 book, *A Fish Out of Water*, is perfect for introducing the idea of exponential growth (see below). A boy overfeeds a fish and it grows more and more rapidly until the owner of a pet store must intervene.

• *Students should be able to make predictions*. This is particularly important with exponential growth, since at first the concept is counterintuitive to students.

• *Exponential growth needs to be contrasted with linear growth*. By contrasting concepts (geometric versus arithmetic sequences) that differ in just one important way, students can develop a deeper understanding of exponential growth.

In the appendix of the article, Russo, Russo, and Kalogeropoulos suggest four problems that engage students in those ways:

• *Paper folding task* – Photocopy paper is about 1/10 th of a millimeter thick. Predict about how many times you would need to fold it in half so it is about 10 mm thick. Then test it.

• *Fish out of water investigation* – The book *A Fish Out of Water* (Palmer, 1961) is read to the class and the students are asked: If Otto, the little fish, was 10 centimeters long at the beginning of the story and just over the length of a 50-meter Olympic swimming pool at the end, and doubled in length every 10 minutes, how long did it take Otto to grow to that size?

• *Pocket money problem* – Olive's parents offer her two options for an allowance for the year: $20 a month, or 10 cents in January and then doubling the amount each month. Which will give her more money?

• *Donuts and cupcakes* – Kai's father, knowing he loved donuts, planted a donut tree with one donut on it, and the number of donuts on the tree doubled every day. His sister Amaya loved cupcakes, so her mother planted a cupcake tree with one cupcake on it, and 10 new cupcakes appeared each day. On the Monday the trees were planted (January 1st), Kai and

Amaya's parents said they could have a joint birthday party and invite as many friends as they wanted. But there were three rules:

- Each invitee would be allowed to eat one donut or cupcake.
- Kai's friends could eat only donuts, Amaya's only cupcakes.
- The party had to be on a Saturday.

The challenge: What date should the party take place, and how many friends should Kai and Amaya invite?

"Exploring Exponential Growth in Elementary School" by James Russo, Toby Russo, and Penelope Kalogeropoulos in *Mathematics Teacher: Learning & Teaching PK-12*, December 2020 (Vol. 113, pp. 989-994); the authors can be reached at James.Russo@monash.edu, penelope.kalogeropoulos@monash.edu, and russo.toby.t@edumail.vic.gov.au.

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7. Selecting Students for Gifted Programs

In this *Phi Delta Kappan* article, Scott Peters (University of Wisconsin), James Carter (University of North Carolina), and Jonathan Plucker (Johns Hopkins University) fault the tendency to define "gifted" children as "qualitatively different from everyone else, as though they've been singled out for a lifetime membership in an exclusive club." In actuality, say the authors, exceptional achievement is more complex: "Children will often race ahead in one area while struggling in others, or they'll make rapid progress for a while and then slow down, or they'll struggle for a while and then begin to make rapid progress." What schools should focus on is assessing students' *current* level of achievement in each subject, challenge them appropriately, and support talent development for all students.

Two problems have bedeviled U.S. gifted education from its inception, say Peters, Carter, and Plucker. The first is accurate identification; most selected students are white, Asian-American, and from upper-income families, while students of color are underrepresented. Second, it's unclear which approaches work for which students – a problem that is related to a flawed selection process. There are clearly factors outside of schools' control, especially the effects of poverty and some states' perverse testing policies for identifying gifted students. But the authors believe that using a better selection process would be a big step forward. Their suggestions:

• *Decide what gifted programs are supposed to accomplish*. There's a big difference in a program geared to increasing the number of students in Advanced Placement math, versus one that aims to challenge the top 5 percent of students who are spinning their wheels in regular classes. Similarly, selection will be different for a program geared to boosting math and reading test scores, versus one that aims to enrich the curriculum in science, music, and other areas. Whatever the core purpose of the program, the selection process should be tuned to it.

• *Focus on needs and services, not labels*. For example, if an accelerated program will take students through pre-algebra and algebra in one year, selection criteria should include the prerequisite math knowledge and skills to be successful in the course. It's also important to

match students' achievement at that moment in time, for that subject, rather than assuming that advanced achievement spans multiple years and subjects.

