Marshall Memo 111

A Weekly Round-up of Important Ideas and Research in K-12 Education
November 14, 2005

In This Issue:

Quotes of the Week

"I messed up, and now I'm paying for it. I want her to learn from my mistakes."

Carlos Cuevas, a California high-school dropout, attending a school parent night to support his sister, Hilda. *Education Week*, November 9, 2005, p. 34

"Low achievement is often the result of students failing to understand what teachers require of them."

Siobhan Leahy, Christine Lyon, Marnie Thompson, and Dylan Wiliam (see item #1)

"To know where they are going, students must know what excellent performance looks like."

Jan Chappuis (see item #4)

"To be effective, feedback needs to cause thinking. Grades don't do that. Scores don't do that. And comments like 'Good job' don't do that either."

Leahy et al. (see item #1)

"What is the key error? What is the probable reason the student made this error? How can I guide the student to avoid the error in the future?"

Guiding questions suggested by Elawar & Corno (1985) to help math teachers provide more focused feedback to students (in *Educational Leadership*, Nov. 2005, p. 69)

"Is this working? Honestly, do my annual visits and follow-up conferences help you become better teachers?"

Joanne Rooney, asking her Illinois teachers about the evaluation process. Her questions were met with "muffled laughter." *Educational Leadership*, Nov. 2005, p. 88)

1. Using Assessments to Improve Teaching and Learning in Real Time

In this thoughtful article in the November issue of *Educational Leadership*, four researchers from Educational Testing Service (ETS) begin by highlighting the shortcomings of quarterly or unit tests given during the school year:

- These tests monitor overall achievement and don't give teachers much diagnostic information.
- The tests are scored just as teachers are about to move on to the next unit – in other words, too late to be useful.

The authors contend that "if educators are serious about using assessment to improve instruction, then we need more fine-grained assessments, and we need to use the information they yield to modify instruction as we teach."

The ETS team says that this means moving from *quality control* to *quality assurance*, from assessment *for* learning to assessment *of* learning. "Quality assurance," they write, "involves a shift of attention from teaching to learning. The emphasis is on what the students are getting out of the process rather than on what teachers are putting into it, reminiscent of the old joke that schools are places where children go to watch teachers work."

For the last few years, the ETS researchers have worked with teachers in a number of states and have zeroed in on six strategies for integrating assessment into daily classroom practice:

• *Clarify and share intentions and criteria*. "Low achievement is often the result of students failing to understand what teachers require of them," write the authors. The usual antidote is to post state standards or learning objectives on the board at the beginning of the lesson, but this is often ineffective because the standards are not written in kid-friendly language. A better approach, says the ETS team, is to show students work samples (such as lab reports) from the previous year and ask students to analyze what's good about the good ones and what's missing in the ones that aren't so good, thereby constructing a rubric and a clear sense of what their own work should look like.

• *Engineer effective classroom discussion*. The trouble with the way many teachers question students is that: (a) question-and-answer sessions tend to "rehearse existing knowledge rather than create new knowledge for students;" (b) teachers listen for the "correct" answer instead of listening for what they can learn from students' thinking; (c) if students usually raise their hands when the teacher asks a question, students know that they can disengage by not raising their hands; and (d) when teachers call on one student at a time, they

get to hear only one student's thinking. "To gauge the understanding of the whole class, the teacher needs to get responses from all the students in real time."

The ETS team has found that teachers can counteract these tendencies by spending more time planning their classroom questions and being strategic about what they ask. "By thinking more carefully about the questions they ask in class, teachers can check on students' understanding while the students are still in class rather than after they have left… [M]any of our teachers now spend more time planning instruction than grading student work." The ETS researchers recommend these practices:

- Asking "range-finding" questions at the beginning of a lesson – to find out what students know and decide where to begin instruction.
- Asking "hinge-point" questions during the lesson – to provide a window into students' thinking to help decide which of several directions to go, depending on where students are "at."
- Having a "no-hands-up-except-to-ask-a-question" policy – Any student can be called on at any time; some teachers use a random-selection device like pulling popsicle sticks with students' names from a jar; students know they can be called on at any moment and tend to stay engaged.
- Some teachers ask a question and then have all students write their answers on small dry-erase boards and hold them up.

