# Marshall Memo 494

A Weekly Round-up of Important Ideas and Research in K-12 Education
July 15, 2013

## In This Issue:



## Quotes of the Week

"They thought that the bullets would silence us, but they failed. And then, out of that silence came thousands of voices… Let us pick up our books and our pens. They are our most powerful weapons. One child, one teacher, one book, and one pen can change the world."

> Malala Yousafzai, 16, of Pakistan, speaking to young leaders at the United Nations, quoted in "Girl Shot by Taliban Makes Appeal at U.N." by Jennifer Preston in *The New York Times*, July 13, 2013, http://nyti.ms/135UFJB

"It's important for young people to discern truth from the goulash of voices out there. You don't get that in a math or engineering curriculum. The place where we learn to contend with conflicting voices, the training ground, the sandbox, is history."

> Sam Wineburg (Stanford University), quoted in "Advocates Finding Ways to Bulk Up History Learning" by Caralee Adams in *Education Week*, July 10, 2013 (Vol. 32, #36, p. 10-11), www.edweek.org

"If there is a heaven for school subjects, algebra will never go there. It is the one subject in the curriculum that has kept students from finishing high school, from developing their own interests…"

> An anonymous writer in 1936 (quoted in item #4)

"In an era when commonplace technology makes communication easier than ever, the communication infrastructure of public education often seems shockingly antiquated."

> Mica Pollock (see item #1)

"I propose that a key design task in education is to figure out which communications in educational communities are necessary [i.e., supporting students' talent development], and to test how a combination of tech tools, face-to-face talk, and (for the time being) paper might enable such communications between diverse people."

> Mica Pollock (*ibid.*)

## 1. Smart Use of Technology for Home-School Communication

"In an era when commonplace technology makes communication easier than ever, the communication infrastructure of public education often seems shockingly antiquated," says Mica Pollock (University of California/San Diego) in this important *Teachers College Record* article. "We know a lot generally about necessary communication in school communities: for example, we know that youth do better when they get regular feedback from teachers on their classroom performance and ongoing personal support from mentors; teachers teach better when youth and colleagues share supportive feedback on improving their teaching; parents and teachers support children's progress better when they communicate often about students' strengths and struggles; families, youth, teachers, and service providers tap local resources better when information about those resources circulates widely."

She goes on to describe a program aimed at improving home-school communication in Somerville, Massachusetts – a city of 77,000 adjacent to Boston with three distinct populations: older working-class citizens, new immigrants, and new gentrifiers. Pollock's "communication infrastructure" project, dubbed OneVille, aimed to answer several questions:

- Who in a diverse community needs to communicate what to whom in order to support young people?
- What barriers prevent such communication?
- Which tools, channels, and habits might support this communication and necessary relationships?
- Are the people who need to be included in a given communication actually included?
- When can technologies truly broaden access to necessary communication, rather than widen disparities of access?

Often, says Pollock, "a support network goes underutilized – like a city at night, with half the bulbs gone dark… Technology can't be treated as if it will automatically enable such necessary communications; instead, researchers and school community members need to test which channels, which detailed designs of channels, and which habits and ground rules for using channels enable specific communications necessary for student support."

Pollock sees an individual student – José – at the center of a web of potential support: teacher, paraprofessional, administrator, nurse, specialist, best buddy, peer, counselor, career mentor, afterschool provider, tutor, coach, community program staff, parent/guardian, other family, and parent liaison. "Now," says Pollock, "think of rare face-to-face support team meetings between 'specialist' and 'counselor'; backpack fliers in English from 'administrator' to recently immigrated 'parent/guardian'; and a 'student' rarely asked by 'teacher' what he enjoys learning. Each communication habit likely fails to enable potential partners to

communicate in necessary ways or in a timely manner about supporting José. If 'teacher' knows José is absent regularly but has no idea why, or knows about his love of science but not about a free summer program for local youth, or if 'administrator' doesn't tell José's father about an afterschool opportunity available for José, there's a crack in the infrastructure of their partnership."

