

Marshall Memo 914

A Weekly Round-up of Important Ideas and Research in K-12 Education
December 6, 2021

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Quotes of the Week

“Most people do not learn concepts the first time they are introduced.”

John McCarthy (see item #3)

“We tend to view confusion as a bad thing, but confusion is often at the heart of learning.”

John Spencer (see item #1)

“Don’t help too quickly. If your first response is doing something *for* someone, you are teaching people to depend on you, not themselves.”

Dan Rockwell in [“7 Rules for Overhelpful Leaders”](#) in *Leadership Freak*, Dec. 2, 2021

“We want students to see that failing is a necessary part of the messy, idiosyncratic learning process.”

John Spencer (*ibid.*)

“As a black child growing up in the Midwest in the early 2000s, I remember cringing with discomfort while reading *Huckleberry Finn* and *The Sound and the Fury*.”

Amanda Calhoun (see item #5)

“Disproving a stereotype is a Sisyphean task, something you have to do over and over again as long as you are in the domain where the stereotype applies.”

Claude Steele (see item #6)

“People don’t resist change; they resist being changed.”

Peter Bregman and Howie Jacobson in *You Can Change Other People* (Wiley, 2021)

“Who on the front lines of schooling has time to delve deeply into education research?”

David Steiner (see item #7)

1. Should School Be More Confusing?

“We tend to view confusion as a bad thing,” says social studies educator John Spencer in this online article, “but confusion is often at the heart of learning.” Two classroom examples: students try to figure out how a ship got buried deep underground in the middle of San Francisco; students speculate about how the people of ancient Syracuse managed to defend themselves during a siege by the Roman army. In both cases, kids wrestled with uncertainty before reading accounts of what actually happened (in the case of the siege of Syracuse, there were conflicting accounts) and drawing conclusions.

“This process invites students to embrace the confusion of history,” says Spencer. “They learn that being a historian isn’t about memorizing names, dates, and other facts. Instead, it’s about confusion and discovery. It’s about posing a hypothesis and testing it out with facts... It pushes you to slow down and think deeper. The struggle to figure things out means the learning sticks... This process often leads you into a place of nuanced understanding of truth.”

Ironically, he says, when students listen to a simple video explaining something in a straightforward manner, they think they have grasped the concept at a deep level. In fact, they haven’t; their overconfidence masks superficial understanding. When the same students watch a video that includes strategic confusion – in which they’re pushed to make and test a hypothesis – they’re less confident about what they know, but actually have a higher level of engagement and deeper retention.

Spencer suggests four ways teachers can use strategic confusion to good effect in their lesson plans:

- *Present mysteries.* Students get scenarios or questions without solutions and have to generate hypotheses, design experiments or simulations, do research, and present their conclusions. An example: why does a laptop feel icy cold when the table it’s sitting on feels warm? Are they actually the same temperature? Another: why did toxic algae grow in a town’s water supply, making it undrinkable for a whole summer?

- *Don’t shy away from confusing material.* Spencer urges teachers to avoid simplistic explanations and graphics – for example, saying that plants turn our breath into food, using oversimplified renderings of the water cycle, and teaching only one correct way to solve a math problem.

- *Allow for mistakes.* “We want students to see that failing is a necessary part of the messy, idiosyncratic learning process,” says Spencer. “Fail-ure is permanent, fail-ing is temporary... Here students see that being ‘wrong’ is actually what scientists, historians,

engineers, and mathematicians do on a regular basis... intentionally holding back on a definitive answer.”

• *Embrace student inquiry.* Get students to ask lots of questions, dive into the subject matter, and try out different answers.

[“How to Use Strategic Confusion for Deeper Learning”](#) by John Spencer, September 7, 2021, also available as a podcast

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2. Can Project-Based Learning Work in AP Courses?

In this *Phi Delta Kappan* article, Anna Rosefsky Saavedra (University of Southern California) and seven colleagues say that Advanced Placement classes have major equity challenges in two areas: participation and outcomes. They point to participation data over the last two decades – improved, but still concerning:

- High-school graduates who took at least one AP exam increased from 20% to 40%.
- AP exam takers from low-income families increased from 11% to 30%.
- Participation by Hispanic students increased from 9.8% to 22.6%, African Americans from 4.4% to 6.3%, Asian Americans from 13.3% to 15.7%, other from 6.1% to 6.3%.
- AP participation for Native American students decreased from 0.4% to 0.3%.

