Marshall Memo 86

A Weekly Round-up of Important Ideas and Research in K-12 Education
May 9, 2005

In This Issue:

Quotes of the Week

"Most of these kids will be hourly wage workers."

A high-school teacher in Montgomery County, Maryland, quoted in an article by former *Washington Post* education columnist Karin Chenoweth, whose daughter attended the school (*Education Week*, May 4, 2005, p. 39)

"Show us the kids, and we'll teach them."

Eighth-grade science teacher in Belleville, Illinois (see item #1)

"At the top of the list of critical abilities for a leader is the ability to persuade. You have to get people excited about where you want to go."

John Fryer, Duval, Florida superintendent (*Education Week*, May 4, 2005, p. 10)

"[P]eople fear the future. The future is unstable, unknown, and therefore potentially dangerous. So, in order to succeed, leaders must engage our fear of the unknown and turn it into spiritedness. By far the most effective way to turn fear into confidence is to be clear – to define the future in such vivid terms that we can see where we are headed. Clarity is the antidote to anxiety, and therefore clarity is the preoccupation of the effective leader. If you do nothing else as a leader, be clear."

Marcus Buckingham, interviewed in *Fast Company*, March 2005
(spotted in *Results*, National Staff Development Council, May 2005)

"[T]here is no Alabama or New York or Oregon math. There is one math, and its most advanced form should be taught."

Joseph Gottfried (in a letter to the *New York Times* May 2, 2005)

1. Searching for the Key Characteristics of Effective Schools

Carrying on the "effective schools" research tradition that began with George Weber and Ronald Edmonds in the 1970s, the National Center for Educational Accountability (a nonprofit based in Austin, Texas) has studied more than 400 high-performing schools to explain why they do so much better than other schools with similar student populations. Unlike some recent studies of successful schools that have been criticized for profiling schools with a one-year track record of high achievement, the NCEA studies schools with three consecutive years of high performance on state tests in multiple grades and subjects.

NCEA has found that educators in these schools are not always able to articulate the reasons for their exceptional performance, so researchers ask a set of carefully-framed questions based on a theory of best practice, for example: "How do teachers know exactly what is to be learned in their grades and subjects?" "What's their involvement in curriculum development?" and "How does the school provide instructional support for teachers?"

A number of school effectiveness factors are showing up quite consistently in NCEA's research. According to Jean Rutherford of the Center, high-performing schools "sound, walk, and talk alike, not in a negative way, but in an enthusiasm, a positive sense of efficacy." As one eighth-grade science teacher in a top-notch school in Belleville, Illinois said, "Show us the kids, and we'll teach them." Another factor that sets successful schools apart is having clear and specific academic goals for students, rooted in state content standards and continually updated at the district level. "That clearly has emerged as the bedrock foundation," says Rutherford. "This penetrating, deep understanding of what it is children are to know and be able to do and how to connect it across grades." Other factors:

• Exit tests are given at the end of each year, crafted and refined by committees of classroom teachers, to measure whether students are learning the objectives.

• In the summer and early fall, teachers and principals pore over test results to identify targets for the coming year and how they will be addressed.

• School improvement plans are focused on explicit improvement of specified academic objectives.

• The school emphasizes teacher collaboration in grade-level or subject-area teams focused on student work.

• The school recognizes, intervenes, and adjusts based on student learning results.

• Teacher hiring and professional development are focused on whether students are making learning gains.

• The school insists on using evidence-based programs, practices, and arrangements in every classrooms.

• New instructional strategies (e.g., Reading Recovery) are piloted in a few schools or classrooms to make sure they really work before being adopted in other schools.

• The school fosters a strong, positive relationship with every student and a schoolwide sense of community.

