# Marshall Memo 956

A Weekly Round-up of Important Ideas and Research in K-12 Education
October 10, 2022

## In This Issue:



## Quotes of the Week

"From a strictly neuroscientific perspective, the education system is tilted in favor of girls."
Richard Reeves (see item #1)

"In the span of just a few decades, girls and women have not only caught up with boys and men in the classroom – they have blown right past them."
Richard Reeves (*ibid*.)

"Adolescents are wired in a way that makes it hard to make good choices. The problem of self-regulation is much more severe for boys than for girls. Flooded with testosterone, which drives up dopamine activity, teenage boys are more inclined to take risks and seek short-term rewards than girls are."
Richard Reeves (*ibid*.)

"For many students, for many reasons, much of their active working memory may be taken up with things not related to the topic of your class."
Ian Kelleher (see item #2)

"To me, true 'rigor' is the ability to push each student just a tidge past their comfort zone so they can be encouraged that they can indeed succeed."
A teacher (quoted in item #6)

"To be able to debate is a life skill. It equips us to be good citizens, to advocate for ourselves and the issues we care about, and to be effective in the workplace."
Michelle Blanchet (see item #4)

"We as a people are great at arguing, bad at listening, and worse at considering."
Steve Calechman (see item #5)

## 1. Should Boys Start Kindergarten a Year Later Than Girls?

In this article in *The Atlantic*, Richard Reeves reports that it's now common for independent schools to hold summer-birthday boys back a year as they enter kindergarten – a practice known as redshirting. A former private school head told Reeves, "There are effectively two different cutoff dates for school entry: one for boys and one for girls."

But nationally the practice is much less common. Before the pandemic, only about six percent of children waited a year before entering kindergarten, while for the younger sons of affluent, highly educated parents, the rate was 20 percent. According to a Rand survey, teachers are three times more likely to redshirt their sons than their daughters.

This means that boys from less-fortunate homes – who struggle the most in classrooms – are less likely to be redshirted and enter kindergarten a year later. The cost of an additional year of child care is undoubtedly part of parents' decisions, but so is the fact that the practice is not commonly accepted and discussed in public schools.

Reeves believes schools that aren't already doing so should have the same conversations with parents as many independent schools do. He takes it a step further: "I believe that, as the default, all states and school districts should enroll boys a year later than girls." More-generous support for an additional year of child care would need to be part of a national initiative.

Could redshirting boys at scale make a difference? Reeves says that while we need pilot programs and more evidence, studies have shown "dramatic reductions in hyperactivity and inattention during elementary school, lower chances of being held back later, higher test scores, and higher levels of life satisfaction." One study demonstrated that lower-income boys benefited most. This is significant, says Reeves, since "the risk of being held back a grade is massively unequal by race, gender, and economic background."

Why redshirt boys? Because, he reports, neuroscience has confirmed what many parents have long known: boys' brains mature more slowly than girls', especially in the areas most important to classroom success. This divergence is clearly visible by age five, persists through elementary and middle school, and is widest at age 16 and 17. The gap is mostly in noncognitive rather than academic skills. One study found that American girls are 14 percentage points more likely than boys to be "school ready" at five years old – and that's controlling for parental characteristics, wealth, and preschool attendance. "From a strictly neuroscientific perspective," says Reeves, "the education system is tilted in favor of girls."

The result, says Reeves, is that "on almost every measure of educational success from pre-K to postgrad, boys and young men now lag well behind their female classmates… In the span of just a few decades, girls and women have not only caught up with boys and men in the classroom – they have blown right past them." (These trends are also true in other economically developed nations.)

This is ironic because our education system was originally designed by men, primarily for men's benefit. The neurobiological bias in favor of women was "hard to see when girls were discouraged from pursuing higher education and careers," says Reeves. "But now that these barriers have been lowered, girls' advantages in school have become more apparent with every passing year. An unexpected result of feminism has been to reveal the ways in which education is failing boys."

Of course there's still lots to be done to address male-female inequities in politics, economic opportunity, and corporate leadership, says Reeves. "But as to education, boys and men are the ones who need the most help. And it's not an issue only for them. When schools fail boys, those boys grow into men lacking the skills to flourish in the workplace, to be strong partners, or to be good providers for their children."

Reeves shares details from recent studies: "Once boys begin school, they almost immediately start falling behind girls." A six-percent boy-girl gap in fourth-grade reading proficiency is 11 percentage points by the end of eighth grade. In high school, the most common grade for girls is an A, for boys a B. Twice as many girls as boys are in the top 10 percent for GPA, and twice as many boys as girls have the lowest grades. Almost 20 percent of boys do not graduate from high school on time, compared to 10 percent of girls.