With outcomes, there were stark differences in the percent of subgroups scoring 3 or higher on AP exams: more than 60% of Asian-American, white, and other students scored at that level, while far smaller percentages of Latino, African-American, and Native American students did so. “This entails not just an educational disappointment,” say Saavedra et al., “but also a financial blow, since these students miss out on the chance to accumulate college credits and reduce their overall tuition costs.”

Why is there such a big AP achievement gap? The researchers point to variations in the quality of curriculum and teaching that different students experience in the years prior to enrolling in AP courses. Some students have already been exposed to the kinds of problems and work featured in AP exams, and they tend to thrive in Advanced Placement classes. Other students don’t acquire foundational knowledge and skills and struggle with AP content.

Another factor, say the authors, is the lecture-based pedagogy used by many Advanced Placement teachers, who believe this is the most efficient way to cover vast amounts of material in time for the exams. Teacher-centered instruction works to the disadvantage of students who didn’t benefit from strong instruction in earlier grades; one student described the AP experience as “sitting in a class and taking notes, and then I don’t understand those notes, and then fail the test and so on.”

There’s a belief among many high-school educators that students who have been underserved through the grades won’t be successful in classrooms using project-based, self-directed learning. Disadvantaged students need traditional, teacher-centered instruction, the argument goes, to build up their basic skills and acquire more content knowledge – especially

in high-stakes AP courses. Besides, say concerned teachers, these students may be sleep- and nutrition-deprived and dealing with other life challenges.

Could using more-engaging pedagogy in Advanced Placement courses reverse this pattern? Is it even possible, given the amount of material AP teachers need to cover? Saavedra and her colleagues addressed those questions in their study of Advanced Placement U.S. Government and Environmental Science courses in five school districts with diverse student populations (the high schools did not have prerequisites for enrolling in AP courses). The study compared randomly assigned groups of students in traditional lecture-based classes with students enrolled in the Knowledge in Action (KIA) program, which taught the same AP content in ways that got students:

- Engaged in classroom discussions and debates;
- Working on projects in groups;
- Providing feedback to peers;
- Learning time-management skills;
- Practicing leadership;
- Refining verbal and written communication skills.

(Free materials for these two courses, AP Physics, and other curriculum are available [here](#).)

The results of the study were as follows:

- *AP exams* – The percentage of students scoring 3 or above in U.S. Government and Environmental Science was significantly higher among those in the Knowledge in Action classes than lecture-based. This was true across all five districts, for lower- and higher-income students, and for all racial/ethnic subgroups.

- *Teacher reactions* – “Teachers reported that using student-centered methods required a significant shift in their practice,” say Saavedra et al. It was especially difficult for them to facilitate group work and pace the curriculum through the school year. Nevertheless, 96 percent of teachers who used Knowledge in Action and responded to a survey said they recommended a project-based learning approach.

- *Student reactions* – Kids said the Knowledge in Action classes required a lot more mental sweat, and at first they didn’t feel prepared to take that amount of responsibility for their own learning. Students sometimes asked teachers to return to lecture style so they could “rest” between projects.

- *Quick results* – It didn’t take years of training and experience for teachers to produce impressive student results. There was significant professional development: teachers who used Knowledge in Action attended a four-day summer institute, four full-day trainings during the year, on-demand virtual coaching, and the benefit of a community of peers going through the same experience. “Our research suggest that the ongoing and job-embedded nature of the professional learning in the first year was a likely contributor to this early success,” say Saavedra et al. They report that the program continued to be successful the following year without heavy PD – although some teachers continued to support one another through informal networks.

- *Lifting all boats* – The most striking finding of their study, Saavedra and her colleagues believe, is that students across the board benefited from the Knowledge in Action curriculum and pedagogy. “For teachers who are already interested in shifting their practice toward project-based learning,” they conclude, “this study shows they have good reasons to do so. And for those teachers who have reservations, this study suggests that it’s time to put those reservations aside.”

[“Project-Based Learning in AP Classes”](#) by Anna Rosefsky Saavedra, Amie Rapaport, Kari Lock Morgan, Marshall Garland, Ying Liu, Alyssa Hu, Danial Hoepfner, and Shira Korn Haderlein in *Phi Delta Kappan*, November 2021 (Vol. 103, #3, pp. 34-38); Saavedra can be reached at asaavedr@usc.edu.

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3. “Keepers” from the Pandemic

In this article in *Edutopia*, consultant John McCarthy says there are three classroom practices from our months of remote instruction that teachers might consider continuing in their in-person classrooms:

- *A virtual learning platform* – Schoology, Canvas, Google Classroom, and others give students and parents 24/7 access to lesson plans, assignments, scheduled sessions, deadlines, texts, and other resources. Students can also have glossaries, explanations (video, audio, or text), and scaffolds at their fingertips, including when they’re physically in the classroom.