• *Provide feedback that moves learners forward.* When students receive grades, learning often stops. If the grade is accompanied by a comment, students usually look at the grade, then at their neighbor's grade, and ignore the comment. "To be effective," write the ETS researchers, "feedback needs to cause thinking. Grades don't do that. Scores don't do that. And comments like 'Good job' don't do that either." A much more effective strategy is not giving grades or scores on formative assessments, but instead giving comments on what needs to improve, linked to rubrics, aimed at getting students to self-assess. For right/wrong answers, teachers might tell the student that five of these 20 answers are incorrect; find them and fix them. It's possible that principals or parents might object to teachers not giving grades on formative assessments, so it's a good idea to explain the rationale in advance.

• *Make students responsible for their own learning.* Students need to take on the job of monitoring whether they understand and speaking up if they don't. One technique is to give each student a card colored red on one side and green on the other. If students hold up the red side, it tells the teacher they don't understand and need more explanation or practice.

• *Have students assess each others' work.* Not all students are able to assess their own work right away, and when an adult give them feedback, they tend to just "sit there and take it" until the adult goes away. The ETS team found that students are better at spotting errors in other students' work and more comfortable giving feedback, which helps get them ready to assess their own work. Peer assessment and feedback can be very helpful, and it benefits the students who are giving it as well as those who are getting it. However, the ETS folks caution,

students should not be giving each other grades that are reported to parents or administrators. "Peer assessment should be focused on improvement, not on grading," they say.

• *Assess informally at the end.* Some teachers require students to complete "exit passes" at the end of each lesson; before they leave the class, students write on index cards the answer to a "big idea" question or a range-finding question to help the teacher gauge understanding and judge where to begin the next day's instruction.

"Classroom Assessment Minute by Minute, Day by Day" by Siobhan Leahy, Christine Lyon, Marnie Thompson, and Dylan Wiliam in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 18-24), no free e-link available, but the article can be purchased at: http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/

2. Checking for Understanding in Elementary Math Classes

California-based math guru Marilyn Burns begins this *Educational Leadership* article by confessing that for years, she paid very little attention to assessment as she taught. Now, she's gotten religion: "No longer am I satisfied to simply record students' performance on assignments and quizzes; now, my goal is to find out, as I teach, what students understand and how they think… This continual evaluation of instructional choices is at the heart of improving our teaching practice."

Burns suggests a number of ways that teachers can check for understanding as instruction unfolds:

• *Ask for more than one strategy*. For example, asking second graders to give more than one way to solve 6 + 7. This taps into students' thinking and helps them learn to approach a problem from several angles.

• *Let students set parameters*. For example, having third graders come up with word problems for 3 x 4, or number problems for story situations, or creating stories and numbers from scratch.

• *Assess the same concept or skill in different ways*. Students can be confused by big numbers, but can be helped by being given an entry point through something they're interested in. For example, fourth-grader Josh was fascinated by trucks and was able to understand dividing 96 by eight by being asked how many toy eight-wheelers he could make if he had 96 toy wheels.

• *Take occasional class inventories*. For example, Burns asked a fifth-grade class to say which was the larger fraction, 2/3 or ¾, and explain their thinking. She then compiled their answers, which gave her material for future lessons and helped her zero in on the four students who didn't understand the concept yet.

• *Ask students to explain their answers, whether or not the answers are correct*. Burns finds that students sometimes come up with correct answers in erroneous ways, and when asked to explain their thinking, misconceptions and misunderstandings can be addressed.

• *Ask students to share different solution strategies with the group*. After one student gives a solution, Burns often asks, "Who has a different way to solve the problem?" or "Who

has another way to think about this?" This elicits interesting strategies – and misconceptions – and reinforces the idea that there is more than one way to solve many problems.

• *Call on students who don't volunteer*. For many years, Burns called only on students whose hands were up and let shy students sit in silence. Now she calls on all students, explaining to them up front, "It's important for me to know when a student isn't able to explain so I can think about what kind of support to give."

• *Use small-group work.* After posing a problem, Burns often says to the class, "Turn and talk with your partner" or "Talk with your group about this" and then walks around eavesdropping.

• *Ask students to restate others' ideas*. For example, "Explain what Claudia said in your own words." This gets students to listen carefully to each other and lets the teacher check for understanding all around.

"Looking at How Students Reason" by Marilyn Burns in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 26-31), no free e-link available, but the article can be purchased at: http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/

3. Planning Instruction Using a "Table of Specifications"

State standards are helpful, says University of Kentucky professor Thomas Guskey, but it's not always easy for teachers to know exactly what to teach, and it's especially difficult for teachers to create in-class assessments that address the standards accurately and provide helpful ongoing feedback on problems with teaching and learning.

