Marshall Memo 345

A Weekly Round-up of Important Ideas and Research in K-12 Education
July 19, 2010

In This Issue:

Quotes of the Week

"The plural of anecdote is not evidence."

Quoted by Grover Whitehurst in "Scientifically Based Research on Teacher Quality: Research on Teacher Preparation and Professional Development" delivered at the White House Conference on Preparing Tomorrow's Teachers, March 5, 2002

"If you have a principal who knows there's a poor-performing teacher and chooses not to evaluate him or her effectively, who's really the incompetent person?"

Rob Weil, quoted in "'Mutual Consent' for Teacher Placement Gains Traction" by Stephen Sawchuk in *Education Week*, July 14, 2010 (Vol. 29, #36, p. 6-7) http://www.edweek.org/ew/articles/2010/07/14/36placement_ep-2.h29.html

"While our creativity scores decline unchecked, the current national strategy for creativity consists of little more than praying for a Greek muse to drop by our houses."

Bo Bronson and Ashley Merryman (see item #1)

"Creativity isn't about freedom from concrete facts. Rather, fact-finding and deep research are vital stages in the creative process."

Bo Bronson and Ashley Merryman (*ibid*.)

"Ultimately, decisions made on such limited data are destined to waste time and money, fail to achieve the larger goal of improving student learning, and fall short in meeting the needs of the students most at risk."

Sheila Valencia, Antony Smith, Anne Reece, Min Li, Karen Wixson, and Heather Newman, commenting on quick reading fluency assessments (see item #3)

"Early vocabulary consistently predicts children's later reading achievement."

Rebecca Silverman and Jennifer DiBara Crandell (see item #4)

"The Internet culture may produce better conversationalists, but the literary culture still produces better students."

David Brooks (see item #2)

1. Creativity Can Be Taught

In this important *Newsweek* cover story, Po Bronson and Ashley Merryman report that while Americans' average I.Q.s has been rising 10 points each generation (the so-called Flynn effect), creativity has been *falling* since 1990, with the steepest declines among children from kindergarten to grade 6. Part of the problem, say the authors, is that we assume creativity is a gift that can't be taught. "While our creativity scores decline unchecked," they say, "the current national strategy for creativity consists of little more than praying for a Greek muse to drop by our houses. The problems we face now, and in the future, simply demand that we do more than just hope for inspiration to strike."

How do we know creativity is declining? From a massive study using the well-regarded Torrance assessment, which asks people to generate ways of using everyday objects differently and/or improving them. And why is it declining? Researchers aren't sure yet, but one likely suspect is the amount of time young people are mesmerized by television and video games. Another is that schools have devoted less time to creative activities in recent years – unlike many other countries, which are making a concerted effort to develop creativity in schools.

But isn't creativity innate – either you have it or you don't? And shouldn't schools be sticking to basics to prepare students for the 21st century and let "gifted" students develop creativity in the art room? Wrong, wrong, and wrong, say Bronson and Merryman. Creativity is "part of normal brain function" and *can* be developed, they contend, and it's important in all subject areas from music to engineering. "The argument that we can't teach creativity because kids already have too much to learn is a false tradeoff," they say. "Creativity isn't about freedom from concrete facts. Rather, fact-finding and deep research are vital stages in the creative process." Students can, in fact, meet and go beyond today's curriculum standards through more creativity-based instructional approaches.

Bronson and Merryman also puncture the notion that creativity is exclusively a "right-brain" activity. Here's the sequence of mental activity that occurs when a person solves a problem:

- Focusing on obvious facts and familiar solutions to see if the answer lies there;
- If not, scanning and evaluating remote memories for unseen patterns and alternative meanings;
- Zeroing in on a promising idea – the "aha!" moment;
- Evaluating that idea – is it worth pursuing?

"Creativity requires constant shifting, blender pulses of both divergent thinking and convergent thinking, to combine new information with old and forgotten ideas," say Bronson and Merryman.

Yes, some people are innately better at divergent thinking than others, they say, but creativity training that aligns with the new insights from brain science can be remarkably effective. "Creativity can be taught," says California State University/San Bernardino professor James Kaufman. The key is alternating between intense divergent thinking and intense convergent thinking several times. "Real improvement doesn't happen in a weekend workshop," say Bronson and Merryman. "But when applied to the everyday process of work or school, brain function improves."

