

# Marshall Memo 587

A Weekly Round-up of Important Ideas and Research in K-12 Education  
May 18, 2015

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## Quotes of the Week

“[B]etter teaching doesn’t come from imitating what star teachers do. Better teaching is built by steady, relentless, continual improvement – one lesson and one unit at a time.”

Bradley Ermeling, James Hiebert, and Ronald Gallimore (see item #1)

“Students watch us deliver lessons every day and can make observations that help expose blind spots in our practice.”

Greg Myers (quoted in item #3)

“If you moved to Italy and started studying Italian tomorrow, it would take you about two years to speak it proficiently in general conversation. If you wanted to study art at a university in Rome, it would take you a total of 5-7 years to have the level of *academic language* necessary to succeed in first-year classes. The same is true for English language learners in the U.S. – but they don’t have the possibility of studying the language for a few years before they try their hand at academics. From day one, they are on double duty, trying to meet academic content standards *and* English language proficiency standards simultaneously.”

Jane Hill in an interview with Heather Hein in “Q&A: Are Achievement Gaps Really Gaps in Academic Language Levels?” in *Changing Schools*, Spring 2015 (Vol. 73)

“Research shows the importance for all students of having extended verbal exchanges about what they have read and what they are going to write. For ELLs, it’s much more critical because, basically, if they can’t say it, they can’t write it.”

Jane Hill (*ibid.*)

“Students are seeing themselves for the first time as college students. They’re seeing they can do something that maybe no one has ever told them they can do. It changes everything.”

Joni Swanson, quoted in “Getting a Jump on College” by Jon Marcus in *Harvard Education Letter*, May/June 2015 (Vol. 31, #3, p. 4-6), [www.edletter.org](http://www.edletter.org)

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## 1. Keys to Continuously Improving Teaching and Learning

(Originally titled “‘Best Practice’ – The Enemy of Better Teaching”)

In this *Educational Leadership* article, Bradley Ermeling (Pearson), James Hiebert (University of Delaware), and Ronald Gallimore (UCLA) question the tendency of many educators to uncritically implement *best practices*. “*Best* suggests a definitive superiority to alternative practices,” they say; “it’s a label based more on an appeal to authority than on research... Researchers treat skeptically the claim that a practice is broadly and generally the best because results of scientific studies are seldom so clear cut.” They identify three problems with the best practices approach:

- *Plug and play* – A superficial understanding of a “best practice” can lead to flawed implementation. For example, “rich” conceptual mathematics problems are touted as a best practice used by higher-performing countries. Actually, the 1999 TIMSS research showed that U.S. teachers use as many conceptual problems as teachers in countries that outperformed us. The key difference was how Japanese and other successful teachers *used* these problems: they got students to wrestle with them before providing formulas and explanations. “So simply plugging in rich problems – without changing the underlying instruction – is a form of practice that doesn’t deserve the adjective best,” say the authors. “It treats teaching as a simple collection of independent and replaceable parts.”

- *Uncoupling goals from strategies* – “Different teaching methods are more effective for some learning goals than for others,” say Ermeling, Hiebert, and Gallimore. And some work better than others. Teachers focused on a narrow objective – for example, raising scores on an algebra test that emphasizes correctly executing procedures – might use repeated, error-free practice with immediate feedback. But if they wanted students to remember the skills for the rest of the year and transfer and modify them in new situations, teachers would use a better approach: getting students to exert some intellectual effort, make sense of the procedures, and wrestle with why they work. “Labeling any teaching method as ‘best’ stops the ongoing search for better approaches and prevents teachers and researchers from continually working to improve instruction,” say the authors. “For this learning objective, for this group of students, at this point in the academic year, what might be some promising practices to try out, refine, and try again?”