Social-emotional immaturity is especially damaging to academic achievement in the teen years. "Adolescents are wired in a way that makes it hard to make good choices," says Reeves. "The problem of self-regulation is much more severe for boys than for girls. Flooded with testosterone, which drives up dopamine activity, teenage boys are more inclined to take risks and seek short-term rewards than girls are." The parts of the brain associated with impulse control, planning, and future orientation mature about two years later in boys than girls.

Redshirting, says Reeves, makes much more sense than teaching boys and girls separately. Single-sex classrooms, he says, "don't appear to help boys (or girls) very much in any case, and may introduce social distortions by segregating boys from girls throughout childhood. Boys and girls don't need to go to different schools, but rather to the same school at different times in their life."

What happens in classrooms with more redshirted boys? Researchers have found there's a positive effect on the learning environment with more-mature boys – and the girls are doing just fine.

"Redshirt the Boys" by Richard Reeves in *The Atlantic*, September 14, 2022

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## 2. How to Avoid Overloading Students' Working Memory

In this *Edutopia* article, teacher/researcher Ian Kelleher says students' working memory – their mental sketchpad – is a "huge bottleneck to learning." That's because the amount of real-time information the human brain can handle – its cognitive load – is only three to five items for 10-20 seconds. If teachers overload students' working memory, "learning is hard or impossible." Students may seem to be understanding during a lesson, but if there's cognitive overload, very little will make it into long-term memory.

The key to learning that lasts, says Kelleher, is reducing extraneous cognitive load and providing temporary scaffolding. "Anything that isn't intrinsic to the learning task itself, or isn't part of the process of helping it stick in students' long-term memory, is extraneous cognitive load," he says. His suggestions:

• *Keep assignments and directions clear and simple*. This is especially important with homework, when students are mostly on their own. "Remember that your students are novice learners in the subject, whereas you're an expert," says Kelleher. With assignments:

- Number each step.
- Make sure students have easy access to the resources they need.
- Be sure that prerequisite knowledge and skills have been mastered.
- Limit the ways students can submit their work.
- Tightly align homework assignments with class work.
- Remember that with homework, quality is more important than quantity.

• *Improve the classroom work environment*. Eliminating distracting noise is part of Classroom Management 101, and that extends to music. "If you want to play music in class," says Kelleher, "deliberately choose when, knowing that for some students it will add significant cognitive load." The bottom line: music should reduce stress and improve attention. It's also helpful to avoid visual clutter in the classroom. "Everything there should have a purpose," says Kelleher. "Design, don't decorate. Have less on show at once, and rotate it as the year goes on."

• *Present visual content information effectively*. Kelleher agrees with Rich Mayer's principles of multimedia learning:

- Provide only the text and visuals the learner needs, as economically as possible.
- Give students verbal cues on what to look at; don't make assumptions.
- Minimize the amount of text, and don't read slides out loud, which can create cognitive overload. "Prompt students to read the text," says Kelleher, "and give them time to do so with you being silent."
- Use humor with caution, and only when it amplifies the idea being taught. It's not good if students remember a cartoon or funny image rather than the content.

• *Nurture each student's sense of belonging*. "For many students, for many reasons, much of their active working memory may be taken up with things not related to the topic of your class," says Kelleher. "To what extent do you help each student feel safe, build their trust, and feel that their unique story matters in your class? … To what extent do you work to eliminate identity threat in all its forms? To what extent do you help build each student's sense of social

belonging?" It's wise to invest time early in the school year to get to know students, help them get to know each other, and establish routines and rituals that make for a safe, predictable culture.

• *Build in temporary scaffolds*. "These help students to offload some of their thinking onto paper," says Kelleher, "so that they have less 'new stuff' to hold in their working memory at once." Here are some examples, each faded over time and brought back when necessary:

- Visual planning sheets to help students organize their thinking. Students might be explicitly told that these will help free up space in active working memory so they can think more deeply.
- For a writing assignment early in the year, students are allowed to have note cards with quotations to help them focus on mechanics and usage.
- In a Spanish class, students make a help sheet on difficult verb tenses.
- In a physics class, students use an equation sheet early on.
- With a multi-week project, students have a single-column rubric for check-ins.
- When launching a new curriculum unit, plan short activities to help students "awaken" and connect their prior knowledge and experience.