• *Cast a wide net*. Quite simply, this means assessing more students, which annoys anti-testers. Peters, Carter, and Plucker say studies have shown that universal ACT and SAT testing in some states has identified significant numbers of minority and low-income students who otherwise would not have considered college. The authors believe districts should broaden their outreach and then, having identified more eligible students, expand their gifted programs to accommodate them.

• *Choose the right comparisons*. It's not wise to select students based on being in the top 5 percent of a nationally normed test, because some students in a district may not qualify – and yet they're achieving well above their classmates and would benefit from additional challenges. It makes more sense to select the top 5 percent of a district's *own* students, which will also produce a more-equitable pool.

• *Be proactive about equity*. The trick is finding students who should have been identified but were missed. Perhaps they weren't selected because they were confused by the instructions on a test, or their family couldn't afford a test prep program, or they couldn't get transportation to a testing site. The goal is finding and eliminating such obstacles up front so that no worthy students are denied services for reasons unrelated to their academic potential. This is an ongoing struggle because, as the authors point out, the U.S. is "a very unequal country" in which "some students have access to every resource and privilege imaginable, while others struggle to find enough to eat."

• *Be careful when using multiple measures*. This approach can be harmful if implemented in the wrong way, say Peters, Carter, and Plucker. In one elementary school, students were required to score high on each of several measures, which excluded deserving students. In addition, relying on subjective measures such parent, teacher, or student rating scales and teacher recommendation letters can introduce unintended biases and skew the results. "Systems should be designed to be inclusive," say the authors, "– to err on the side of letting kids into a service rather than on keeping them out."

The big-picture goal, conclude Peters, Carter, and Plucker, is "more services for more students" – gifted programs that are truly inclusive and designed to provide the right level of challenge to the right students at the right point in their K-12 trajectories.

"Rethinking How We Identify 'Gifted' Students" by Scott Peters, James Carter, and Jonathan Plucker in *Phi Delta Kappan*, December 2020/January 2021 (Vol. 201, #4, pp. 8-13); the authors are at peterss@uww.edu, JaySCarter@gmail.com, and jplucker@jhu.edu.

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8. Grading Smarter

In this *Edutopia* article, U.K. educator Elena Díaz says that a few years ago, she was often up at 10:00 p.m. grading papers. Driven by a desire to give students high-quality feedback on all their work, she was at it constantly. "I was grading even when I wasn't," says Díaz, "because the grading guilt was there all the time."

But then her own children arrived and she had to get more "clever" with grading. Here are five strategies she's using with notable success:

• *Get students doing more of the work*. That means planning lessons so students are getting verbal feedback on their efforts from the teacher or other students in real time. "By the time students produce answers to open-ended questions," says Díaz, "they have had masses of practice, and there's little to correct, making grading go by much quicker."

• *Think about impact*. Will students learn from having a particular piece of work assessed by the teacher? And will they have time to think through and internalize teacher feedback? If marking an assignment won't improve learning, says Díaz, "then it needs to be replaced by a different activity."

• *Think about alternatives*. A quick multiple-choice quiz can give the teacher and students on-the-spot feedback that boosts learning. Or students can assess themselves on a self-marked form, or look at an answer sheet and think about how their answers can be improved.

• *Use rubrics*. It's very helpful for students to see the specific criteria for getting each grade. Díaz has created a student-friendly feedback sheet that she uses for a wide range of assignments, and models how students can assess and fine-tune their work before handing it in.

• *Streamline grading*. Díaz does this by highlighting students' work in different colors and using the feedback sheet in ways that quickly tell them what needs improvement:

- Green – something that exceeds expectations;
- Pink – an error;
- In the Correct section of the feedback sheet, she writes a word that was misspelled in their text, and students copy it three times.
- In the Perfect section, students write a short, open-ended task to prove they're absorbed the feedback.
- The "Even Better If…" (EBI) section is for suggestions on taking work to a higher level.

"How to Spend Less Time Grading" by Elena Díaz in *Edutopia*, December 22, 2020

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9. Short Item:

Robots Dance Their Circuits Out – The folks at Boston Dynamics had some fun with their creations, producing this video. Enjoy!

"Do You Love Me?" by Boston Dynamics, December 29, 2020

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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: Learning & Teaching PK-12
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