- *Emphasizing activities over learning* – There’s too much emphasis on *fresh*, *innovative*, and *high-interest*,” say the authors, which blurs the fact that activities are *means* to an end. Laptops, tablets, interactive whiteboards, clickers, and apps are often implemented

without thinking through the deeper goals and training educators to implement them well. The same is true for problem-based learning, cooperative groups, and hands-on learning. Some principals look for superficial evidence when they visit classrooms: *Did the teacher ask higher-order questions? How many times?* “It would be better to ask, When the teacher used higher-order questioning, did it create a powerful learning opportunity?” say the authors. A key success factor is “*figuring out* an instructional solution that produces a detectable improvement in learning...”

Ermeling, Hiebert, and Gallimore close with three recommendations for shifting the professional culture.

- Talk about “effective” rather than “best” practices, each tied to well-defined goals.
- Develop a carefully indexed repository containing: lesson videos with expert analysis, commentary, and interpretation; interim assessments for monitoring progress and providing feedback; alternative instructional moves to address specific student needs; and resources to deepen teachers’ knowledge of content.
- Focus PD on continual improvement of teaching. “The ‘best practice’ culture tends to search for and celebrate outlier teachers,” say the authors. “But better teaching doesn’t come from imitating what star teachers do. Better teaching is built by steady, relentless, continual improvement – one lesson and one unit at a time.”

“‘Best Practice’ – The Enemy of Better Teaching” by Bradley Ermeling, James Hiebert, and Ronald Gallimore in *Educational Leadership*, May 2015 (Vol. 72, #8, p. 48-53), <http://bit.ly/1c1caCm>; the authors can be reached at [brad.ermeling@gmail.com](mailto:brad.ermeling@gmail.com), [hiebert@udel.edu](mailto:hiebert@udel.edu), and [ronaldg@ucla.edu](mailto:ronaldg@ucla.edu).

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## **2. Hidden Assumptions That Undermine Good Teaching**

“When we articulate our assumptions, we can examine and evaluate their implications and decide if they’re aligned with our deeply-held beliefs about teaching and learning,” say veteran international educators William Powell and Ochan Kusuma-Powell in this *Kappan* article. Drawing on the work of Robert Kegan and Lisa Laskow Lahey, they list some goals embraced by many teachers:

- I would like to see all my students achieve success.
- I want to better meet the needs of diverse learners in my class.
- I want to be more student-centered.
- I want to personalize learning so every student feels included and invited to learn.

But here are some unconscious tendencies that pull teachers in another direction:

- I like to feel in control of the classroom.
- I need to be needed.
- I want students to feel I am indispensable to their learning.
- I don’t want to try something new, fail, and look like a fool.
- I tend to think that the way I learn is the best way.

And here are some of the ways these tendencies manifest themselves in the classroom:

- I have a tendency to jump in to “save the day.” I like to be helpful.
- I look for (or manufacture) situations in which students depend on me for their learning.
- Sometimes I don’t listen well.
- I have difficulty appreciating that other people may learn differently.
- I’ve taught this way for many years, and it works for most kids.

And here are the underlying assumptions that need to be confronted for transformational change to occur:

- I assume I won’t feel professional satisfaction unless all learning in the class comes from me.
- I assume that success (mine and students’) is monolithic and defined by outside forces over which I have no control.
- I assume that failure (mine and students’) is something to be avoided, rather than something to be learned from.
- I assume that to engage in public learning may be a sign of weakness (that I don’t know everything I’m supposed to know) and may make me look like a fool.

“Overcoming Resistance to New Ideas” by William Powell and Ochan Kusuma-Powell in *Phi Delta Kappan*, May 2015 (Vol. 96, #8, p. 66-69), [www.kappanmagazine.org](http://www.kappanmagazine.org); these thoughts are adapted from *Immunity to Change* by Kegan and Lahey (Harvard Business Press, 2009).

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### **3. Effective Use of Student Perception Surveys**

In *Harvard Education Letter*, Suzanne Bouffard reports on the growing popularity of surveying students on their teachers’ performance. Why the surge? Research has shown that students’ perceptions are more closely correlated with achievement than principals’ classroom evaluations. “Who knows my practice better than my own students?” asks Nashville teacher Amy Cate. “Students watch us deliver lessons every day and can make observations that help expose blind spots in our practice,” says Massachusetts superintendent Greg Myers.