The first challenge is to "unpack" the standards – figure out exactly what students need to know and be able to do so we can plan units that will help all students reach the standard. Guskey recommends using a "table of specifications" (a structure developed by Ralph Tyler and Benjamin Bloom) to clarify: (a) what students must learn to be proficient at the standard, and (b) what students must be able to do with what they learn (i.e., application). Here is a table of specifications filled out for an elementary social studies unit on maps:

• *Knowledge of terms* – Geography, geographer, map, scale, legend, topography, topographic features, longitude, latitude, coordinates.

• *Knowledge of facts* – The skill of map-making is very old. Early people based maps on inaccurate information. Inaccurate maps affected early explorations. Rivers determined the location of many early settlements.

• *Knowledge of rules and principles* – The Earth's features influence many human activities: (a) the routes traveled; (b) the location of towns and cities; (c) occupations; and (d) what people eat.

• *Knowledge of processes and procedures* – Travel routes came first. Settlements, towns, and cities were established along major travel routes and intersections, especially rivers. Occupations were based on the needs of travelers.

• *Ability to make translations* (i.e., expressing ideas or concepts in a new way) – Describe how geography affected early travel routes. Describe why accurate maps were

important to early explorers. Identify lines of longitude and latitude on a map. Describe how longitude and latitude help locate points on maps.

• *Application* – Explain why major cities developed in their current locations. Identify specific points or locations on an unfamiliar map. Use a map in planning a travel route.

• *Skill in analyzing and synthesizing* – (These are different examples since this is not included in an elementary map unit): Telling facts from opinions in newspaper editorials and writing "a paragraph explaining how knowledge of mathematics and science helped Napoleon's armies improve the accuracy of their cannons."

Guskey says that filling out a table of specifications helps make vague state standards more specific and takes overly-specific standards to a higher level. "A table of specifications is much like a travel guide," he concludes. "Although it never limits the pathways available, it enhances traveling efficiency, enjoyment of the journey, and the likelihood of successfully reaching the intended destination."

The second challenge is shaping in-class assessments to monitor learning. Guskey believes that once the table of specifications is filled out, it's much easier to craft formative assessments: teachers just need to make sure they're checking on all the end-point learnings as instruction proceeds. He stresses the importance of using multiple types of assessments, including constructed response questions, and using the formative data to continuously improve teaching and learning.

"Mapping the Road to Proficiency" by Thomas Guskey in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 32-38), no free e-link available, but the article can be purchased at: http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/

4. Making Students Partners in the Use of Formative Assessment Data

In this *Educational Leadership* article, Oregon consultant Jan Chappuis argues that for formative assessments to have their full impact on achievement, students must join teachers using the data. "Formative assessments promote learning," says Chappuis, "when they help students answer three questions: Where am I going? Where am I now? And how can I close the gap?" Chappuis suggests seven strategies:

Where am I going?

• *Strategy 1: Provide a clear and understandable vision of the learning target.* It's vital that teachers share goals in language that students can understand. For example, introducing a reading comprehension unit on inference, a teacher might say, "We are learning to *infer*. This means we are learning to make reasonable guesses on the basis of clues." For a unit on writing, a teacher might introduce the scoring guide and have students compare it to their concept of good writing.

• *Strategy 2: Use examples of strong and weak work.* "To know where they are going," says Chappuis, "students must know what excellent performance looks like." She recommends using strong and weak examples of student work (anonymous, of course) and having students analyze what makes them strong and weak, using language from the scoring guide.

Where am I now?

• *Strategy 3: Offer regular descriptive feedback.* Chappuis recommends cutting back on *evaluative* feedback (e.g., B+ , Good work) and increasing *descriptive* feedback (e.g., "You maintained eye contact throughout your whole presentation"). Grades and other marks (like check plus and 92%) don't tell students how they can improve. Instead, they close down learning by signaling that the piece is done.

• *Strategy 4: Teach students to self-assess and set goals.* After students have learned how to evaluate anonymous passages by other students, they can begin assessing their own work, focusing on specific traits, and set measurable goals for themselves.

How can I close the gap?

• *Strategy 5: Design lessons to focus on one aspect of quality at a time*. For example, in a unit on the scientific method, having students focus on a problem area, formulating their hypothesis.

• *Strategy 6: Teach students focused revision.* Students can practice on one of the anonymous samples that has problems and then shift to their own work, taking one trait (e.g., mechanics and usage) at a time.

• *Strategy 7: Engage students in self-reflection and let them document and share their learning*. By having students answer questions like "What are two important things you learned from today's class?" and keep portfolios or logs of their learning, we can encourage students to reflect on their learning and understand their learning styles and progress.