"I propose," says Pollock, "that a key design task in education is to figure out which communications in educational communities are necessary [i.e., supporting students' talent development], and to test how a combination of tech tools, face-to-face talk, and (for the time being) paper might enable such communications between diverse people." The OneVille project was designed to carry this out by making home/school/community communication ready and reliable, robust, rapid, routine, and far-reaching. Here are the six facets of the project:

• *The Dashboard Project* – The aim was to provide ready and reliable student information to teachers and parents. In her discussions with teachers and administrators, Pollock found that student data were buried in different "fields" in the student information system, and the district couldn't afford to modernize it. Administrators sent data requests to the central office, and teachers created their own Excel spreadsheets and analyzed them by hand. "Unable to see different kinds of student data at the same time in a single display, people wasted hours flipping between screens, file folders, spreadsheets, or drawers," says Pollock. For parents, access to information was even more difficult.

Using open-source software, she and her colleagues worked to create a free, accessible platform for report cards, teacher comments, and other important information. Unfortunately, there were glitches in creating the dashboard – not enough programmer time and problems with software – and Pollock acknowledges that better programs and better models are needed, not to mention the challenge of getting people to *use* the dashboard. But she believes that in an era "when anyone can Google any product, for free, there's also no reason why districts should have to drain scarce resources to access basic data." To solve these problems, OneVille turned to…

• *The EPortfolio Project* – Creating electronic portfolios of students' work proved to be a breakthrough. Previously, paper portfolios (consisting mostly of students' five-paragraph essays) were kept in a locked cabinet and viewed during formal accreditation visits. Once the OneVille team figured out how to upload portfolios (using Google-sites, Wikispaces, and Posterous), teachers, administrators, peers, parents, admissions officers, and employers were able to view students' writing, their videos narrating original poetry or solving math equations, and much more. Teachers were able to get to know students in ways that were impossible before and used the information for much-improved running communication with students. One Spanish-speaking student was encouraged by a teacher to post her original poetry online – the first time she had shared her work with anyone. Peers began praising her work and said they wanted to post their own. The girl said the whole experience was transformational.

• *The Texting Project* – The only limitation of EPortfolio was that students couldn't share the full range of their personal struggles in such a public, relatively static format. For this

kind of rapid and routine communication between students and their support team, texting was the best channel. Pollock and her team got the school up and running with GoogleVoice (a free texting tool), met with staff, students, and parents about basic ground rules (don't expect a response after 10 p.m. or before 8 a.m.), and soon teachers and students were texting rapidly and frequently about coming to school on time, completing homework and requirements, and participating in school activities. "Texts showed banter and over time, deeper revelations over personal struggles, failures, even rehab placement," says Pollock. "Over time, through call and response on this simplest and hardest to ignore of channels, students and teachers at first skeptical about texting built relationships that many students said made them want to come to school at all… Teachers also noted that far from replacing face-to-face communications, texting outside of school often served as a portal to more informed face-to-face communications inside school."

The Texting Project raised obvious concerns about confidentiality, boundaries, and teachers' out-of-school time, but Pollock says that "refusing tech because of these uncrossed frontiers is sort of like refusing the printing press because it could produce dangerous books. The design task for schools is to determine acceptable habits of using tech channels."

• *The Parent Connector Project* – Although texting was the most common-denominator technology in Somerville, not everyone had access to cell phones and computers and many non-English-speaking parents found it difficult to communicate with teachers. So OneVille created a low-tech connection to parents using phone calls and face-to-face meetings. This included Reading Nights – in-person parent dialogues on literacy strategies; multilingual coffee hours in which bilingual parents served as interpreters for the principal; and parent dialogues about specific issues in the school. In addition, bilingual parent volunteers started making phone calls to recent immigrant parents to explain important school information, hear parents' questions, offer assistance, translate key information for an open-source hotline, and get computers to more parents. More information on these efforts is available at http://wiki.oneville.org/main/The_OneVille_Project.