- *An instructional video library* – “Most people do not learn concepts the first time they are introduced,” says McCarthy. “Sometimes what made sense during the live instruction does not seem as clear later that night or the following day.” Rather than endlessly repeating things, teachers can make videos or recordings and give students access any time they need them. Creating videos is as easy as starting a screen-sharing session in Zoom, Google Meet, or Teams and clicking the Record button.

- *Leveraging collaboration* – McCarthy suggests “three-dimensional learning experiences” inside and outside the classroom, with small groups of students putting their heads together (remotely or through headphones) and using a variety of resources to enrich collaboration. Teachers can also connect with colleagues within their school or around the world via Zoom calls and breakout rooms.

[“Bringing What Worked During Virtual Learning Into the Classroom”](#) by John McCarthy in *Edutopia*, November 30, 2021

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4. Sharing a Personal Dedication at the Beginning of Class

In this article in *Edutopia*, high-school teacher Henry Seton describes a “daily dedication” at the beginning of class in which he or a student spends 30-60 seconds honoring and celebrating a person, living or dead, real or fictional, who provides inspiration. Seton kicks

off the ritual at the beginning of the year with a statement about his father, accompanied by a photo:

I dedicate our learning today to my dad. He grew up working class in Baltimore, and when he was your age, his mother was dying of cancer. Every day after school he would have to come home and bathe her and clean her sores. Later, he became the first person in his family to attend medical school, and today he is a leading cancer doctor. He is one of the most humble, hard-working people I know.

Seton then explains the rationale for the ritual and says each day one student will do a dedication of their choosing. He starts with volunteers and then moves through the class in alphabetical order. “There are usually a few students who at least feign reluctance,” he says, “but my students are so brave; their dedications quickly get more vulnerable and powerful than mine.” After each one, classmates express their appreciation, Seton gives a quick participation grade (with bonus points for providing an image), and the class begins.

“Students love this ritual,” says Seton. “Often a student tracks the order for me, updates a corner of our whiteboard with who is on deck, and reminds us about this during daily class announcements. These brief moments become the seeds for deeper relationship building, starting points for future conversations. We know to ask about the cousin recovering from an auto accident, the favorite athlete’s recent playoff game, the older sibling in college. Some dedications become fuel for class inside jokes that we smile about all year. We now know what makes each other’s eyes light up.”

Seton posts the photos students bring in above the classroom door, and over the weeks they spill onto the classroom wall and the corridor outside. Some students touch their photo on the way into class. “Regardless of the age or demographics of your students,” he concludes, “I encourage you to give this powerful ritual a try. I believe it will bring so many benefits to your classroom culture and will hopefully catalyze stronger work than ever from your students.”

[“A Daily Ritual That Builds Trust and Community Among Students”](#) by Henry Seton in *Edutopia*, January 8, 2021; Seton can be reached at hseton@gmail.com.

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5. Another Perspective on Curriculum Choices

In this online *Phi Delta Kappan* article, psychiatry resident Amanda Calhoun (Yale University) says something is missing in the current debate about critical race theory and whether Toni Morrison’s novel *Beloved* should be on high-school reading lists: the books that aren’t being challenged. Calhoun recalls that when she was a student, the required reading included novels that showed black people “in a dehumanizing, inaccurate light” and history books that glossed over racial violence and generally portrayed white people as settlers, inventors, and heroes.

“As a black child growing up in the Midwest in the early 2000s,” she says, “I remember cringing with discomfort while reading *Huckleberry Finn* and *The Sound and the Fury*. I fumed as I listened to my white English teachers shower Mark Twain and William Faulkner with praise. I could not wrap my mind around how these authors could possibly be so highly

acclaimed when the black characters they created in their novels were so inaccurate and offensive” – Calpurnia in *To Kill a Mockingbird*, Dilsey in *The Sound and the Fury*, Sambo in *Uncle Tom’s Cabin*, Jim in *Huckleberry Finn*. Each time a teacher introduced a new novel, Calhoun silently hoped there would be no black characters.

“Reporters continue to cover stories centering on whether teaching about racism will make white children feel bad about being white,” Calhoun concludes. “There is a need for news stories that center the anger and sadness that black children and parents endure while reading most schoolbooks that were never banned or challenged – and are, in fact, praised.”