What would this look like in a school? Here's a problem posed to fifth graders last year at the National Inventors Hall of Fame School in Akron, Ohio – a school that devotes three-quarters of each day to project-based learning: Reduce the noise in the library, whose windows face a busy public space. Working in small teams, students had four weeks to come up with proposals. Here's how they proceeded (with plenty of support and guidance along the way):

- Fact-finding – How does sound travel through materials? What materials reduce noise the most?
- Idea-finding – Generating as many ideas as possible – drapes, plants, large kites hung from the ceiling to baffle sound, masking the outside noise with a gentle waterfall, double-paned glass, filing the space between panes of glass with water, an aquarium with fish as the barrier, etc.
- Solution-finding – Which ideas are the most effective, most affordable, and most aesthetically pleasing? Safest?
- A plan of action – Building scale models, choosing fabric samples, figuring out who would take care of plants and fish over vacations, etc.
- Problem-finding – Anticipating all potential problems so their designs are more likely to work;
- Presenting the plan – The audience was teachers, parents, and an outside expert.

In the process, students had fun, came up with great ideas to solve a real-world problem, and mastered large chunks of Ohio's required fifth-grade curriculum, including understanding sound waves, per-unit cost calculations, and persuasive writing. The school's state test scores soared this year. "You never see our kids saying, 'I'll never use this so I don't need to learn it,'" says school administrator Maryann Wolowiec. "Instead, kids ask, 'Do we have to leave school now?'"

Here are some of the other activities at different age levels that have successfully developed creativity:

- Preschool – Role-playing and acting out characters helps children see things from a different perspective.
- Middle childhood – Creating paracosms, or fantasies of entire alternative worlds.
- Fourth grade on – As the curriculum becomes more content-rich, it's helpful if teachers are willing to entertain unconventional answers and "detours of curiosity."

It's a myth that creative people are depressed, anxious, and neurotic, say Bronson and Merryman. The reason creative students sometimes drop out is that they become discouraged and bored in creativity-stifling schools. In fact, a gloomy mindset shuts down creativity. People who score high on creativity assessments tend to be more confident about the future, have stronger relationships, and deal better with setbacks. It's uncreative people who are at risk.

In a sidebar at the end of the article, Bronson and Merryman sum up specific advice for educators and parents:

• *Forget brainstorming*. Research at Yale University in 1958 showed that brainstorming actually reduces a team's creative output; the same people, working individually, can come up with more and better ideas.

• *Imagination exercises don't work*. It's a myth that all you have to do is let your natural creativity run wild. There's much more to being creative than that.

• *Don't tell someone to be creative*. "Such an instruction may just cause people to freeze up," say Bronson and Merryman. Here's a better approach from University of Georgia professor Mark Runco: "Do something only you would come up with – that none of your friends or family would think of." Using this approach, he's doubled people's creative output.

• *Reduce screen time*. For every hour spent watching TV, says University of Texas professor Elizabeth Vandewater, overall time on creative activities like fantasy play and art projects drops as much as 11 percent.

• *Exercise*. "Almost every dimension of cognition improves from 30 minutes of aerobic exercise," say Bronson and Merryman. "The type of exercise doesn't matter, and the boost lasts for at least two hours afterward." But this works only for people who are physically fit. For those who aren't, fatigue counteracts the benefits.

• *Get immersed in a passion*. "Kids do best when they are allowed to develop deep passions and pursue them wholeheartedly – at the expense of well-roundedness," say Bronson and Merryman. American Psychological Association researcher Rena Subotnik has found that children who dive into one area and become expert in it have better self-discipline and handle setbacks more effectively.

• *Forget the suggestion box*. Formalized suggestion boxes and e-mail surveys actually stifle innovation, says ESCP Europe Business School Isaac Getz, because employees often feel that their ideas will be lost in the bureaucracy. Toyota's plant in Georgetown, KY has been highly successful because it implements up to 99 percent of employees' suggestions.

• *Take a break*. Multitasking has been shown to undermine focus and productivity, but it's a good idea to shift from one creative project to another.

• *Explore other cultures*. Living abroad, being exposed to people from other countries, or even watching a slide show about another culture helps people be more adaptable and flexible.

"The Creativity Crisis" by Po Bronson and Ashley Merryman in *Newsweek*, July 19, 2010 (p. 44-50), http://www.newsweek.com/2010/07/10/the-creativity-crisis.html

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2. David Brooks on Books Versus the Internet

In this thoughtful *New York Times* column, David Brooks reports on a program that gave inner-city children twelve books each (they got to choose them) for three summers in a row. Researchers led by Richard Allington found that these students' reading test scores improved significantly. "In fact," says Brooks, "just having those 12 books seemed to have as much positive effect as attending summer school." This study, and others like it, show the power of books, especially in homes that don't have many.

Conversely, a recent study of grade 5-8 students in North Carolina found that increasing use of computers (thanks to high-speed Internet access) has been linked to big declines in reading and math achievement. This meshes with the point made by Nicholas Carr in his book, *The Shallows* – that e-mail, Facebook, Twitter, and the Internet are creating a short-attention-span culture in which young people's minds flit around on the surface and don't engage in serious contemplation.