"Sleuths Seek Secrets of High-Flying Schools" by Lynn Olson in *Education Week*, May 4, 2005 (Vol. 24, #34, p. 1, 24, 25)
http://www.edweek.org/ew/articles/2005/05/04/34outliers.h24.html

2. Ideas on Career-Ladder Options for Teachers

Many of today's teachers want to have multiple careers, both inside and outside of education; many want to continue working with children and don't aspire to be administrators; even so, most teachers want to have some say in decisions that affect their classrooms and schools; teachers want to be paid as well as comparably trained professionals in other fields. Jack Dale, the superintendent of schools in Fairfax County, Virginia, says that because of these new realities, we need to rethink teacher career paths and compensation. Here are some of the possible "maxi-teacher" roles he suggests for this new era, each involving extra pay for a longer work year:

• *School improvement teacher leader* – 11 months of work (including regular teaching duties) with additional school leadership responsibilities shared with the principal.

• *Feeder/cluster-improvement teacher leader* – 11 months of work (including regular teaching duties) focused on connections to and collaboration with schools within a K-12 cluster that students will attend during their school careers.

• *New-teacher trainer/mentor* – 11 months of work (including regular teaching duties) focused on training new teachers prior to the start of school, and mentoring new staff members during the school year.

• *Extended student learning* – 11 months of work (including regular teaching duties) focused on tutoring and nurturing students performing below grade level. Such work would be done after school, during school breaks, and at other times as needed.

• *Student-transition leadership* – 11 months of work (including a regular teaching assignment) focused on analysis of individual students' academic and social progress, and coordination of support services for children who need additional social or transition skills.

"A Teacher-Compensation System for the 'No Child' Era" by Jack Dale in *Education Week*, May 4, 2005 (Vol. 24, #34, p. 38-39)
http://www.edweek.org/ew/articles/2005/05/04/34dale.h24.html

3. Why Don't More Girls Want to Pursue Math and Science Careers?

During the middle and high school years, girls' average math and science grades are better than boys'. Yet girls tend to be less confident in these subjects and increasingly avoid them, and boys outperform girls on AP exams and are overrepresented in math- and science-related careers. What's going on? This *Education Week* article explores several theories:

• *Girls want social interaction*. Some researchers speculate that young women shy away from more technically-oriented fields like engineering because they think there will be fewer opportunities for interaction with other people. Societal influences and other factors may lead girls to value more group-oriented work. If this theory is true, teachers should include cooperative, project-oriented learning experiences in math and science classes and stress real-world applications.

• *Girls are less confident in math and science.* These self-doubts emerge in middle and high school despite the fact that girls, on average, do better than boys in these subjects. "They don't take as many risks," noted JoAnne Rodkey, principal of a Florida elementary school. "If they don't know the answer, they don't raise their hands. They want to know they're right… The boys will raise their hands, even if they

don't know the answer." If this is true, teachers should take extra care to get girls to participate actively in math and science classes, even if boys are more assertive.

• *Girls are subtly discouraged from pursuing these subjects.* Stereotypes that math and science "aren't for girls" are conveyed by some teachers, even female teachers (67 percent of middle school math and science teachers are women, as are 49 percent at the high school level). If this is true, schools need to actively encourage girls to stay interested in math and science, perhaps by bringing in a mix of male and female role models who have been successful in those fields.

• *Girls' brains are organized differently.* This theory, which has been getting a lot of attention since a recent comment by Harvard president Larry Summers, suggests that the way teachers present math and science has been biased toward the male "cognitive style" and needs to be adjusted to create a level playing field for girls. Leonard Sax, author of *Why Gender Matters*, believes that boys benefit from a straightforward presentation of numbers, whereas girls benefit from "real world" explanations and applications. He also says that girls tend to do better when teachers look them in the eye during lessons, whereas boys see this as threatening. Sax says that teachers need to work "twice as hard" to accommodate the different learning styles of boys and girls in the classroom. "Everything you do needs to be different, if you want to make math, physics, and computer science girl-friendly," he says. But others dispute this theory. "We don't have a male brain or a female brain," says Harvard psychology professor Elizabeth Spelke. "We have a human brain with a whole lot of commonality."