"It Takes a Network to Raise a Child: Improving the Communication Infrastructure of Public Education to Enable Community Cooperation in Young People's Success" by Mica Pollock in *Teachers College Record*, June 2013 (Vol. 115 # 7, p. 1-28), http://www.tcrecord.org/Content.asp?ContentId=17045

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## 2. Collaboration Is the Key to Effective Organizations

In this article in *Education Week*, Greg Anrig (vice president at the Century Foundation) says studies have pinpointed three common factors in hospitals that get better patient results for less cost (for example, Kaiser Permanente, Cleveland Clinic, and the U.S Veterans Health Administration):

- Highly collaborative cultures built on teamwork;
- Unusually sophisticated attentiveness to test data to monitor patient progress and respond to problems (for diagnostic, not punitive purposes);

- An orientation toward ongoing adaptation rather than rigid adherence to established routines.

A growing body of research shows that similar factors account for the success of schools with above-average improvement in student achievement. Here are the factors identified in a 2010 University of Chicago study of 400 beat-the-odds Chicago elementary schools:

- A coherent curriculum in which learning targets, classroom materials, and assessments are aligned within and across grade levels – with teacher involvement;
- Talent development that includes opening classroom doors to colleagues and external consultants;
- Strong parent and community ties with an integrated support network for students;
- Responding to difficulties students may be having;
- Leadership that gets teachers, parents, and community members to take responsibility for school improvement.

Another study of effective schools found a closely related set of factors, including:

- Teacher/administrator collaboration in developing and selecting instructional materials, assessments, and classroom methods;
- Time set aside each week for teacher collaboration to improve instruction;
- Teachers being open to being observed and coached;
- Teachers and administrators closely monitoring assessment data to identify areas where students are struggling;
- Collaboration with parents, community groups and social-service providers.

A recent book by David Kirp about the Union City, NJ schools (*Improbable Scholars*) says that young teachers improved "in good measure because of the informal tutelage that old hands give the newbies, the day-to-day collaboration, the modeling of good practice, and the swapping of ideas about what's worth trying in their classrooms." Finally, Anrig mentions the Peer Assistance and Review (PAR) program, in which master teachers coach novices and work with more-experienced teachers who are having difficulty.

From these findings, Anrig draws a clear message: Schools need to maximize collaboration and eliminate policies and practices that undermine teamwork – for example, getting teachers competing against each other for bonuses for improved student test scores. Building relational trust and social capital is essential to success, he says, and we must stop doing things that induce unhealthy competition, suspicion, and fear and prevent teamwork and creativity from flourishing.

"From Health-Care Reform, Lessons for Education Policy" by Greg Anrig in *Education Week*, July 10, 2013 (Vol. 32, #36, p. 40, 36), www.edweek.org

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## 3. An Autobiography Project in a New York City High School

In this helpful article in *English Journal*, Sarah Bickens and Franny Bittman (teachers in New York City's Manhattan Village Academy) and David Connor (Hunter College) describe an autobiography project designed to help ninth graders develop their Common Core

reading, writing, listening, speaking, and metacognitive skills *and* deal with their first year in the bigger, more hectic, more demanding, and diverse world of high school. Here are the ten chapters students write over the course of their first semester:

• *Chapter 2: Before I Was, There Was…* (Students begin with the second chapter and write Chapter 1, a reflection on the process of writing an autobiography, at the end) – Students interview family members and piece together what happened just before they were born. Teachers teach interviewing skills, get students thinking about cause and effect (how their parents met, important events in their parents' lives, things that were happening in the world), review strong model texts such as *Angela's Ashes* and *The Autobiography of Malcolm X*, and work with students in class on composing and revising their interview questions. When students have done initial interviews and submitted an initial draft of the chapter, teachers work with them on missing details, verb usage, and strong conclusions, sometimes sending them back for more information. One student quoted her weeping mother: "Before I had you, my life was completely upside down," and went on to write: "I knew at that moment that although her past was indeed more than fourteen years ago, to her it seemed like just yesterday."