"The Internet-versus-books debate is conducted on the supposition that the medium is the message," says Brooks. "But sometimes the medium is just the medium. What matters is the way people think about themselves while engaged in the two activities." As young people begin reading books and build a library at home, he says, "they see themselves as readers, as members of a different group… A person enters this world as a novice, and slowly studies the works of great writers and scholars. Readers immerse themselves in deep, alternative worlds and hope to gain some lasting wisdom."

The world of the Internet is entirely different. It's egalitarian. Youth gets more respect than age. "The dominant activity is free-wheeling, disrespectful, antiauthority disputation," says Brooks. The Internet certainly helps a person be well-informed and hip, but it doesn't make a person cultivated, well-educated, or a master of things of lasting import. "To learn these sorts of things," he says, "you have to defer to greater minds than your own. You have to take time to immerse yourself in a great writer's world. You have to respect the authority of the teacher… The Internet culture may produce better conversationalists, but the literary culture still produces better students."

Brooks concedes that this may change in the future as serious thinkers make greater inroads in the Internet and create a counterculture that will attract more people to deeper learning.

"The Medium is the Medium" by David Brooks in *The New York Times*, July 9, 2010
http://www.nytimes.com/2010/07/09/opinion/09brooks.html?_r=1&scp=1&sq=The%20Medium%20is%20the%20Medium%20David%20Brooks&st=cse

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3. Three Concerns about DIBELS, TPRI, and PALS Assessments

In this important *Reading Research Quarterly* article, a six-person team of researchers led by University of Washington/Seattle professor Sheila Valencia analyzes oral reading fluency assessments in grades 2, 4, and 6. The authors define fluency as "the ability to read text

quickly, accurately, with proper phrasing and expression, thereby reflecting the ability to simultaneously decode and comprehend."

They found that words-correct-per-minute (wcpm) assessments like those included in the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), the Texas Primary Reading Inventory (TPRI), and the Phonological Awareness Literacy Survey (PALS) are very common – more than 2 million students in 49 states have been given oral reading tests that produce a score in wcpm. Often these scores are an integral part of accountability, curriculum, and instruction. The authors believe there are three problems with wcpm-based fluency assessments:

• *They don't do a very good job of predicting general comprehension*. One-minute wcpm assessments are largely a measure of reading rate. The authors point out that "one can read quickly and accurately – and even with some prosody – yet not understand, most especially at the higher levels of comprehension. Conversely, when reading to understand complex text, good readers adjust their rates, slowing to monitor, think, reread, and such to understand… oral reading fluency is situational and strategic when readers are attending to meaning and decoding."

• *The emphasis on assessing oral reading rates leads many teachers to over-emphasize speed in day-to-day instruction – at the expense of comprehension*. This is especially common in high-stakes environments where teachers believe that increasing students' reading rate is a good form of test preparation.

• *There is a high rate of false positives and false negatives when using quick wcpm reading assessments to identify students for special services*. In other words, such assessments result in the referral of significant numbers of students who don't need special services and miss significant numbers of students who do. This is particularly true of students struggling with reading comprehension and English language learners.

The authors conclude that it's vital for teachers to use a better assessment of fluency. "Comparing various models for assessing oral reading fluency," they say, "we found that a model composed of separate measures of rate, accuracy, and prosody accounted for a statistically significant increase in variance in comprehension scores across all grades compared with a single measure of wcpm or even a model that added prosody to wcpm… Our three-factor assessment model also confirmed the growing importance of prosody as an indicator of oral reading fluency and a strong correlate of comprehension at all grades but most especially at later stages of reading development." This is most true when fluency is defined broadly as the student's ability to pay attention simultaneously to rate, accuracy, prosody, and comprehension. This kind of assessment aligns with the ultimate goal of reading instruction – comprehension.

The authors note that the kind of assessment they favor is very similar to the informal reading inventories and leveled reading passage assessments being used in many schools. "Although the time to administer such assessments is more than the 3 minutes needed to administer three 1-minute timed readings," they say, "we believe that alignment with the

fluency construct and the quality of information provided by such assessments make the process worthwhile."

"Clearly, wcpm scores do not provide the depth or breadth of information needed to make good instructional decisions or programmatic recommendations," the authors conclude. "The wcpm metric itself obscures the relationship between accuracy and automaticity, and it fails to capture other critical aspects of skilled reading. Ultimately, decisions made on such limited data are destined to waste time and money, fail to achieve the larger goal of improving student learning, and fall short in meeting the needs of the students most at risk. Schools and teachers need to put wcpm data in perspective and to base programmatic and instructional directions on more complete assessments of students' needs."