"Educators Revisit Girls' Loss of Math, Science Interest" by Sean Cavanagh in *Education Week*, May 4, 2005 (Vol. 24, #34, p. 6)
http://www.edweek.org/ew/articles/2005/05/04/34gender.h24.html?querystring=Sean%20Cavanagh

4. Success for All: A Middle-School Adaptation

Robert Slavin and his colleagues at Johns Hopkins have adapted their elementary school improvement model, Success for All, for middle schools. Initial evaluations of schools piloting the middle school model are positive. Here are its key features:

• *Interdisciplinary clusters* – Students are grouped in units with one teacher for each subject area; the idea is to provide students with a smaller core group of peers and a small team of caring adults who attend to academic and social needs.

• *Reading* – Proficient, on-level reading is a major goal of the program. All students have reading in a 60-minute block every day. All staff (including art, music, physical education, and other special subject teachers) teach reading during this block, which reduces class size and maximizes the use of different reading strategies across the curriculum. Success for All's middle school model uses The Reading Edge, a program that emphasizes phonics, fluency, vocabulary, basic and advanced comprehension strategies, and cooperative learning.

• *Reading assessment, grouping, and regrouping* – During the daily reading block, students are grouped homogenously. Every eight weeks, students are reassessed and regrouped according to the progress they have made.

• *Humanities* – English and social studies units are taught in two-period blocks each day, with an emphasis on making practical use of reading, writing, and analytical skills and connecting past events to students' own lives. For example, a unit on ancient Egypt challenges students to solve the mystery of a tomb robbery, with each student taking on the role of a possible suspect from the ranks of Egyptian society.

• *Science* – Units present students with a scenario or a problem; for example, in a unit entitled "Earthquake!" students get information on a fictitious town situated on a geological fault. They learn about plate tectonics, wave structure and energy, read maps and text, organize data into charts and graphs, draw conclusions, and present their findings. Finally, students come up with recommendations on land use, earthquake-resistant building designs, and other issues affected by the threat of an earthquake.

• *Cooperative learning* – As much as possible in all subject areas, students work in cooperative groups of four (diverse in terms of achievement level, gender, and ethnicity). Students help each other learn but must ultimately show individual mastery.

• *School and family success* – A team within each school discusses attendance, intervention for struggling students, family involvement, working with community agencies, and building students' social problem-solving skills.

• *Facilitation* – Each Success for All school has a full-time facilitator who coordinates the program.

"'Success for All' Middle Schools Add Content to Middle Grades Reform" by Robert Slavin, Cecelia Daniels, and Nancy Madden in *Middle School Journal*, May 2005 (Vol. 36, #5, p. 4-8), no e-link available for the article; see http://www.successforall.net for information on the middle school program.

5. Study Skills for Middle-School Students

In this article, two North Carolina professors summarize best practices for teaching study skills. They begin with three observations: (a) research does not show that any single study skill is superior, so students should be exposed to a variety of strategies; (b) study skills are best taught in the context of subject-area classes, not in homeroom or a special study skills class; and (c) students need specific strategies to help them organize and focus their study time when they are preparing for tests.

The authors then describe several study skills strategies:

• *KWL* – Students make lists of what they Know, Want to know, and have Learned. This time-honored strategy is helpful, but many students tend to read passages too quickly and not focus on the most important information. KWL needs to be supplemented with…

• *Check and line* – Students are taught to put a light pencil check ✓ in the margin by material they grasp and a minus sign – by material they don't understand. Students finish reading the paragraph and then go back to the lines that caused difficulty, using the GMR strategy: Go back, Motivate your brain, and Reread. If they still don't get it, students get help from a peer, a print or online source, or the teacher.

• *Math journal* – In a notebook, students write about concepts in their own words, make real-world connections, write relevant formulas and theorems, and draw pictures that will help them understand and remember important concepts when they go back to study.

• *Study cards* – Students write key vocabulary or concepts on one side and definitions and examples on the back.

• *THIEVES* – This is a strategy for reading a passage in a way that activates prior knowledge, develops a purpose, and establishes a mental set for reading. The acronym stands for the following prompts:

Title – What do I know about the topic? What will I be reading about?

Headings – Turn each heading into a question and try to answer it.

Introduction – What do I already know about this topic? What else does the introduction tell me?

Every first sentence – Read the first sentence of every paragraph to get a sense of what the chapter is about.