[“Book Controversy Coverage Is Missing the Mark”](#) by Amanda Calhoun in *Phi Delta Kappan*, December 1, 2021

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6. Claude Steele on Counteracting Stereotype Threat

In his pathbreaking 2010 book *Whistling Vivaldi*, social psychologist Claude Steele (Stanford University) explores how stereotype threat works. People who are aware of a negative belief about their group’s ability compared to that of other groups tend to perform less well. This is especially true in high-stakes situations – for example, women sitting for a mathematics or science exam with male classmates, white sprinters at the starting line with African-American competitors. Stereotype threat gets into people’s heads even when they know perfectly well that the “rumor of inferiority” isn’t true. This dynamic undermines the performance of a wide variety of groups – including the academic achievement of African-American students.

“Disproving a stereotype is a Sisyphean task,” says Steele, “something you have to do over and over again as long as you are in the domain where the stereotype applies.” In competitive situations, side by side with members of other groups, “people are not only coping with the manifest tasks of the situation, but are also busy appraising threat and protecting themselves from the risk of being negatively judged and treated. Perhaps the chief discovery of our research is that this protective side of the human character can be aroused by the mere prospect of being negatively stereotyped, and that, once aroused, it steps in and takes over the capacities of the person – to such an extent that little capacity is left over for the work at hand. It shows that this side of the human character, aroused in this way, affects our thoughts, emotions, actions, and performances in ways that have nothing to do with our internal traits, capacities, motivations, and so on, and that these effects contribute importantly to group differences in behavior, ranging from math performance to the interest shown in interracial conversations to playing golf.”

Steele believes that knowing how to address this dynamic “is an increasingly important skill for our teachers, managers, and leaders. It’s not clear whether, without these skills, they could be effective in the increasingly diverse settings of our society.”

Steele and other researchers have identified several interventions that can successfully counteract the impact of stereotype threat, among them:

- Having students affirm in writing their most valued sense of self;

- Helping students develop a narrative about their academic setting that explains their frustrations while projecting positive engagement and success in the setting;
- Ensuring effective teaching, without which many of the academic interventions do not gain traction;
- When giving students critical feedback, teachers and coaches accompany it with a clear statement of high expectations and the belief that the student can measure up;
- In academic settings, orchestrating a critical mass of a stereotyped group to improve its members' trust, comfort, and performance;
- Encouraging study groups of same-gender or same-race students;
- Telling students that tests are not designed to see how smart they are, but to allow them to demonstrate how much they have learned;
- Just before a high-stakes situation, having stereotyped students think about important role models;
- Fostering conversations among students of different backgrounds.

“The effectiveness of these strategies is not an argument for neglecting structural and other changes that would help unwind the disadvantages attached to racial, gender, class, and other identities in our society,” Steele concludes. “Such changes have to remain an important focus. But we can make a good deal of progress by addressing identity threats in our lives. And doing so is a big part of unwinding the disadvantages of identity.”

Whistling Vivaldi by Claude Steele (Norton, 2010)

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7. Six Things to Look for When Sizing Up K-12 Research

“Who on the front lines of schooling has time to delve deeply into education research?” asks David Steiner (Johns Hopkins University) in this article in *Phi Delta Kappan*. “The answer is obvious – hardly anyone.” But school leaders’ lack of time is only part of the research-practice gap. Equally to blame, says Steiner, is the inaccessibility of much K-12 research: technical language, opaque prose, narrow focus, researchers writing for researchers, and lack of action orientation. In addition, some front-line educators may not *want* to look at research because their minds are already made up about the programs and approaches they want to implement.

These problems notwithstanding, Steiner believes it’s possible for principals, teacher leaders, and superintendents to quickly and efficiently evaluate research on teaching practices, classroom interventions, and instructional tools. Here’s his checklist:

- *Effect size* – Researchers use this as the standard measure of effectiveness – for example, 0.20 equates to 20% of a standard deviation. One doesn’t need to be a statistician, says Steiner, to know that an effect size of 0.20 is bigger than 0.02.
- *Grade level* – Effect size by itself is not enough to evaluate a program or intervention; it’s also important to know the grade level at which the study was done. A program with an effect size of 0.20 for kindergarteners has a much smaller impact than a program with an effect

size of 0.20 for eleventh graders. This is because students make statistically bigger gains in the early grades than they do when they are older, making 0.20 a bigger gain in the upper grades than for primary-grade students.

- *Research design* – We need to know if the study was (a) correlational (the impact of the intervention was associated with an improvement in student outcomes but didn't necessarily cause it); (b) quasi-experimental (researchers looked at additional data on the students being studied); or (c) randomized control trial (looking at two similar groups of students, one getting the intervention, the other not, and controlling other variables, thereby showing causation).