"How to Reduce the Cognitive Load on Students During Lessons" by Ian Kelleher in *Edutopia*, September 16, 2022

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## 3. Democratizing the Assessment of Students' Creativity

In this *Review of Research in Education* article, Haiying Long, Barbara Kerr, Trina Emler, and Max Birdnow (University of Kansas) report on their study of how creativity is measured in K-12 schools. Creativity is considered one of the essential 21st century skills, say the authors (along with critical thinking, communication, and collaboration), and "is essential for deeper learning that focuses on transferring and applying knowledge to solve problems in new situations."

How do we assess creativity? The authors describe and critique the most common approaches in schools:

- Tests or teacher reports of creative and divergent thinking;
- Student self-reports via questionnaires;
- Assessments of tasks performed by students (drawing deep-sea creatures, developing an advertising campaign for a chain of retail stores);
- Rating scales or checklists (often used to identify gifted students);
- Creative profiling of cognitive, personality, and motivational components;
- Assessments of students' self-efficacy and mindsets regarding creativity.

Long and her colleagues say the state of the art of creativity assessment is "stagnant," often relying on a few traditional methods, and schools rarely use a variety of assessments to put together "a true creativity profile and highlight the uniqueness and jagged profiles of an individual's creative potential." New advances in psychometrics and assessment theories, they

say, make possible higher-quality, more-authentic measures that "assess students' actual performance and provide important feedback for teachers and students." These new assessments also promise to address historical biases in creativity and gifted assessments.

On that point, Long and her colleagues say that most studies of creativity have been conducted mainly with white students, and "there is often a total lack of information on racial or ethnic composition of the assessed subjects in international creativity studies in education." In addition, there are gender and socioeconomic biases: "The impact of gender socialization on the creative self-efficacy and identity of girls and women has seldom been acknowledged or addressed," say the authors. "In addition, issues of privilege and socioeconomic inequities seldom become the focus of the articles we reviewed."

These concerns have been most prominent in screening students for gifted programs. "Despite decades of efforts at increasing the representation of minority students in gifted education," say the authors, "attempts to change identification measures have mostly failed to significantly increase the number of black, Hispanic, and Native Americans in these programs. Although nonverbal assessments of intelligence purported to be less biased than traditional tests, they have consistently failed to change the risk ratio for identification."

The authors' general conclusion is that schools aren't doing enough creativity assessment, and there's been little effort to assess how creativity manifests itself in different areas and developmental levels. That is important since creativity may blossom in different areas and at different times in a child's development. "Clear differences exist in the development of creativity in particular domains," say Long et al., "and domain-specific assessment of creativity in education is as important as general assessment of creativity." The authors urge creativity researchers to be more involved in K-12 schools, including leading professional development for teachers and working directly with students.

The authors' final point is that too much of researchers' attention has been on assessing the creativity of the individual student, and not "asking deeper questions about why and for whom we assess creativity in education." They close with several questions: "To what degree does creativity assessment promote democracy and equal rights, and to what degree does it support the status quo of vast inequalities? When the majority of creativity assessments in education focus on the individual, rather than the school and community, does that support the assumption that the individual alone is responsible for creative success or failure, and that schools and government have no part to play in the development of creativity? Does the emphasis on STEM… creativity, and other forms of creativity directly linked to financial gain and national prosperity, reduce interest in assessing creative ideas and behaviors related to individual freedom and the common good?"

"A Critical Review of Assessments of Creativity in Education" by Haiying Long, Barbara Kerr, Trina Emler, and Max Birdnow in *Review of Research in Education*, March 2022 (Vol. 46, pp. 288-323); Long can be reached at hlong@ku.edu.

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## 4. Using Debate Across Grades and Subject Areas

In this *Edutopia* article, consultant Michelle Blanchet says debate can build the following skills as students work with team members to develop and present their arguments:

- Collaboration and teamwork;
- Research and organization;
- Critical thinking, looking objectively at an issue;
- Oral and written communication;
- Presentation and public speaking;
- Listening, tolerance, humility, and patience.

"Debate offers an ideal setting to instill confidence in our students so they learn how to use their voice effectively," says Blanchet, and also "learn how to discuss issues in a constructive way that's less ego-driven and more about working with others to develop the reasoning behind a stance they take."

Debate is not just for high school, she contends; it can be used effectively at the elementary and middle school level. "Students love being a part of a team," says Blanchet, "and having the chance to 'win' through strategy, presentation, and sound argument." She gives examples of prompts (claims) designed to provoke lively debates:

- Elementary ELA – After reading *Three Little Pigs vs. The True Story of the 3 Little Pigs!* by A. Wolf: *The big bad wolf is innocent*.
- Middle and high school ELA – *1984 – Your privacy is protected*.
- Elementary nutrition – *Vending machines in the school cafeteria are a good idea*.
- Middle and high school nutrition – *There should be a law banning soda and other foods with too much sugar*.
- Elementary environmental science – *Zoos should not exist*.
- Middle and high school ecology – *Recycling is enough to reduce plastic pollution*.
- Middle-school math – *Statistics are reliable*.
- Elementary social studies – *Superheroes like Batman are good citizens*.
- Middle and high school history – *Textbooks accurately reflect the events of the past*.