But aren’t surveys just popularity contests? And won’t some students misunderstand the questions and/or not take the surveys seriously? Not if teachers carefully explain the purpose of surveys and use well-worded questions that get at specific classroom practices. A number of companies have crafted sophisticated, research-based surveys, and Tripod and Panorama have made some of their questions free and open-source.

Should survey data be part of teachers’ official evaluations? Some districts mandate that surveys make up a specific percentage – 5 percent in Memphis and 15 percent in Pittsburgh – but others treat the data as additional information, asking principals to explain discrepancies between students’ views and what they see in classroom observations. Nashville and the state of Georgia initially used surveys for high stakes and later pulled back. Rob Ramsdell of Tripod says that surveys are “very personal in a way that’s different from other measures” and using them for evaluation can “complicate how people respond.” Getting teacher buy-in is critical; some districts have made surveys voluntary.

Can surveys go beyond *documenting* teachers' performance and actually *improve* it? That's an open question, but preliminary evidence is encouraging: 75 percent of Georgia teachers who took part in a pilot project said they found students' feedback helpful in adopting better classroom practices. An example: Amy Cate was concerned that her students rated her low on this item: *My teacher walks around the room to check on students when we are doing work in class*. Based on the feedback, she made a point of moving from student to student during work periods. "I knew proximity was important," she says, "but the survey responses were the reminder I needed."

[From this and other articles on student perception surveys, here is a synthesis of ideas for effective implementation and optimal impact on teaching and learning:

- Don't use student survey data for high stakes – even as a small percent of official evaluations. This runs the risk of corrupting a potentially powerful tool for reflection and improvement.
- Build teachers' understanding and trust by sharing the research (the Memo archive has 26 article summaries under Teacher evaluation: Student opinions) and reassuring them about how the data will be used.
- Survey students twice a year, with the first survey conducted early enough to use the results to improve performance (perhaps November).
- Use thoughtful, well-worded questions that students can easily understand, taking full advantage of free and open-source item banks.
- Keep surveys to a reasonable length – perhaps no more than 30 questions.
- In middle and high schools, spread out the surveys so students won't have difficulty focusing on one teacher at a time.
- Don't conduct surveys at points in the year when students are "surveyed out."
- Explain the purpose of surveys to students so they'll take them seriously.
- Get survey data back to teachers quickly – ideally within 24 hours.
- Immediately after each survey, provide time for each teacher to sit with an administrator or a trusted colleague and discuss three questions: (a) What's the positive news? (b) What surprises you? and (c) What are two specific areas in which students have provided good ideas for changes you might want to make in your classroom?
- Use data to follow up with individual coaching, peer visitations (teachers who are strong in particular areas working with those who are not as strong) and professional development in problematic areas.
- For teachers' summative evaluations, use students' perceptions as additional information and explore discrepancies between what students say, what supervisors see in classrooms, and student-achievement results. K.M.]

"Learning from Our Students: Surveys Offer Performance Feedback to Teachers" by Suzanne Bouffard in *Harvard Education Letter*, May/June 2015 (Vol. 31, #3, p. 1-3, 6), [www.edletter.org](http://www.edletter.org)

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## 4. How to Engage Middle-School Students

“What is active learning and what does it look like in the classroom?” asks Susan Edwards (Georgia Regents University) in this *Middle School Journal* article. Some key ingredients:

- Students are intellectually involved in learning through problem-solving activities, creating multimedia presentations, synthesizing research for presentations or papers, inquiry activities, and concept maps.
- They are socially engaged through whole-group discussions, small-group discussions, and small-group projects.
- They are physically engaged through hands-on projects, manipulatives, games, building models, and lab experiments.
- They aren't overly reliant on the teacher
- They reflect on ideas and how they are using those ideas.
- They regularly assess their own understanding of subject matter and skills.

