Marshall Memo 722

A Weekly Round-up of Important Ideas and Research in K-12 Education
February 5, 2018

In This Issue:

Quotes of the Week

"It's fundamentally unfair for kids who start out already having chaos in their home lives to end up in schools that are ill-equipped to meet their needs."

Jessica Nauiokas in "Fostering Independence, One Student at a Time" by Ting Yu in *One Day*, Winter 2018 (Vol. XXXI, p. 36-41), http://bit.ly/2EeeWqB; Nauiokas can be reached at jnauiokas@havenacademy.org.

"Democracy requires civil discourse in which individuals listen to others, even if they disagree; defend their viewpoints with evidence, reason, or personal experience; recognize valid disagreements; reconsider positions in light of new evidence; and compromise in the interest of the common good."

Margaret Crocco, Anne-Lise Halvorsen, Rebecca Jacobsen, and Avner Segall (see #1)

"Without explicit support and guidance from the teacher, classroom deliberations tend to become chaotic shouting matches."

Margaret Crocco, Anne-Lise Halvorsen, Rebecca Jacobsen, and Avner Segall (*ibid*.)

"[I]t is not uncommon for students to feel confident that they have mastered a body of knowledge and skills before they go into an assessment, only to be dismayed by a poor performance revealing that their sense of control over content and skills was much weaker than they realized."

Jonathan Cassie (see item #5)

"Our district was determined to move away from multiple-choice testing and the 'deliver and recall' teaching methods it tends to foster."

Doug Wren and Amy Cashwell (see item #2)

1. Teaching Students to Be Civil in Classroom Debates

In this article in *Phi Delta Kappan*, Margaret Crocco, Anne-Lise Halvorsen, Rebecca Jacobsen, and Avner Segall (Michigan State University) report on their study of high-school students' classroom discussions. "Democracy," say the authors, "requires civil discourse in which individuals listen to others, even if they disagree; defend their viewpoints with evidence, reason, or personal experience; recognize valid disagreements; reconsider positions in light of new evidence; and compromise in the interest of the common good." But this is a challenging goal when the culture outside of schools is as polarized and contentious as it is today, and it's even more elusive when teachers don't prepare their students for civil discourse. "Without explicit support and guidance from the teacher," say the researchers, "classroom deliberations tend to become chaotic shouting matches."

Observing four high-school classes debating immigration policy and Internet privacy, Crocco, Halvorsen, Jacobsen, and Segall noticed that:

• *Students used evidence selectively and fell victim to confirmation bias*. Each class was provided with carefully curated packets of information, but students quickly dismissed what didn't comport with their own views and personal stories and introduced outside sources of information, some of which contained false and unsupported claims. Teachers had difficulty calling out and correcting misinformation, and even when students acknowledged their teachers' corrections, they quickly reverted to their fixed positions.

• *Students didn't listen to classmates or treat them as resources for learning*. Rather, they talked past each other, sticking to their original views and using debates to assert the superiority of their positions.

• *Male students tended to dominate discussions*. Males spoke more often, and their debating style (rationalistic and statistics-based) often swamped arguments and stories that were relational and affective.

• *Teachers varied in their attempts to facilitate discussions*. All four set "rules" up front, but three of the teachers were quite passive during discussions. "This approach," say the researchers, "provided students greater freedom but also led to missed opportunities to clarify misconceptions, ensure students' points were understood, or refocus students' attention to the evidence provided."

From their observations, Crocco, Halvorsen, Jacobsen, and Segall suggest the following strategies for improving the quality of classroom discussions:

- Establish an equitable, fair classroom culture. Schools are "the first and perhaps the best opportunity to help young people build a sense of community," say the authors.
- Ask students to help define the ground rules for a respectful exchange of ideas, "building a civil classroom climate through the very process of defining it." Watching video exemplars of civil and uncivil discussions can be very useful.
- Select topics carefully. Debates should be on issues that intrigue students and provoke differing responses. Resources include National Issues Forum www.nifi.org, Choices www.choices.edu, and ProCon https://www.procon.org.
- Ease slowly into classroom discussions. The authors recommend "warm-ups" in which students carefully read background materials, turn and talk with classmates about initial reactions and questions, and engage in prewriting exercises to flesh out their thoughts.
- Vary the format. For example, students might be asked to argue in a whisper or rephrase a classmate's point before offering their own.
- Go beyond pro and con. This might include getting undecided students to articulate nuanced positions and seek common ground.
- Be an active facilitator. "Teachers should be ready and willing to intervene in classroom deliberations," say Crocco, Halvorsen, Jacobsen, and Segall, "not to express their own opinions but to remind students to follow their own rules of discussion, help them defuse tensions, call attention to factual misunderstandings, and, especially, to make sure that competing perspectives are offered and heard."