"You could also select a relevant current event, book, or article assignment," says Blanchet, "and provide a prompt."

She goes on to suggest a structure for a classroom debate, with students sometimes assigned to make an argument for a position with which they disagree. Ground rules are introduced (civility, no *ad hominem* attacks, listening carefully, not interrupting, managing emotions, trying to be objective) so students have a clear idea of how to politely exchange contrary ideas.

- Teams are formed, the topic is introduced, teams prepare, and then each team has three minutes for each round:
- The claim: students state their position.
- The data: students cite proof or evidence that backs their claim.
- The warrant: students interpret how the data support the claim.
- There might be two or more claim/data/warrant cycles per team.

- Teams take a five-minute break and prepare for rebuttal.
- Rebuttal – three minutes per team; no new information may be added at this time.
- Closing statements, three minutes per team, possibly including additional rebuttal statements.

"To be able to debate is a life skill," Blanchet concludes. "It equips us to be good citizens, to advocate for ourselves and the issues we care about, and to be effective in the workplace. Moreover, it encourages students to engage in content in a whole new way."

"Teaching Debate Across the Curriculum" by Michelle Blanchet in *Edutopia*, September 30, 2022

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## 5. Thinking About the Pledge of Allegiance

In this *Boston Globe* article, Steve Calechman traces the history of the Pledge of Allegiance, which is recited by millions of U.S. schoolchildren every morning. The original Pledge was penned in 1892 by Francis Bellamy for *The Youth's Companion*, a children's magazine based in Boston. Here's how it went: *I pledge allegiance to my flag and the republic for which it stands, one nation, indivisible, with liberty and justice for all*. Bellamy wrote the Pledge to reunify the U.S. after the Civil War, commemorate the 400th anniversary of Columbus's voyage, promote patriotism among Americans, and help Americanize the waves of immigrants arriving from Eastern and Southern Europe – and perhaps also to sell magazines and the stars and stripes.

In 1923, *the flag of the United States of America* was inserted to make clear to immigrants that it was the U.S. flag to which they were pledging allegiance. Then in 1954, the words *under God* were added; the Korean War had just ended, the Soviet Union was testing atom bombs, the Red Scare was in full swing, and national leaders wanted to be clear that Americans weren't godless communists.

What's up with children being asked to recite these words every morning? asks Calechman. "Forget for a second whether a child can make any kind of pledge that doesn't involve the awesomeness of ice cream or snow days," he says, "but this has the government telling kids to say nice words about it, which is kind of mind control-y if you want to believe such things."

Performing the Pledge doesn't seem to have that kind of power, he says; it's more of a check-the-box ritual. In addition, it's not clear that young students know what they're saying; how many second graders say *invisible*? And there's no evidence that over its 130-year history it's had a mind-control impact.

Empty as the daily performance can be, getting rid of the Pledge is a political non-starter. "It's not a statement for a school to maintain it," says Calechman. "It's a statement for a school to remove it." No politician or superintendent who wants to maintain their position is going to make that argument.

Much better, says Calechman, is to "get off autopilot" and use the Pledge to teach some basic civics: the origins of those 31 words, changes that were made over the years, why it's

recited, and the 1943 Supreme Court decision saying students have a constitutional right to abstain. Teachers might even orchestrate a classroom debate. "Kids would be fired up for the day and pick up a needed skill," he says, "because as it stands, we as a people are great at arguing, bad at listening, and worse at considering."

On the other hand, he continues, debates take up valuable time, and there's enough on teachers' plates already. "For all its faults," he says, "the Pledge is done in 10 seconds."

[When I was an elementary principal in Boston, my colleagues and I wrote a companion pledge that was recited by a student every morning over the PA system after the required Pledge of Allegiance. Here's the Mather School Pledge:

*I must work hard today,*
*Get smarter in every way,*
*Helped by my teachers, my parents, and my friends.*
*If I make some mistakes*
*I have what it takes*
*To keep trying till I really succeed.* K.M.]