"Oral Reading Fluency Assessment: Issues of Construct, Criterion, and Consequential Validity" by Sheila Valencia, Antony Smith, Anne Reece, Min Li, Karen Wixson, and Heather Newman in *Reading Research Quarterly*, July/August/September 2010 (Vol. 45, #3, p. 270-291); Valencia can be reached at Valencia@u.washington.edu.

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4. Prekindergarten and Kindergarten Vocabulary Instruction

"Early vocabulary consistently predicts children's later reading achievement," say Rebecca Silverman (University of Maryland/College Park) and Jennifer DiBara Crandell (Harvard) in this *Reading Research Quarterly* article. "Research has shown that young children learn words from interactions with adults, direct instruction of vocabulary words can be an effective method to support children's word learning, and combining vocabulary instruction practices is more effective than using one practice alone."

But which are the best practices? Below are Silverman's and Crandell's findings from an observational study of 16 early-childhood classrooms. They analyzed which of five vocabulary development practices were associated with higher performance on norm-referenced and curriculum-based tests and which weren't; whether there were differences between students who entered with strong vocabularies and those who didn't; and whether teachers who taught vocabulary beyond the readaloud portion of the school day got better results.

• *Acting out and illustrating words during readaloud time* – Combining verbal and non-verbal explanations of new words helped students who entered with low vocabulary knowledge but was not helpful for students with strong initial vocabularies (who most likely already knew the words and were more interested in discussing them).

• *Analyzing words semantically* – Encouraging students to reflect on language and processing word meaning more deeply showed no effects on vocabulary achievement – but it was rarely used by the teachers in the study. Silverman and Crandell comment, "It is interesting that even though use of this practice has been recommended in previous research, it was not widely used by the highly educated and well-supported teachers in this study."

• *Applying words in new contexts* – Teachers provided examples of the words outside of the story in which the words were first encountered, often in the non-readaloud portion of the

day. This practice boosted achievement among high-vocabulary but not among low-vocabulary students. Why? Silverman and Crandell theorize that students with weaker vocabularies are less able to relate new vocabulary to new contexts and may, in fact, have been distracted from learning the word in the immediate context.

• *Defining words explicitly in a rich context* – Explicitly teaching students the definitions of new words in the context of rich conversations or storybook reading is perhaps the most universally recommended vocabulary strategy, say Silverman and Crandell. In the study, all students benefited from this approach, but it had a slightly more positive effect on students who already had strong vocabularies. This might be because children with lower vocabulary knowledge need more scaffolding to learn definitions that are introduced outside the context of readalouds.

• *Word study* – This involves focusing attention on the letters and sounds of vocabulary words. In the study, all students benefited from this approach.

In addition to these specific findings, Silverman and Crandell concluded that teachers who taught vocabulary outside the readaloud time (as well as within it) got better results. "Research that focuses solely on readaloud time may be missing part of the puzzle of vocabulary instruction," they say.

"Vocabulary Practices in Prekindergarten and Kindergarten Classrooms" by Rebecca Silverman and Jennifer DiBara Crandell in *Reading Research Quarterly*, July/August/September 2010 (Vol. 45, #3, p. 318-340); the authors can be reached at rdsilver@umd.edu and Jennifer_dibara@mail.harvard.edu.

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Do you have feedback? Is anything missing?

If you have comments or suggestions, if you saw an article or web item in the last week that you think should have been summarized, or if you would like to suggest additional publications that should be covered by the Marshall Memo, please e-mail: kim.marshall8@verizon.net

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 37 years' experience as a teacher, principal, central office administrator, and writer, lightens the load of busy educators by serving as their "designated reader."

To produce the Marshall Memo, Kim subscribes to 44 carefully-chosen publications (see list to the right), sifts through more than a hundred articles each week, and selects 5-10 that have the greatest potential to improve teaching, leadership, and learning. He then writes a brief summary of each article, pulls out several striking quotes, provides e-links to full articles when available, and e-mails the Memo to subscribers every Monday evening (with occasional breaks; there are about 50 issues a year).

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Publications covered

Those read this week are underlined.

American Educator
American Journal of Education
American School Board Journal
ASCD, CEC SmartBriefs, Daily EdNews
Catalyst Chicago
Ed. Magazine
EDge
Education Digest
Education Gadfly
Education Next
Education Week
Educational Leadership
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Edutopia
Elementary School Journal
Essential Teacher (TESOL)
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Journal of Staff Development
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Middle Ground
Middle School Journal
New York Times
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Principal Leadership
Principal's Research Review
Reading Research Quarterly
Reading Today
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The Language Educator
The Learning Principal
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