- *Scale* – Randomized control trials are considered the gold standard of research, but the size of the sample is important. “A small RCT in an unusual district,” says Steiner, “may not be as reliable as a large quasi-experimental study from many states or districts.”

- *Statistical significance* – The lower the “p-value” of a study, the lower the chance that the effect of the intervention was due to mere chance – a p-value of 0.02 means there's a 98 percent likelihood that the intervention was responsible for the student outcomes measured. The larger the sample size, the better the chance that it will mirror the larger student population, with individual flukes and outliers not distorting the findings. Steiner believes a p-value of 0.1 or 0.15 (a 90% or 85% likelihood that the intervention made a difference) is perfectly acceptable.

- *Cost-effectiveness* – A study might be at the appropriate grade level and do well on effect size, research design, scale, and statistical significance, but if the intervention is very expensive, a cheaper alternative might be a better choice.

“You now know more about research findings,” Steiner says to his readers, “than the 95% of educational administrators who haven't read this piece.”

[“Make Sense of the Research: A Primer for Educational Leaders”](#) by David Steiner in *Phi Delta Kappan*, November 2021 (Vol. 103, #3, pp. 43-47); Steiner can be reached at d.steiner@jhu.edu.

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8. Outstanding Children's Fiction Books

In this column in *Language Arts*, Desiree Cueto and six colleagues showcase the 2021 Charlotte Huck Award winner and the honor and recommended books for outstanding fiction for children:

- *I Am Every Good Thing* by Derek Barnes, illustrated by Gordon James (winner)
- *We Are Water Protectors* by Carole Lindstrom, illustrated by Michaela Goade
- *When Stars Are Scattered* by Omar Mohamed and Victoria Jamieson, illustrated by Iman Geddy
- *Land of the Cranes* by Aida Salazar
- *A High Five for Glenn Burke* by Phil Bildner
- *Quintessence* by Jess Redman
- *When You Trap a Tiger* by Tae Keller

- *Ways to Make Sunshine* by Renee Watson
- *Hike* by Pete Oswald
- *The Blackbird Girls* by Anne Blankman
- *The Arabic Quilt* by Aya Khalil, illustrated by Anait Semerdzhyan
- *Alice's Farm* by Maryrose Wood
- *Efrén Divided* by Ernesto Cisneros
- *Braver: A Wombat's Tale* by Suzanne Selfors and Walker Ranson

[“2021 Charlotte Huck Award for Outstanding Fiction for Children”](#) by Desiree Cueto, Patrick Andrus, Donna Bulatowicz, Dahlia Constantine, Cecilia Espinosa, Holly Johnson, and Irene Latham in *Language Arts*, November 2021 (Vol. 99, #2, pp. 137-143)

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9. Short Item:

A Museum Goes Online – The Smithsonian National Museum of African-American History and Culture has launched a [digital platform](#) giving free access to a trove of interactive stories, images, and videos from the museum.

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About the Marshall Memo

Mission and focus:

This weekly memo is designed to keep principals, teachers, superintendents, and other educators very well-informed on current research and effective practices in K-12 education. Kim Marshall, drawing on 50 years' experience as a teacher, principal, central office administrator, writer, and consultant lightens the load of busy educators by serving as their "designated reader."

To produce the Marshall Memo, Kim subscribes to 60 carefully-chosen publications (see list to the right), sifts through more than a hundred articles each week, and selects 5-10 that have the greatest potential to improve teaching, leadership, and learning. He then writes a brief summary of each article, pulls out several striking quotes, provides e-links to full articles when available, and e-mails the Memo to subscribers every Monday evening (with occasional breaks; there are 50 issues a year). Every week there's a podcast and HTML version as well.

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Core list of publications covered

Those read this week are underlined.

All Things PLC
American Educational Research Journal
American Educator
American Journal of Education
American School Board Journal
AMLE Magazine
ASCA School Counselor
Cult of Pedagogy
District Management Journal
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
Exceptional Children
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
Learning for Justice (formerly Teaching Tolerance)
Literacy Today (formerly Reading Today)
Mathematics Teacher: Learning & Teaching PK-12
Middle School Journal
Peabody Journal of Education
Phi Delta Kappan
Principal
Principal Leadership
Psychology Today
Reading Research Quarterly
Rethinking Schools
Review of Educational Research
School Administrator
School Library Journal
Social Education
Social Studies and the Young Learner
Teachers College Record
Teaching Exceptional Children
The Atlantic
The Chronicle of Higher Education
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
Urban Education