“The goal is not activity for activity's sake or to make the lesson fun,” says Edwards. “It is not achieved by simply incorporating some games or fun activities into a lesson plan. Clearly, every activity in a lesson should lead to purposeful learning of the lesson objectives and the standard to be met.”

Edwards goes on to compare three lessons taught in a traditional, passive mode and then in an active mode:

- *Fifth grade: Solving problems on a coordinate plane in Quadrant 1 – Traditional mode:*

- Bell-ringer: students write the coordinates of 3 points on a coordinate plane.
- The teacher goes over the answer with the class.
- The teacher uses PowerPoint to introduce solving problems on the coordinate plane.
- Students copy key vocabulary terms and definitions into their notebooks.
- The teacher demonstrates several problems.
- Students do an example problem and the teacher explains the correct answer.
- Students practice 20 problems of varying levels of difficulty in their workbooks.
- The teacher goes over the answers and gives students a chance to ask questions.

- *Same content, active mode:*

- The whole class plays an interactive game on the Promethean board with students taking turns coming up front. The game asks students to think logically, for example, “Which direction will the point move if I make the x-coordinate bigger?”
- Students get out their math journals and come up with student-friendly definitions of vocabulary terms based on the teacher's explanations.
- Students rotate through four stations in small groups:
  - ✓ Station A – Students plot 4 points on a coordinate grid, connect the points, and say what geometric figure is formed, which line segments are parallel, and which line segments are perpendicular.
  - ✓ Station B – Students work together to solve word problems on a worksheet.

- ✓ Station C – Students explain a path from the school to the town library, using points on a coordinate plane. They can move magnets around on a giant coordinate plane with pictures of town buildings superimposed on the plane.
- ✓ Station D – Students play an interactive game on the Promethean board.
- *Eighth grade ELA: Gerunds, Participles, and Infinitives – Traditional mode:*
  - The teacher introduces new vocabulary terms.
  - The teacher displays sample sentences and asks students to identify different terms – for example, “What is the gerund in this sentence?”
  - Students complete a worksheet with 20-25 sentences and identify vocabulary terms.
  - The teacher goes over the answers with the whole class.
  - Students are assigned a page in the grammar book for homework.
- *Same content, active mode:*
  - The teacher uses PowerPoint to introduce vocabulary terms.
  - The teacher displays sentences on the board related to the vocabulary terms and students give their answers by holding up one finger if it’s a gerund and two if it’s an infinitive.
  - The teacher does a multimedia presentation with videos and pictures of students, each accompanied by a sentence – for example, “The sleeping boy was suddenly awakened by his teacher.” Students have to identify verbals in each example, individually and in their notebooks.
  - The class discusses the answers, with the teacher calling on students to change sentences as he calls on them – for example, change this sentence from passive to active voice.
  - Students work in small groups to create their own video with sentences using verbals.
- *Eighth-grade social studies: Key issues leading to the Civil War – Traditional mode:*
  - The teacher lectures using PowerPoint.
  - Students take guided notes.
  - Students read a section in the textbook.
  - Students answer questions at the end of the section.
- *Same content, active mode:*
  - The class plays a quiz bowl game using buzzers. Everyone rotates through two teams of five facing each other. The teacher asks questions involving understanding, applying, and analyzing and calls on the student who buzzes first.
  - The teacher requires students to explain their answers and probes with follow-ups: Expand on your definition of *campaign*. Use the word *battle* in your definition. This is where I need you to think and make connections.
  - The teacher interrupts the game several times with two activities: Heads-Down Quick Poll (a quick self-assessment) and repeating the correct answer three times.
  - Students work with partners on projects in which they create newsletters with articles and illustrations.

- Students get a homework “Brag Sheet” assignment: they must explain to parents what they know about a list of topics (parents receive the answer sheet from the teacher and must sign off that their children knew the material).

“Active Learning in the Middle Grades” by Susan Edwards in *Middle School Journal*, May 2015 (Vol. 46, #5, p. 26-32), [www.amle.org](http://www.amle.org); Edwards can be reached at [sedwar12@gru.edu](mailto:sedwar12@gru.edu).