"Less Arguing, More Listening: Improving Civility in Classrooms" by Margaret Crocco, Anne-Lise Halvorsen, Rebecca Jacobsen, and Avner Segall in *Phi Delta Kappan*, February 2018, http://www.kappanonline.org/crocco-less-arguing-listening-improving-civility-classrooms/; the authors can be reached at croccom@msu.edu, annelise@msu.edu, rjacobs@msu.edu, and avner@msu.edu.

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2. A Virginia District Develops Student Performance Tasks

(Originally titled "Mission Possible: Measuring Critical Thinking and Problem Solving")

In this *Educational Leadership* article, Virginia Beach City Schools officials Doug Wren and Amy Cashwell describe the district's decision to use performance assessments to promote and measure students' critical thinking, problem-solving, and writing skills. "Our district was determined to move away from multiple-choice testing," say Wren and Cashwell, "and the 'deliver and recall' teaching methods it tends to foster."

Early on, curriculum leaders developed a four-level rubric tied to these brief statements of student competency:

- Critical thinking – Decides if the information is correct and believable.
- Problem solving – Makes a choice and gives reasons for the choice.
- Written communication – Presents information and ideas that are clear, organized, detailed, and written for the intended audience.

The College and Work Readiness Assessment served as an off-the-shelf assessment at the high-school level, and as a model for locally-generated performance tasks for grades 4 and 7, given twice a year. The goal was to give students challenging, engaging, real-life scenarios accompanied by realistic artifacts and data. Here's a sample from fourth grade:

> *You are a 4th-grade student at Smith Elementary School. A local business wants to give your school money to help improve health for all the students. The money will be used to pay for only one of these projects: An outdoor fitness course at the school or a fruit and salad bar for the lunchroom. Some students want a fitness course and some want a fruit and salad bar… The school cannot have both. Your principal, Mr. Beach, wants your help making a choice.*

Students are asked to read several items – data on playground injuries, a news story on the benefits of fruit and salad bars, an advertisement for outdoor fitness courses – and then write a letter to the principal advocating for their choice. This task has all six elements of the Wiggins/McTighe GRASPS acronym: Goal, Role, Audience, Situation, Product, and Standards (the rubric used to score students' work).

Scoring hundreds of student responses was a challenge, especially given the importance of inter-rater reliability (different scorers giving the same student response a similar score) and intra-rater reliability (any scorer giving a student response the same score on a different day) and the cost of training and paying teacher scorers. The fall assessments were regarded as low-stakes and scored at schools by teachers after some training. The spring assessments were scored centrally by more highly trained educators, since the results were released publicly and used to measure the district's progress on strategic goals. It took a few years to work out the kinks in the scoring process, with teachers working in teams supervised by a trained teacher. The district also found that it was best for each reader to focus on one rubric area. Inter-rater agreement rose to 66-82 percent.

Recently Virginia Beach started using a computerized system, the Turnitin Scoring Engine. Once the software has been "trained" by feeding in 500 human-scored performance tasks, it has proved as reliable as teacher scoring and saved money and time for teachers to look at their students' work and apply lessons to teaching.

What has been the impact of this seven-year initiative? Wren and Cashwell report that the district-wide performance assessments have not only given everyone detailed information on students' critical thinking, problem-solving, and writing skills over time, but have also influenced teachers' daily practices, with more emphasis on getting students to process information, solve real-life problems, and express their thoughts in writing.

"Mission Possible: Measuring Critical Thinking and Problem Solving" by Doug Wren and Amy Cashwell in *Educational Leadership*, February 2018 (Vol. 75, #5, p. 70-75), available for purchase at http://bit.ly/2FPtHgx; the authors can be reached at douglas.wren@vbschools.com and amy.cashwell@vbschools.com.

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3. Thomas Guskey on the Effective Use of Pre-Assessments

(Originally titled "Does Pre-Assessment Work?")

In this article in *Educational Leadership*, assessment guru Thomas Guskey (University of Kentucky) takes a close look at the mixed evidence on pre-assessments. On the positive side, they can give teachers important information on students' incoming knowledge and skills, link new content to students' prior experiences, and serve as a baseline for measuring progress. On the negative side, pre-assessments can waste classroom time telling teachers what they already know, give students a failure experience at the beginning of a curriculum unit, and (where pre- and post-test data are used for high stakes) invite students to game the system by putting little effort into the pre-assessment and then doing their best on the post-assessment. "Similarly," says Guskey, "when teachers are held accountable for student gains or are involved in value-added models of evaluation, ensuring that students do poorly on the pre-test enhances their chances of success."