• *Chapter 3: My Origin and Culture* – In this chapter, students research how their families came to the United States and describe four cultural traditions currently practiced in their homes. Teachers provide source material on patterns of immigration and current immigration issues and teach words like *immigration, emigration, citizen, ethnicity, culture, multicultural, Middle Passage, tribal lands,* and *customs*. As students begin to write this chapter, they introduce their ancestors and their countries of origin, write about the difficulties of immigration (or migration), describe their ethnicities, and use pie charts to map their cultural breakdown (one girl said she was proud to be 33.3% Puerto Rican, 33.3% Dominican, and 33.3% American).

• *Chapter 4: My Neighborhood* – Students research and describe specific characteristics of their community. As students write this chapter, teachers focus on tone and use of details.

• *Chapter 5: My Indelible Event* – This chapter, in which students select any important event in their lives and describe it in vivid detail, is an opportunity for students to shift into a more literary mode. "As with most chapters," say Bickens, Bittman, and Connor, "brainstorming early in the writing process is key. Maturity levels range enormously in ninth grade, and many young teens have yet to develop the ability to be self-reflective." Teachers steer students away from writing about current boyfriends and girlfriends and eighth-grade prom night and ask what will matter in five or 25 years. Prompts help: "My scariest moment was…" "My happiest moment was…" and "The time I felt most confused was…" At this point in the semester, students are working in literature circles reading books like *I Know Why the Caged Bird Sings* and *Kaffir Boy*. These literary experiences, along with exercises like bringing in different kinds of foods, help trigger memories and get students writing.

• *Chapter 6: The Best Advice* – Using similar prompts, teachers guide students to choose, draft, and revise a pivotal piece of wisdom from an elder, parent, or peer. This chapter has something of the feel of an ELA exam question, and helps develop a critical lens, compare-and-contrast skills, and the ability to interpret figurative language.

• *Chapter 7: The Person I Miss* – Back in interviewing and remembering mode, students decide on a person they have lost and draft a letter to him or her.

• *Chapter 8: My Creative Side* – Students highlight their skills, talents, and preferred forms of expression using poetic, graphic, or comic formats.

• *Chapter 9: It's Not Fair* – Teachers help students take a stand on a topic of importance – social, political, or personal – and support it through research on current events.

• *Chapter 10: My Future* – Projecting into the future, students write award speeches they might hear about themselves or write their own obituaries describing highlights of their long, productive lives.

• *Chapter 1: Introduction* – Written last, this chapter encourages students to reflect on the whole project, think of themselves as authors, and introduce the autobiography as strongly as possible. Teachers encourage them to begin with a simile, symbol, quotation, image, or allusion that will grab readers and set the tone. Reading the opening paragraphs of well-known autobiographies is an effective prompt. After this creative introduction, students present basic information about themselves, identify primary and secondary themes, and use a metaphor to describe what it was like to write the autobiography.

The final step is designing a cover page and writing a dedication and table of contents. "After reflecting on their lives and the journeys of their families," say Bickens, Bittman, and Connor, "many students reveal a newfound respect for their parents and dedicate the project to them." Students then prepare a PowerPoint presentation and "defend their lives" to a panel of teachers and student judges, pointing out highlights in each chapter and their favorite sections and saying what they learned.

The autobiography project accomplishes several things, say the authors. It's a powerful way to teach Common Core standards in the first semester of high school; it builds students' confidence and sense of self-worth and in many cases helps them reconnect with their parents and other family members; it introduces students to a variety of authors and some powerful pieces of writing; students can go into more depth on particular issues, for example, immigration or social justice; and it helps teachers get to know students in much more depth. "The autobiography project is a challenging task for the teacher and for the students," conclude the authors. "It requires great organization, a sustained focus, and the willingness to open up about personal issues and experiences." And it's well worth it, leading straight to higher achievement through the high-school grades and mastery of the rigorous English Regents exam.

"Developing Academic Skills Through Multigenre Autobiography" by Sarah Bickens, Franny Bittman, and David Connor in *English Journal*, May 2013 (Vol. 102, #5, p. 43-50), http://www.ncte.org/library/NCTEFiles/Resources/Journals/EJ/1025-may2013/EJ1025Developing.pdf; the authors can be reached at lbickens@schools.nyc.gov, fbittman@schools.nyc.gov, and dconnor@hunter.cuny.edu.