"Helping Students Understand Assessment" by Jan Chappuis in *Educational Leadership*, Nov. 2005 (Vol. 63, #3, p. 39-43), no free e-link available, but the article can be purchased at: http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/

5. Six Ways to Judge the Quality of Formative Assessments

Formative tests are all the rage these days, say California testing experts Joan Herman and Eva Baker in this *Educational Leadership* article. A number of vendors are marketing formative assessments (a.k.a. benchmark tests and progress monitoring systems), promoting off-the-shelf and customized assessments as well as CDs and Web portals containing item banks from which educators can create their own tests.

But how can school people judge the quality of these assessments and make sure they are spending their money wisely? Herman and Baker suggest six criteria:

• *Alignment* – Formative assessments must be aligned with state standards, of course, but Herman and Baker feel strongly that it's not a good idea to slavishly copy the content and format of state tests. "Although a strategy of strict test preparation may boost state test scores in the short term," they write, "available evidence suggests that early gains achieved in this way are not sustained in the long run." Herman and Baker also believe that overly-close alignment with state test formats will sell students short by exposing them to only a fraction of state standards and limiting them to a steady diet of multiple-choice questions on a subset of

skills and knowledge. Formative assessments should focus on the big ideas of the content area, use a variety of question types, and "encourage instruction on the full depth and breadth of the standards and give students opportunities to apply their knowledge and skills in a variety of contexts and formats."

• *Diagnostic value* – Herman and Baker believe that interim tests should provide teachers with detailed diagnostic feedback so they can improve teaching and learning during the year. Open-ended test items are very helpful in revealing students' thinking and misconceptions. The same can be true of well-constructed multiple-choice questions that include common misconceptions among the distracters. And there should be enough questions on each standard to give reliable information on students' mastery.

• *Fairness* – This means avoiding biased test items, overly-complex language, and insensitivity to any student subgroup. Accommodations provided in formative tests should mirror those in actual state exams.

• *Technical quality* – Schools and districts should push vendors for data showing the tests' technical quality. This should also include pilot-testing for reliability, inter-rater reliability, and validity.

• *Utility* – Test data reports need to be user-friendly so teachers and administrators can easily interpret the results and put them to use in classrooms. This also means supporting teachers on the best approach to using interim data to improve teaching and learning.

• *Feasibility* – Districts need to continuously evaluate and hold benchmark testing accountable for meeting its purposes and giving them their money's worth!

"Making Benchmark Testing Work" by Joan Herman and Eva Baker in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 48-54), no free e-link available, but the article can be purchased at:
http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/

6. Using Grades As a Communication Tool Rather than a Goal

In this article, Tony Winger, a Colorado high-school teacher and instructional coach, wrestles with the paradox that grades, which many teachers consider their ace in the hole when it comes to getting students to work hard, actually *detract* from kids' motivation to learn. Winger recalls that as a young teacher, "I wanted my students to wonder, to understand, and ultimately to be changed. Many of them simply wanted a good grade. And the irony is, they were only responding as other educators and I had conditioned them to respond. We had trained them to see grades as a commodity rather than as a reflection of learning."

To counteract this tendency, Winger has the following suggestions for teachers as they formulate their grading policies:

• *Link grades to learning* – If teachers carefully define the knowledge, skills, reasoning, and connections they want their students to gain from each course and then align grades closely with those goals, grades have more meaning. For example, students in a language arts class might receive sub-grades for reading comprehension, writing process, writing product, speaking, literary elements, and effort/citizenship.

• *Separate nonacademic factors* – Winger feels strongly that teachers should give students a separate grade for work habits (e.g., turning in assignments on time), responsibility, and attitudes, and *not* combine these factors with academic grades. Each component should count for a specified percentage of the overall grade, and students should know their status in all areas at any time.

• *Count homework as a work habit* – Over the years, Winger noticed that some students were conscientious about turning in homework but didn't understand the material, whereas other students were negligent turning in their homework but aced the exams. He finally concluded that homework was a reflection of work habits, not academic understanding. From that point on, he counted homework as part of the non-academic grade and used only in-class assessments to compute the academic grade.

• *Split off late work* – Winger believes it is inappropriate to dock students' academic grades for turning work in late. Instead, he recommends separating the grade for a major project into three components: academic content, work habits (getting it in on time and following the steps), and writing. He tells the story of a student in his sociology class who was about to give up on a paper because it was late. When the boy heard about Winger's new policy, he completed the paper. Although he got an F for work habits and a C on the quality of his writing, he got an A for the paper's brilliant content. Encouraged by this experience, the boy went on to study sociology in college and at the graduate level.