While there's not a lot of research on the efficacy of pre-assessments, Guskey believes there are several helpful ways teachers can gather information on students prior to instruction:

- Cognitive – measuring what students currently know and can do;
- Affective – measuring students' attitudes, beliefs, dispositions, and interests;
- Behavioral – for example, measuring athletic or musical proficiencies or the ability to work collaboratively;
- Prerequisites – measuring what students need to know to be successful in a new unit;
- Potential pitfalls – measuring common misconceptions and misunderstandings;
- Preview – showing students what they will be learning in a curriculum unit.

Are pre-assessments worth the time and effort? It depends, says Guskey, on whether teachers use them sparingly and strategically and avoid the pitfalls mentioned above.

Guskey does cite a 1983 study that found dramatic improvements by combining effective use of pre-assessments with mastery learning (using frequent formative assessments to identify learning problems and immediately follow up). Fernando Leyton-Soto worked with inner-city teachers of high-school math and world language courses in which specific entering skills and knowledge were important to student success (e.g., Algebra I for Algebra II). All the teachers gave a brief pre-assessment of prerequisite skills and four groups of students were then each given a different treatment. Here are the four approaches and the percent of students who achieved mastery on a comprehensive final exam after instruction:

- Group 1 did not address prerequisites and conducted business as usual – 8% mastery
- Group 2 taught the prerequisites and then used traditional methods – 28%
- Group 3 didn't address the prerequisites but used mastery learning strategies – 43%
- Group 4 addressed the prerequisites and implemented mastery learning – 61%

It's remarkable that teachers who made good use of pre-assessment data and used mastery learning got seven times more students to mastery on a rigorous exam than the control group. This is a best-case scenario and suggests an optimal way to use pre-assessments in conjunction with another proven classroom approach.

"Does Pre-Assessment Work?" by Thomas Guskey in *Educational Leadership*, February 2018 (Vol. 75, #5, p. 52-57), available for purchase at http://bit.ly/2E2PCo4; Guskey can be reached at guskey@uky.edu.

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4. Carving Out Time for Teacher Team Collaboration

In this Education Resource Strategies (ERS) white paper, David Rosenberg, Rob Daigneau, and Melissa Galvez report on the huge difference in the amount of common planning time teacher teams are given in most U.S. schools compared to high-performing systems around the world – 2 percent of teacher time in the U.S. versus as much as 35 percent in British Columbia, Shanghai, Singapore, and Hong Kong. There are exceptions in the U.S.: authors contrast the 45 minutes of weekly collaborative planning time in most U.S. districts with 300 minutes a week in the Achievement First charter schools.

Rosenberg, Daigneau, and Galvez suggest that school and district leaders should do an inventory of the amount of time that "shared-content" teacher teams (those teaching the same or very similar content) have for collaboration. Time for "shared-student" teams (same students, different content), standard professional development, and other duties shouldn't be counted in this inventory because they don't have nearly as much instructional impact. The gold standard, the authors believe, is at least 90 consecutive minutes for shared-content teams each week – enough for teachers to get into deep conversations, review data, examine effective and ineffective practices, refine upcoming units and lessons, practice, and do the kind of group work that has a direct impact on the quality and rigor of daily instruction.

"Of course, teams need more than just time with peers who teach the same content," say Rosenberg, Daigneau, and Galvez; "they require expert support to guide the team through rigorous lessons, as well as access to student data, sample agendas, and protocols that guide the conversation. Teams also need to operate within a professional adult culture that encourages learning and sharing. But without enough time, these other substantial investments often fall flat." Here are six ways that schools create blocks of time for team collaboration (the full paper – see link below – has case studies of schools with each configuration):

• *Back-to-back* – Stacking two blocks of planning time together to create 90 minutes of uninterrupted time. Considerations: This may mean teachers don't have a planning block one day of the week, and schools must ensure that teachers have duty-free lunch or other non-instructional time every day.

• *Banking time* – Reduce planning time on a few days to increase time on another day. Consideration: This is useful when teachers have at least 40 minutes of planning time each day, to ensure shortened blocks are still useful.