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## 4. Tracing Student Failure in Algebra to the Upper Elementary Grades

In this thoughtful *Teachers College Record* article, Thomas Good, Marcy Wood, Darrell Sabers, Amy Olson, and Crystal Kalinec-Craig (University of Arizona), Alyson Leah Lavigne (Roosevelt University), and Huaping Sun (American Board of Anesthesiology) seek to explain why so many American students have difficulty with algebra. Traditionally this course was seen as a way of weeding out "untalented" students. In 1936, an anonymous writer bemoaned this separate-the-sheep-from-the-goats role: "If there is a heaven for school subjects, algebra will never go there. It is the one subject in the curriculum that has kept students from finishing high school, from developing their own interests…" In 2008, Kilpatrick and Izsak echoed this sentiment: "If anything has been constant, school algebra has too often been seen as a source of difficulty and failure – a gauntlet to be run rather than territory to be claimed."

There is now a broad consensus that algebra is a gateway to success in high school and college, and more students are taking it at an earlier age (15 percent of eighth graders in 1986, 30 percent in 2009). But the failure rate is still high, causing greater and greater concern. The U.S. doesn't have enough successful students in STEM subjects to fill the technical jobs in our 21st-century economy, leaving us dependent on recruiting talent from other countries. Algebra, say the authors, is at the center of this problem – our Achilles heel.

Good, Wood, Sabers, Olson, Kalinec-Craig, Lavigne, and Sun believe the failure of so many students in algebra classes goes back to students not mastering rational numbers in the upper-elementary grades. Why are rational numbers (fractions, decimals, and percents) so difficult? Because they "require entirely new ways of thinking about number relationships," say the authors. Unfortunately, many teachers "push ahead" with mathematics procedures without developing students' conceptual understanding. Here are some of the things that confuse students:

- The fact that a number can assume many forms and the same word can mean different things – for example, one half can mean ½, .5, or 3 out of 6;
- The relationship of the numerator and denominator – for example, many students don't understand why 1/56 is larger than 1/75;
- Rate of change;
- Putting decimals in order of size and generating sequential lists of decimals;
- Over-generalizing the rule for multiplying decimals;
- Understanding the invert-and-multiply rule (some students conclude that it's impossible to divide fractions since what they do is really multiplication);
- The misconception that multiplying always produces a larger answer and division always produces a smaller answer.

Students who have these confusions and misunderstandings won't understand how fractions, decimals, and percents are related and how these numbers can be used to understand the world around them.

Why is understanding rational numbers (especially fractions) so important to success in algebra? Because, say the authors, "moving into fractions represents the first opportunity for students to engage in the kinds of activity and reasoning that serve as foundations for algebra"

– for example, understanding proportional reasoning and ratios, going beyond the additive reasoning associated with whole numbers, and developing multiplicative reasoning (as when we reduce a picture to 2/3 of its original size). Fractions involve abstract reasoning and generalizations "that define algebra," say the authors. "As students become familiar and fluent with fraction computation, they can begin to generalize patterns of behavior with fractions, noticing how, for example, equivalent fractions can be generated by multiplying the numerator and denominator of any fraction by the same number. As students realize these general rules with fractions, they can start to represent numbers with variable symbols, making sense of how a/b represents any fraction. This combination of generalization and symbolic notation sets the foundation for algebra…"

If all this is true, say Good, Wood, Sabers, Olson, Kalinec-Craig, Lavigne, and Sun, the key is teaching rational numbers more effectively in the upper-elementary grades. So they designed a PD program for one large district's grade 3-5 teachers to see if it would produce better student achievement. The seven 90-minute workshops were designed to fine-tune teachers' approach to rational numbers, emphasizing ways to build students' skills and conceptual understanding and help them concretely see and understand the math they were studying. Here are the guiding questions of the program:

- What are fractions, decimals, and percents?
- How do we compute with them?
- How do we solve problems with them?
- Can we relate them to what we do in and out of school?
- How do we order and see better in our daily lives with rational numbers?
- How do fractions, decimals, and percents go together, and why do we use all three?
- What is the language of rational numbers?