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## 5. Learning Multiplication Tables by Fourth Grade

In this article in *Teaching Children Mathematics*, Gina Kling (Western Michigan University) and Jennifer Bay-Williams (University of Louisville) suggest a strategy for meeting the challenging Common Core standard of knowing *from memory* all single-digit multiplication facts by the end of third grade. Mastering multiplication facts has been a challenge for generations of math learners. “That was the day I decided I was bad at math,” is a common refrain among adults thinking back to their elementary school days. The methods used – timed tests, tense competitions, and public displays of who mastered multiplication tables and who hadn’t – may be responsible. One teacher remembered, “We learned a song for every fact. I can find any fact quickly, but I still need to sing the song first.”

Kling and Bay-Williams address three essential questions on the road to multiplication mastery:

- *What is fluency?* It’s been defined as “skill in carrying out procedures flexibly, accurately, efficiently, and appropriately.” Note that *speed* is not on the list. Also, there’s an important distinction between *from memory* and *memorization*: really mastering multiplication facts means that students “just know” that  $2 \times 6 = 12$  without having to memorize it, and are so fluent at applying strategies that they do so automatically, without hesitation.

- *What approaches successfully build fluency?* Kling and Bay-Williams say that conventional methods of teaching the tables don’t build long-term mastery and fluency because they skip the second step in this developmental ladder:

- Phase 1: Modeling and/or counting to find the answer (e.g., finding  $6 \times 4$  by drawing 6 groups of 4 dots and skip-counting the dots);
- Phase 2: Deriving answers using reasoning strategies based on known facts (e.g., solving  $6 \times 4$  by thinking  $5 \times 4 = 20$  and adding one more group of 4);
- Phase 3: Mastery – efficient production of answers (e.g., knowing  $6 \times 4 = 24$ ).

Traditional approaches (flash cards, drill, timed tests) skip Phase 2. Without that phase, students don’t retain the facts they memorize, and even if they remember them, they can’t apply them fluently because they haven’t developed a *feel* for the numbers. “Research tells us that students must deliberately progress through these phases,” say Kling and Bay-Williams, “with explicit development of reasoning strategies, which helps students master the facts and gives them a way to regenerate a fact if they have forgotten it. Students make more rapid gains in fact mastery when emphasis is placed on strategic thinking.” Here’s an effective instructional sequence:

- *Foundational facts* – By the end of second grade, students should know: 2s, 5s, and 10s; addition doubles; 0s and 1s, and multiplication squares ( $2 \times 2$ ,  $3 \times 3$ , etc.) – by using story problems, arrays, skip counting, patterns on a hundreds chart, and a multiplication table.
- *Derived facts* – Building on the foundational facts (which they should know cold), students work on quickly figuring out “nearby” facts by adding or subtracting a group (I don’t know  $9 \times 6$ , so I think “ $10 \times 6 = 60$ ” and subtract one group of 6 to get 54); halving and doubling (I don’t know  $6 \times 8$ , so I think “ $3 \times 8 = 24$ ” and double that to get 48); using a square product (I don’t know  $7 \times 6$ , so I use  $6 \times 6 = 36$  and add one more 6 to get 42); and decomposing a factor (I don’t know  $7 \times 6$ , so I break the 7 into 2 and 5, because I know  $2 \times 6$  and  $5 \times 6$ , then I add 12 and 30 to get 42).

Underlying all these strategies are the commutative, associative, and distributive properties of multiplication. (Common Core standards don’t ask students to be able to *name* these properties, only to be to *apply* them intuitively to make facts easier to solve.)