• *Beginning and end of the day* – Reorganize time that teachers have at opening and closing time into more team planning time. Considerations: Useful when teachers are mandated to arrive before and depart after students; staff may need to arrive earlier or stay later on certain days under this model.

• *Recess and lunch* – Schedule non-instructional blocks next to planning time and have other adults cover those activities. Considerations: Schools must have staff to cover recess and lunch and must ensure that teachers still have sufficient time to eat lunch.

• *Longer specials* – Increase the time that special subjects take so fewer special classes can cover more core teachers' time. Consideration: This works best when specials are not already at or near class-size limits.

• *Enrichment periods* – Create enrichment or intervention periods, covered by other adults, to open up teacher team planning time. Consideration: This is useful when schools have staff or community partners to cover enrichment periods effectively, not as a time filler.

"Finding Time for Collaborative Planning" by David Rosenberg, Rob Daigneau, and Melissa Galvez, Education Resource Strategies, January 2018, http://bit.ly/2BXmBUY; the authors are open to suggestions on school schedules that create blocks of professional collaboration time; you can send them to contact@erstrategies.org.

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5. Using Games to Check for Student Understanding

(Originally titled "Playing Games with Formative Assessment")

In this *Educational Leadership* article, California school curriculum director Jonathan Cassie sings the praises of "gamified" assessments that provide low-stakes, engaging ways for teachers to measure student learning in real time. "[I]t is not uncommon for students to feel confident that they have mastered a body of knowledge and skills before they go into an assessment," says Cassie, "only to be dismayed by a poor performance revealing that their sense of control over content and skills was much weaker than they realized… A well-designed game or gamified lesson is a customizable, persistence-reinforcing, socially stimulating, democratic, meritocratic, playful, and flow-aligned experience." The trick is creating a "magic circle" where students enjoy a metaphorical separation between the real world and the game space.

Cassie distinguishes between *game-based learning* – for example, a third-grade teacher getting students playing *Machi Koro* and building an ideal community by "buying" items like a family restaurant and a convenience store – and *gamified learning* – for example, students playing the game *7 Wonders* and taking on the role of leaders of ancient civilizations building one of the seven wonders of the world. Well-designed games are effective when they empower students to own their learning, are at the Goldilocks level of difficulty, help students persist when confronted with new obstacles, and encourage them to see mistakes and failures as feedback for improvement.

Cassie recommends that teachers look for games in online communities like Board Game Geek and Game Level Learn, matching games to classroom needs. He suggests the following:

- *Codenames* – A board game in which teams try to make contacts with their "secret agents" through word clues, suitable for any subject where recognizing patterns is key;

- *Letters from Whitechapel* – Students take on the role of Scotland Yard detectives tracking and arresting Jack the Ripper; the game measures and reinforces skills like collaboration and communication;
- *Zendo* – Can be used to tap students' critical thinking capacity;
- *Socrative* (free and paid options) – Provides games and other activities and collects granular data on student learning;
- *Kahoot!* (free and paid options) – Allows teachers to construct homework assignments almost as though they were video game-type quests;
- *Quizlet* www.quizlet.com – Allows teachers to convert data-gathering into a gamified form to check for student mastery;
- *Quizizz*– Lets teachers monitor the results of students' work as they do it;
- *Quizalize* (free and paid options) – Provides the same kinds of quizzes and assessments as other tools, but also lets teachers track the work of individual students;
- *Plickers* – Students hold up QR codes, orienting them to four different answer choices, which are then read by the teacher's smartphone.

"Playing Games with Formative Assessment" by Jonathan Cassie in *Educational Leadership*, February 2018 (Vol. 75, #5, p. 58-63), available for purchase at http://bit.ly/2GOSMtl

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6. How Much Should Students Struggle With New Content?

In this *Journal of Educational Psychology* article, Daniel Schwartz, Catherine Chase, Marily Oppezzo, and Doris Chin (Stanford University) describe the most common pedagogical sequence in U.S. schools: telling students the important principle or skill up front and then having them practice on a set of well-designed problems. This approach "is a convenient and efficient way to deliver accumulated knowledge," say the researchers. "Nevertheless, many scholars are working on instructional alternatives" – having students wrestle with a problem through a project, inquiry, or guided discovery and only then revealing the "answer" or underlying principle. "The mechanics of these alternatives withhold didactic teaching at first," say Schwartz, Chase, Oppezzo, and Chin, "lest it undermine the processes of discovery." The theory is that students "first need to experience the problems that render told knowledge useful."