Visuals and vocabulary – What do the maps, pictures, charts, and graphs tell me about the chapter? What have I learned from the boldfaced or

italicized vocabulary or concepts in the chapter?

End-of-chapter questions – What kinds of information do the questions ask for? What do I need to pay attention to while reading?

Summary – Read this and rewrite in your own words.

"Activating Study Skills in the Middle School Classroom" by Bruce Taylor and Karen Wood in *Middle School Journal*, May 2005 (Vol. 36, #5, p. 51-55), no e-link available.

6. Poetry in Science Classes

In this off-beat *Middle School Journal* article, two professors urge science teachers to get their students writing poetry as a way of using their imaginations and writing skills to learn scientific content better. Why poetry? The authors argue that:

- It helps develop children's facility with figurative language, a precursor to the abstract thinking necessary for success in science.
- It helps children develop voice in their written work, a step toward writing like a scientist.
- Collaborative poetry writing helps children function as problem solvers rather than information receivers.
- Creating visual images is a strategy that improves information retention in the content areas.
- Writing poetry requires students to become careful observers, a skill that all scientists must develop.
- It gets children to compare and contrast, summarize, describe, and interpret.
- The brevity of poetry is appealing to novice writers.

The authors provide an annotated list of 31 books that link science and poetry (including *Dem Bones* by B. Barner and *Moon Frog: Animal Poems from Nature* by R. Edwards), and then suggest a number of templates for structuring students' initial attempts to write poetry in science classes:

• *I used to be… but now poems.* At the end of a lesson, students can use this template to describe science concepts and summarize what they have learned. For example:

I used to be a seed,
But now I am a seedling.
I used to be a seedling,
But now I am an apple blossom.
I used to be an apple blossom,
But now I am an apple.

• *Alphabet pyramids* – These are cumulative poems that contain specific parts of speech that begin with the same letters:

Line 1: the letter;

Line 2, a noun;

Line 3, add an adjective;

Line 4, add a verb;

Line 5, add an adverb.

The teacher can assign a scientific word to individual students or small groups and ask for an alphabet pyramid; depending on the part of speech of the assigned word, students can add additional adjectives, adverbs, nouns, and verbs. For example:

L
Lightning
Luminous lightning
Luminous lightning lights
Luminous lightning lights locally.

• *Terquain, cinquain, and diamante* – These stylized poetry formats lend themselves to comparing and contrasting scientific concepts. If students write a report during a science unit, they could include poems in this format to represent what they have learned. Terquains contain:

Line 1: one word, the subject;

Line 2, one or two words about the subject;

Line 3, one word, a feeling about the subject.

For example:

Venus
Intense heat
Scorching

Cinquains contain:

Line 1, the subject;

Line 2, four syllables describing the subject;

Line 3, six syllables showing action;

Line 4, eight syllables expressing a feeling or observation about the subject;

Line 5, two syllables renaming the subject.

For example:

Heart
Strong, fist-sized pump
Squeezing and pushing
An amazing, non-stop wonder
Life source

Diamantes compare opposites using specific parts of speech:

Line 1, noun for the subject;

Line 2, two adjectives describing the subject;

Line 3, three participles;

Line 4, four nouns, two about the subject, two about its antonym;

Line 5, three participles describing the antonym;

Line 6, two adjectives;

Line 7, the antonym.

For example:

Fish
Small Cold-blooded
Swimming Laying eggs Breathing water
Scales Gills / Blubber Blowholes
Migrating Mothering Breathing air
Gigantic Warm-blooded
Whales

• *Haiku and Tanka* – These Japanese poetry formats are ideal for the study of nature. Objects in the classroom (e.g., shells, rocks, feathers, nests, fossils) could be arranged on a table for students to examine and describe.

Haiku contain three lines and 17 syllables arranged in a 5-7-5 pattern, for example:

Ocean breezes blow
Frothy waves of water leave
Behind the treasure

Tanka contain five lines and 31 syllables arranged in a 5-7-5-7-7 pattern, for example:

Hibernation
Let's get away from it all
Retreat into caves
Sleeping until spring arrives
Nature's alarm clocks are set

• *Fill in the blank poems* – Students can choose one facet of something they have studied and carefully choose words in the format.