• *Extra credit* – Winger doesn't believe that students should be able to raise their grade by doing extra credit work, since that treats grades as a commodity to be earned, irrespective of learning. But he does think students who do poorly on a paper or a quiz should be able to get extra help and then rewrite the paper or re-take the quiz and raise their initial grade.

"Grading to Communicate" by Tony Winger in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 61-65), no free e-link available, but the article can be purchased at: http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/

7. Videotaping to Give Students Quick Feedback

Last year, Colorado third-grade teacher Matthew Dicks was preparing to give a workshop to colleagues and decided to videotape some writing conferences in his classroom. He happened to remark to students that watching the tape had helped him see areas for improvement, and his students asked if they could see the tape too. "Why not?" he said, and they watched it together. There were murmurs of "Aha!" and whispers of "Sorry I sounded so mean." Dicks reflected later, "It dawned on me that I had made more progress in improving student conferencing through 30 minutes of showing this videotape than I would have made through 30 mini-lessons."

So he began filming and editing peer conferences once a week and showing them to students as part of his mini-lessons. There were rapid improvements in students' conferencing skills, and Dicks was inspired to use videotaping in other areas of his class:

• *Reading* – Dicks now tapes students during their book talks (small-group discussions about a text) and book club meetings. Watching the footage has helped students learn what

topics they can initiate during book talks, and their discussion has become livelier and more productive as they emulate their more successful peers' strategies.

• *Science* – Students videotape their own science experiments and use the tapes to report on and assess their work step by step.

• *Classroom management* – Students can watch their own behavior, and Dicks reports that taping has made a very positive difference.

• *Teacher reflection* – Dicks has also turned the camera on himself and found numerous ways to improve his teaching.

"Quick feedback is the key to unlocking student interest," write Dicks. "Our current generation of students – what some researchers call the Game Generation – has grown up playing video games and using the Internet as a means of learning and entertainment. As a result, many students expect to receive feedback and some kind of gratification right after they expend effort on a task." Dicks has found that in-class videotaping, with instant replay or edited replay later, as part of a lesson, is a way of tapping this medium to enhance teaching and learning.

"Show Me the Way" by Matthew Dicks in *Educational Leadership*, Nov. 2005 (Vol. 63, #3, p. 78-80), no free e-link available, but the article can be purchased at:
http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/
and Matthew Dicks can be reached at matthew_dicks@whps.org .

8. Improving Fluency and Comprehension in the Elementary Grades

A new national study says that while most elementary students have successfully learned how to sound out words, significant numbers of students have two major deficits: fluency (defined as "an effortless, smooth, and coherent oral production of a given passage… in terms of phrasing, adherence to the author's syntax, and expressiveness") and comprehension. For too long, says Timothy Shanahan, director of the Center for Literacy at the University of Illinois at Chicago, teachers have given short shrift to fluency instruction, assuming that once students learn to identify words they naturally become more adept at reading them quickly and accurately. For many, he says, this doesn't happen; teachers need to spend more time on fluency.

Michael Kamil, a Stanford University researcher, has equally strong concerns about the comprehension gap. "Look, folks," he said, dramatizing the study's findings, "these kids need comprehension instruction. They don't need a lot of word instruction." Kamil believes that comprehension has suffered because of too much emphasis on basic-skills teaching in letter sounds and word-recognition strategies.

Richard Allington, president of the International Reading Association and a professor at the University of Tennessee, says the new data suggest that the current focus on basic skills and the widespread use of one-minute reading assessment in schools in the Reading First program may be ineffective.

"More Focus on Reading Fluency Needed, Study Suggests" by Kathleen Kennedy Manzo in *Education Week*, Nov. 9, 2005 (Vol. 25, #11, p. 11), no free e-link available

9. Ten Key Concepts for Teaching Evolution, and How States Stack Up

The current *Education Week* reports on an analysis done by the newspaper's research center of state standards for the teaching of evolution. *Ed. Week* looked at how well each state covered the ten key concepts of evolution outlined in the National Science Education Standards (NSES), which are regarded as the prime reference tool for what students should know about science. Using the Align to Achieve database of 41 states' standards, the study found that four states (Florida, Illinois, Kentucky, and Oklahoma) completely avoid the word "evolution." All 41 states touch on some of the concepts, but overall coverage is uneven.