- *What does meaningful practice look like?* “There is no doubt that practicing multiplication facts is essential for mastering them (Phase 3),” say Kling and Bay-Williams. But drilling isolated facts doesn’t work. “To maximize precious class time spent practicing facts, embedding that practice in worthwhile mathematical activities is important.” Meaningful practice uses the facts in rich, engaging activities that promote problem solving, reasoning, and communicating mathematical thinking. Games can also deepen mastery of multiplication facts without the anxiety of timed drills and competitions. Here are three games:

- *Strive to Derive* – 2-4 students have array cards (3s, 4s, 6s, and 9s), uncooked spaghetti or thin sticks, and two teacher-labeled dice, one with 3, 3, 6, 6, 9, 9 and the other with 0, 1, 4, 6, 7, and 8. For example: Lisa rolls a 6 and a 7. She pulls the  $6 \times 7$  array card and places spaghetti to show  $5 \times 7$  and  $1 \times 7$ , then says, “Six times seven is five times seven, 35, and one more seven, 42.” She gets a point, then the next player goes.
- *Cover It* – Two players spread matching array cards so they’re all visible. The first player pulls an array from the middle and gives it to the other player, who must find two arrays that exactly cover the one received. If player 2 succeeds, he or she keeps the three array cards. If player 2 can’t do it, player 1 has a chance and can also win the cards. Players switch roles and continue, saying or writing the combinations they find to cover the original array.
- *Multiplication Tetris* – The teacher rolls two dice (any kind), and each student decides where and in what orientation to fit that rectangle on the grid paper (for example,  $4 \times 6$ ) and write the multiplication fact. The teacher continues to roll and students mark out the called rectangle somewhere on the grid. When a student can’t fit a rectangle, he or she is out of the game, and the last students in the game are the winners.

“Three Steps to Mastering Multiplication Facts” by Gina Kling and Jennifer Bay-Williams in *Teaching Children Mathematics*, May 2015 (Vol. 21, #9, p. 548-559), [www.nctm.org](http://www.nctm.org); the authors can be reached at [gina.garza-klings@wmich.edu](mailto:gina.garza-klings@wmich.edu) and [j.baywilliams@louisville.edu](mailto:j.baywilliams@louisville.edu).

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## 6. In Preschool, the Best Combination of Adult Direction and Child Play

In this *Kappan* article, Deena Skolnick Weisberg (University of Pennsylvania), Audrey Kittredge and David Klahr (Carnegie Mellon University), Kathy Hirsh-Pasek (Temple University), and Roberta Michnick Golinkoff (University of Delaware/Newark) draw a distinction among four kinds of interaction in preschool classrooms:

- Adult-initiated and adult-directed – Direct instruction
- Child-initiated and adult-directed – Co-opted play
- Child-initiated and child-directed – Free play
- Adult-initiated and child-directed – Guided play

Each of the four modes has different characteristics. There's definitely a place for direct instruction, but children's involvement and autonomy is limited, producing suboptimal learning. With co-opted play, "Children start out in charge," say the authors, "but adults take over and begin to set the agenda for the scenario, without providing space for children's autonomy." Again, the learning results aren't what they could be.

Free play, where children can do anything they want with any materials, "is highly beneficial for various aspects of children's development," say Weisberg et al. Children who play more have better social skills, demonstrate better self-regulation, and are more creative thinkers." However, free play may not be the best way to achieve educational outcomes. "Although children engaged in unfettered exploration could potentially stumble on the information that the teacher is trying to impart, it would lead to haphazard success at best."

Guided play is the sweet spot, say the authors. Research shows that "direct teaching can work; if you tell them, children will learn. But guided play works better; if you guide them, children are more likely to actively explore and learn more." This combination of adult initiation and child direction "crucially incorporates an element of adult structuring of the play environment, but the child maintains control within that environment... Children do not just perceive that they are in control... they truly can decide what to do next and how to respond... Giving children a nudge in the right direction and letting them choose their actions from there can be a productive strategy for teaching."

This mix of an adult agenda and children's autonomy has been called "chocolate-covered broccoli." Teachers may carefully prepare the environment beforehand (which toys and materials are available) or scaffold children's actions as play progresses (asking open-ended questions like, "What do you think would happen if...") while remaining relatively unobtrusive and respecting children's choices.