The researchers designed the program in collaboration with local teachers, focusing on what seemed to be the most common difficulties students have with rational numbers.

Two things the researchers noticed as they worked with teachers was that they received state standardized test results too late in the year to use them to improve instruction, and when they did get test results, the data were spread over so many mathematical topics that teachers didn't get a coherent picture of students' conceptual and procedural knowledge of fractions, decimals, and percents. So the researchers administered a diagnostic test to students early in the year, gave teachers printouts on which specific items students got wrong, highlighting patterns of incorrect responses and misconceptions, and led team discussions on how these problems could be overcome in classrooms.

What was the impact of the program? Pre- and post-test data showed students in these classrooms made significant gains in their mastery of rational numbers – and that was true at all three grades and across SES lines. Their only worry was that higher-SES students made greater gains than lower-SES students, resulting in a slight widening of the achievement gap. But the overall picture was very positive: within a single school year, in a large district, students made significant progress in rational numbers, paving the way (the authors believe) for future success in algebra (that study has yet to be conducted).

Good, Wood, Sabers, Olson, Kalinec-Craig, Lavigne, and Sun close with a humble statement about what might have caused these gains. The nine workshops were undoubtedly important, but three other factors may have played a part: (a) providing teachers with detailed, helpful pre-test information on students' proficiency in rational numbers; (b) focusing special attention and additional classroom time on rational numbers; and (c) involving teachers in the planning and execution of the workshops, which signaled respect and improved credibility and teacher buy-in.

"Strengthening Grade 3-5 Students' Foundational Knowledge of Rational Numbers" by Thomas Good, Marcy Wood, Darrell Sabers, Amy Olson, Alyson Leah Lavigne, Huaping Sun, and Crystal Kalinec-Craig in *Teachers College Record*, June 2013 (Vol. 115 # 7, p. 1-45), https://library.villanova.edu/Find/Summon/Record?id=FETCH-proquest_dll_29133685311

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***Do you have feedback? Is anything missing?***

*If you have comments or suggestions, if you saw an article or web item in the last week that you think should have been summarized, or if you would like to suggest additional publications that should be covered by the Marshall Memo, 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 others very well-informed on current research and effective practices in K-12 education. Kim Marshall, drawing on 43 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 44 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).

### *Subscriptions:*

Individual subscriptions are $50 for the school year. Rates decline steeply for multiple readers within the same organization. See the website for these rates and information on paying by check or credit card.

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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
ASCA School Counselor
ASCD SmartBrief/Public Education NewsBlast
Better Evidence-Based Education
Center for Performance Assessment Newsletter
District Administration
ED Magazine
Education Digest
Education Gadfly
Education Next
Education Update/Curriculum Update
Education Week
Educational Evaluation and Policy Analysis
Educational Horizons
Educational Leadership
Educational Researcher
Edutopia
Elementary School Journal
Essential Teacher
Go Teach
Harvard Business Review
Harvard Education Letter
Harvard Educational Review
Journal of Education for Students Placed At Risk (JESPAR)
Journal of Staff Development
Kappa Delta Pi Record
Knowledge Quest
Middle Ground
Middle School Journal
NASSP Journal
NJEA Review
Perspectives
Phi Delta Kappan
Principal
Principal Leadership
Principal's Research Review
Reading Research Quarterly
Reading Today
Responsive Classroom Newsletter
Rethinking Schools
Review of Educational Research
School Administrator
Teacher
Teachers College Record
Teaching Children Mathematics
Teaching Exceptional Children/Exceptional Children
The Atlantic
The Chronicle of Higher Education
The District Management Journal
The Language Educator
The Learning Principal/Learning System/Tools for Schools
The New York Times
The New Yorker
The Reading Teacher
Theory Into Practice
Time
Wharton Leadership Digest