I like...

Adjective… Noun… (repeated four times);

Any kind of…

I like…

Noun…. Prepositional phrase… (repeated four times);

I like…

Adjective…. Noun…. (repeated six times);

I like…

For example:

I like bugs!
Sticky bugs
Spindly bugs
Speckled bugs
Striped bugs
Any kind of bugs
I like bugs!
Bugs on a leaf
Bugs in the ground
Bugs caught in webs
I like bugs!
Fragile bugs
Hearty bugs
Helpful bugs
Scary bugs
Cautious bugs
Bold bugs
I like bugs!

• *Definition poems* – Vocabulary is a challenge in science teaching, and this format gets students to take a word and present it in a vivid way. The definition poems from a class could be compiled in a booklet for the whole class to study. The format:

Name it

Describe it

Tell where it would be found

Tell more about it

Use emotion words to tell how you feel about this

Explain why you used the emotion words in line 5.

For example:

Madagascar Hissing Cockroach
Found on the island of its name
Sleek, quick, and wingless
I flinch when it hisses
Forgetting it is just protecting itself.

"Writing Poems to Gain Deeper Meaning in Science" by Jan LaBonty and Kathy Everts Danielson in *Middle School Journal*, May 2005 (Vol. 36, #5, p. 30-36), no e-link available.

7. Short Items:

a. Business partnership guide – The Council for Corporate and School Partnerships has a how-to guide with practical advice on setting up a school-business partnership. Topics include staff development, curriculum development, policy

development, instructional development, guidance, mentoring, tutoring, incentives and awards, or financial and material resources. The guide is available online at http://www.corpschoolpartners.org/guide.shtml.

Spotted in *PEN Weekly NewsBlast* May 6, 2005

b. The elements song – For middle and high-school science classes studying the elements, this might be a useful resource: the lyrics of Tom Lehrer's song rattling off all the elements and a Quicktime recording of him performing the song. Check out http://chemlab.pc.maricopa.edu/periodic/lyrics.html

Spotted in *Middle School Journal*, May 2005 (Vol. 36, #5, p. 24)

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 best practices in K-12 education. Kim Marshall, drawing on 35 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 39 carefully-chosen publications (see list to the right), sifts through scores of 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, provide e-links to full articles when available, and e-mails the memo to subscribers every Monday (with occasional breaks; there were 50 issues in 2003-04).

Subscriptions:

Individual subscriptions are $50 for the school year ($25 for a half-year, beginning late January). Rates decline steeply for multiple readers within the same organization. See the website for these rates and information on paying by check or credit card.

Website:

If you go to http://www.marshallmemo.com you will find detailed information on:

- How to subscribe or renew
- Why the Marshall Memo?
- Focus topics
- Headlines for issues 1-68
- What readers say
- About Kim Marshall
- A free sample issue

Subscribers have access to the Members' Area of the website, which has:

- The current issue (in PDF or Word format)
- All back issues (also in PDF or Word)
- A database of all articles to date, searchable by topic, article headline, source, article title, author, and level
- How to change access e-mail or password

Publications covered:

(those read this week are underlined)

American Educational Research Journal
American Educator
American School Board Journal
ASCD SmartBrief
Atlantic Monthly
Bay State Banner
Boston Globe
CommonWealth Magazine
District Administration
Ed. Magazine (Harvard School of Education)
Education Digest
Education Gadfly
Education Next
Education Update (ASCD)
Education Week
Educational Leadership
Educational Researcher
Edutopia
Elementary School Journal
Harper's
Harvard Business Review
Harvard Education Letter
Harvard Educational Review
Journal of Staff Development
Middle School Journal
NASSP Bulletin
New York Times
New Yorker
Newsweek
PEN Weekly NewsBlast
Phi Delta Kappan
Principal Magazine
Principal Leadership
Psychology Today
Reading Research Quarterly
Reading Today
Rethinking Schools
Review of Educational Research
Teachers College Record
Teacher Magazine

E-links will be provided whenever possible.