Weisberg and her colleagues conclude by suggesting that the guided play model might be equally effective beyond the preschool classroom – even with adults in the workplace creatively exploring within a structured environment.

"Making Play Work for Education" by Deena Skolnick Weisberg, Audrey Kittredge, Kathy Hirsh-Pasek, Roberta Michnick Golinkoff, and David Klahr in *Phi Delta Kappan*, May 2015 (Vol. 96, #8, p. 6-13), [www.kappanmagazine.org](http://www.kappanmagazine.org);

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## 7. Short Items:

**a. Draft ISLLC standards out for public comment** – The Council of Chief State School Officers just released revised Standards for Education Leaders and welcomes comments before the May 29, 2015 deadline. Here’s the link: <http://bit.ly/1e5gySv>. There are some strong disagreements around the revisions in this draft, covered in this *Education Week* article: “New Leader Standards Kick Up Controversy” by Denisa Superville (Vol. 34, #30, p. 8), [www.edweek.org](http://www.edweek.org)

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**b. Free teacher survey** – Panorama Education has just released an online survey to tap teachers’ views on a variety of topics – school climate, leadership, curriculum, supervision, etc. Memo readers can sign up (access code Memo), customize the survey, and get free reports and analytics: <https://www.panoramaed.com/panorama-teacher-survey>

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**c. Online social attitudes self-assessment** – The Implicit Association Test (IAT) was designed by researchers at the University of Washington in 1998 to measure implicit associations about race, gender, sexual orientation, and other topics. You can take it free online at <http://implicit.harvard.edu> if you’re willing to sign up and let your results be used anonymously in the dataset (more than 100 million people have participated so far).

“Taking a Good Look at Ourselves: Critical Reflection Mobilizes Culturally Responsive Instruction” by Robin Wisniewski in *Changing Schools*, Spring 2015 (Vol. 73, p. 9)

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**d. Video on science misconceptions** – Derek Muller models effective instruction around a commonly held notion: that a metal object is colder than a book because it feels colder. The key teaching insight is to start by surfacing the misconception, then getting into the science: <https://www.youtube.com/watch?v=vqDbMEdLiCs>

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**e. When will we ever use this math?** – *Teaching Children Mathematics* suggests the following websites for ideas on when and where various mathematical concepts and skills will be useful in the real world:

- <http://weusemath.org> We Use Math, including a video on interesting applications;
- <http://www.mathguide.com/issues/whymath.html> A print site with a solid list;
- <http://www.khake.com/page56.html> Math on the Job - lots of links;
- <http://www.mathworksheetcenter.com/mathtips/everydaymath.html> Worksheets galore!

“News and Views” in *Teaching Children Mathematics*, May 2015 (Vol. 21, #9, p. 520)

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*f. Five-minute lesson plan* – From British educator Ross Morrison McGill, here's an online format for a compact lesson plan: <http://teachertoolkit.me/the-5-minute-lesson-plan/>

Teacher Toolkit, October 28, 2014

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*g. Interview* – Mike Doughty, the New York administrator who records the Memo podcast each week, did an interview with Kim Marshall last week, covering how the Memo takes shape each week and Kim's views on school leadership and teacher supervision and evaluation. You can listen to an edited version at <http://www.schoolleadershipshow.com/>.

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# 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 44 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 64 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 a year. Rates decline steeply for multiple readers within the same organization. See the website for these rates and how to pay by check, credit card, or purchase order.

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- A database of all articles to date, searchable by topic, title, author, source, level, etc.
- A collection of "classic" articles from all 11 years

## ***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  
AMLE Magazine  
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 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  
Independent School  
Journal of Education for Students Placed At Risk (JESPAR)  
Journal of Staff Development  
Kappa Delta Pi Record  
Knowledge Quest  
Middle School Journal  
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  
School Library Journal  
Teacher  
Teachers College Record  
Teaching Children Mathematics  
Teaching Exceptional Children/Exceptional Children  
The Atlantic  
The Chronicle of Higher Education  
The District Management Journal  
The Journal of the Learning Sciences  
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