Below, verbatim, are the NSES's ten key concepts for the teaching of evolution. After each concept is the number of states that have each concept in their science standards. (Note that this study included only 41 states.)

1. Biological adaptation and survival – Biological evolution accounts for the diversity of species developed through gradual processes over many generations. Species acquire many of their unique characteristics through biological adaptation, which involves the selection of naturally occurring variations in populations. Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive successes in a particular environment. (39 states)

2. Natural selection – Like other aspects of an organism's biology, behaviors have evolved through natural selection. Behaviors often have an adaptive logic when viewed in terms of evolutionary principles. (35 states)

3. *Fossil record reflects changing life forms* – Fossils indicate that many organisms that lived long ago are extinct. Extinction of species is common; most of the species that have lived on the Earth no longer exist. (34 states)

4. *Environmental changes affect survival* – Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. (32 states)

5. *Similarity among diverse species* – Natural selection and its evolutionary consequences provide a scientific explanation for the fossil record of ancient life forms, as well as for the striking molecular similarities observed among the diverse species of living organisms. (27 states)

6. *Mechanisms of evolution* – Species evolve over time. Evolution is the consequence of the interactions of (a) the potential for a species to increase its numbers; (b) the genetic variability of offspring due to mutation and recombination of genes; (c) a finite supply of the resources required for life; and (d) the ensuing selection by the environment of those offspring better able to survive and leave offspring. (22 states)

7. *Classification systems reflect evolutionary relationships* – Biological classifications are based on how organisms are related. Organisms are classified into a hierarchy of groups

and subgroups based on similarities which reflect their evolutionary relationships. Species is the most fundamental unit of classification. (22 states)

8. *Variable effects of genetic change* – Changes in DNA (mutations) occur spontaneously at low rates. Some of these changes make no difference to the organism, whereas others can change cells and organisms. Only mutations in germ cells can create the variation that changes an organism's offspring. (21 states)

9. *Common ancestry of species* – Millions of species of animals, plants, and microorganisms are alive today. Although different species might look dissimilar, the unity among organisms becomes apparent from an analysis of internal structures, the similarity of their chemical processes, and the evidence of common ancestry. (20 states)

10. *Time frame of biological evolution* – The great diversity of organisms is the result of more than 3.5 billion years of evolution that has filled every available niche with life forms. (6 states)

"Treatment of Evolution Inconsistent" by Sean Cavanagh in *Education Week*, Nov. 9, 2005 (Vol. 25, #11, p. 1, 20, 21), no free e-link available

10. Short Items:

a. Report on extended time – This new 40-page research report from Massachusetts 2020 analyzes the practices of eight successful public schools that have added at least 15 percent more time to the conventional school year. The study describes how the schools organize their staff, pay for, and sustain a school built around more time. "Time for a Change: The Promise of Extended-Time Schools for Promoting Student Achievement" by David Farbman and Claire Kaplan, available free at: http://www.mass2020.org/full_report.pdf

Spotted in *PEN Weekly NewsBlast*, Nov. 10, 2005

b. Digital portfolio samples – You can see samples of digital portfolios of students' work at these websites:

- http://www.mehs.educ.state.ak.us/portfolios/portfolio.html
- http://www.richerpicture.com
- http://www.efoliominnesota.com (click on Gallery and Student Samples)

"Documenting Learning with Digital Portfolios" by David Niguidula in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 44-47), no free e-link available, but the article can be purchased at:
http://www.ascd.org/portal/site/ascd/menuitem.c00a836e7622024fb85516f762108a0c/

c. Rubrics website – The Landmark Project's Rubric Builder website provides a template for building a rubric in any subject, and also access to rubrics posted by teachers:
http://landmark-project.com/classweb/tools/rubric_builder.php3

Spotted in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 96), "Assessment to Promote Learning"

d. Student self-assessment website – Getsmarter.org allows students to assess themselves and participate in tutorials in science and math. The interactive MSTV portion of the site is graphically appealing to teenagers and also carries useful math and science content. http://www.getsmarter.org/mstv

Spotted in *Educational Leadership*, November 2005 (Vol. 63, #3, p. 96), "Assessment to Promote Learning"

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 36 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 43 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, provides e-links to full articles when available, and e-mails the memo to subscribers every Monday (with occasional breaks; there were 50 issues in 2004-05).

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Marshall Memo 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, title, author, source, level, etc.
- 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 Ground
Middle School Journal
NABE News
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
Teacher Magazine
Teachers College Record
Theory Into Practice

E-links are provided whenever possible.