But is the experience-first approach effective? In their study, the researchers compared eighth-grade teachers who used telling-first and those who used an experience-first approach. Students' initial recollection and test performance was the same in both groups, but long-term transfer was significantly better in the experience-first group. Why? The researchers believe it's because:

- Telling-and-practice pedagogy prompts students to apply solutions, one problem at a time, which reduces their chances of seeing similarities across cases.
- "Giving students the end-product of expertise too soon short-cuts the need to find the deep structure that the expertise describes."

- "Without an appreciation of deep structure, students are less likely to see the structure in new situations that differ on the surface, and they will fail to transfer."

That said, the authors aren't in favor of frustrating students with uncertainty; there is definitely "a time for telling." It's important for teachers "to help students tolerate the short-term ambiguity of not being told the right answer. The effort to find and characterize the structure can improve learning and test performance in the long run."

"Practicing Versus Inventing with Contrasting Cases: The Effects of Telling First on Learning and Transfer" by Daniel Schwartz, Catherine Chase, Marily Oppezzo, and Doris Chin in *Journal of Educational Psychology*, November 2011, http://bit.ly/2EHIwCq; Schwartz can be reached at daniel.schwartz@stanford.edu, Chin at dbchin@stanford.edu.

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7. Students Taking Responsibility for Their Own Learning

(Originally titled "Developing 'Assessment Capable' Learners")

"We limit our potential to reach school achievement goals when we fail to involve students deeply in the assessment process," say Nancy Frey and Douglas Fisher (San Diego State University) and John Hattie (University of Melbourne, Australia) in this article in *Educational Leadership*. Too often, students are left out when teachers look at learning data: "The person at the center of the discussion is relegated to a passive role."

Frey, Fisher, and Hattie argue that there's a big payoff when teachers and school leaders orchestrate a process that makes students "assessment capable," specifically:

- Students know their current level of proficiency and see the learning path ahead.
- They choose tools and resources (a writing rubric, for example) to guide their learning.
- They are confident about taking on academic challenges.
- They seek feedback and treat mistakes as learning opportunities.
- They monitor their progress and make necessary adjustments.
- They have a metacognitive sense of what they are learning and can teach others.

Hattie has studied the effect sizes of hundreds of classroom interventions and calculates that anything above 0.40 represents more than a year's worth of learning in a school year. Here's how the components of assessment capability stack up:

- Goal-setting in collaboration with teachers – 0.56
- Self-regulation, persistence, and study skills – 0.64
- Student motivation to take on challenges, seek information, and follow through – 0.72
- Feedback that's timely, specific, understandable, and actionable – 0.75
- Students' ability to report thoughtfully on their own performance – 1.44

"Developing 'Assessment Capable' Learners" by Nancy Frey, Douglas Fisher, and John Hattie in *Educational Leadership*, February 2018 (Vol. 75, #5, p. 46-51), available for purchase at http://bit.ly/2EgV461; the authors can be reached at nfrey@mail.sdsu.edu, dfisher@mail.sdsu.edu, and jhattie@unimelb.edu.au.

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8. Amplifying the Impact of Highly Effective Teachers

In this working paper from the National Center for Analysis of Longitudinal Data in Education Research, Ben Backes (American Institutes of Research) and Michael Hansen (The Brookings Institution) report on key findings from Public Impact's *Opportunity Culture* initiative in three school districts. *Opportunity Culture* pulled master teachers with demonstrated effectiveness from their classrooms, paid them more, and had them each intensively lead and coach a teacher team and become accountable for students' learning. A brief summary of the results:

- There were significant gains in students' math achievement as a result of improved teaching practices.
- There were no gains in reading achievement.
- A blended learning model involving the use of learning stations and online instruction overseen by paraprofessionals produced "significant and negative results."

"Reaching Further and Learning More? Evaluating Public Impact's *Opportunity Culture* Initiative" by Ben Backes and Michael Hansen in a working paper from the National Center for Analysis of Longitudinal Data in Education Research (CALDER), January 2018, https://caldercenter.org/sites/default/files/WP%20181_0.pdf

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9. Short Item:

A website on scientific misconceptions – This resource from the University of California Museum of Paleontology https://undsci.berkeley.edu/teaching/misconceptions.php is a collection of prevalent errors in science at all grade levels.

Spotted in "Does Pre-Assessment Work?" by Thomas Guskey in *Educational Leadership*, February 2018 (Vol. 75, #5, p. 52-57)

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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 48 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 HTMI 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
ASCD SmartBrief
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
Literacy Today
Mathematics Teaching in the Middle School
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