"Schools Should Teach the Forgotten History of the Pledge of Allegiance" by Steve Calechman in *The Boston Globe*, October 2, 2022

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## 6. Teachers Least-Favorite Educational Buzzwords

In this *Education Week* article, Hayley Hardison reports the results of a social media poll of hundreds of educators on buzzwords they're most tired of hearing:

• *Rigor* – A seemingly non-rigorous lesson can be part of a progression toward intellectually challenging, grade-appropriate work, said one teacher. What's more, said another, learning can be fun and rigorous at the same time. "To me," said another, "true 'rigor' is the ability to push each student just a tidge past their comfort zone so they can be encouraged that they can indeed succeed."

• *Fidelity* – When administrators insist that a curriculum script be followed to the letter, said a teacher, "they are saying that they don't trust teachers to think for themselves and make appropriate decisions… It keeps lousy teachers from totally blowing it and prevents disasters, but it crushes the great teachers and prevents them from doing their magic."

• *Pivot* – Teachers are weary of this injunction, used constantly during the pandemic. They knew they needed to adapt; in fact, it's something they do many times a day.

• *Self-care* – This "implies teacher burnout is the result of something they are doing wrong as individuals and not a systemic problem," said a teacher – for example, poor working conditions, job overload, inadequate pay.

• *Grit* – Most of the children this word is applied to, said a teacher, are "already resilient, already handling situations and circumstances most of their educators have never encountered." Added another, students "should just be able to flourish and be great in environments that love and appreciate them for who they are and will be in the future."

• *Unpack* – "I don't see any luggage here," quipped a teacher. "Just use the word 'analyze,' said another. "A lesson should not be so complicated that it needs unpacking," said a third.

• *Learning loss* – This phrase "ignores the trauma and stress kids have experienced in order to quickly cram information into kids' heads instead of meeting kids where they are and moving them forward" said a teacher. "It demeans the work students, families, and staff did during the pandemic," said another.

• *Differentiation* – One teacher said this idea has been misused to "increase class sizes and place more and more and more responsibilities on classroom teachers and expect more and more results with the same amount of limited resources." Another said it was code for giving advanced work to high-performing students and multiple-choice items to the rest of the class.

• *Kiddos* – Using this word with high-school students is "like nails on a chalk board" for one teacher. "To me, it means they don't hold students accountable because they are just kiddos." Another teacher said the word is used mostly by administrators and others who aren't in classrooms on a daily basis.

• *Accountability* – The way this word is used, said one teacher, implies that educators won't do their best work unless they're prodded by administrators. The burden is on "overworked educators and students," said another, not parents, bureaucrats, and politicians.

"10 Buzzwords Educators Never Want to Hear Again" by Hayley Hardison in *Education Week*, October 5, 2022 (Vol. 42, #8, pp. 14-16)

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## 7. Recommended Elementary- and Middle-School Books About Bullying

In this *School Library Journal* article, Kimberly Olson Fakih recommends books addressing the issue of student-to-student bullying:

Picture books:

- *Lana Llama* by Lori Doody, preschool-grade 2
- *Giant Giant* by Dylan Hewitt, kindergarten-grade 2
- *What If Bunny's NOT a Bully?* by Lana Button, illustrated by Christine Battuz, preschool-K
- *The Boy with Flowers in His Hair* by Jarvis, preschool-grade 2
- *Boris the School Bully* by Diana Love, grade 1-2
- *Lunch Every Day* by Kathryn Otoshi, grade 1-3

Middle grades:

- *Chester Keene Cracks the Code* by Kekla Magoon, grade 3-7
- *Flipping Forward Twisting Backward* by Alma Fullerton, grade 3-7
- *Witchlings* by Claribel Ortega, grade 3-7
- *Out for Blood* by Steven Banks, illustrated by Mark Fearing, grade 3-6
- *In the Beautiful Country* by Jane Kuo, grade 5 and up

Middle grade graphic novels:

- *A-Okay* by Jarad Greene, grade 5 and up

- *Booked* by Kwame Alexander, illustrated by Dawud Anyabwile, grade 5-8

"Back to School Means Bullies, Too" by Kimberly Olson Fakih in *School Library Journal*, October 2022 (Vol. 68, #10, pp. 44-46)

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If you have feedback or suggestions,
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# About the Marshall Memo

## *Mission and focus:*

This weekly publication keeps principals, teachers, instructional coaches, superintendents, and other educators well-informed on current K-12 research and ideas. Kim Marshall, drawing on 53 years 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 150 articles each week, and selects 8-10 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 Tuesday (with occasional breaks; there are 50 issues a year). Every week there's also a podcast and HTML version.

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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 Express
Cult of Pedagogy
District Management Journal
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
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