Marshall Memo 48

A Weekly Round-up of Important Ideas and Research in K-12 Education
July 26, 2004

In This Issue:

Quotes of the Week

"One new student can change a classroom's entire dynamics. If there's a new boy, who will be his friend? Where will he fit into the pecking order? If it's a girl and she's cute, all the boys will try to make her laugh."

Denise Drain, Indianapolis fifth-grade teacher (see item 2)

"You have so many kids moving around, and you know their home life is a mess, you just want to help them. But… [a]ny sign of kindness, they mistake for weakness, and then you have to battle your way back."

Vicki Graves, Indianapolis fifth-grade teacher (ibid.)

"I didn't know teaching was going to be like this. I'm 48 and I'm supposed to work until I'm 60. But I can't do this for 10 more years."

(*ibid*.)

"Our inability to support high-quality teaching in many of our schools is driven not by too few teachers entering the profession, but by too many leaving it for other jobs… It is as if we were pouring teachers into a bucket with a fist-size hole in the bottom."

National Commission on Teaching and America's Future, (see item #3)

"That first year, it was just me at the end of the hall. I was 21… I was one of hundreds of new teachers. I felt small. How was I going to make it?"

Katie Bayerl, Boston high-school teacher (see item #3)

"Not having been in a collaborative place this year, I am exhausted. Isolation takes the fun out of my job. I want to talk about instruction!"

(*ibid*.)

1. Is Hands-On Discovery the Best Way for Children to Learn Science?

An article of faith among many progressive educators is that students learn science best when they do open-ended experiments and discover basic principles for themselves. But a new study by two Pennsylvania researchers asserts that direct instruction may be more effective at teaching key principles and getting students to the point where they can generalize their learning. The authors believe that the conventional wisdom is "just plain wrong" for three reasons:

- Recent research on learning and memory contradicts the vague theories behind discovery learning.
- Most of what students, teachers, and scientists know about science was taught, not discovered.
- Active teaching (as opposed to the teacher observing and facilitating) is more effective for difficult procedures like algebra and computer programming.

A key concept in many scientific experiments is the Control of Variables Strategy (CVS), which allows scientists to design unconfounded experiments and draw valid conclusions from experimental outcomes. "This 'process skill' must be taught," says David Klahr, one of the authors. It's fun to collect bugs, but to design experiments to test specific hypotheses about how bugs behave under different conditions (e.g., hot and cold), children need explicit guidance. Klahr's earlier research showed that most elementary students could learn the principles of CVS in less than 30 minutes of direct instruction and retain the skills seven months later. Klahr and his colleagues also found that students who had direct instruction were better able to transfer what they learned to other subjects. Finally, the researchers found that students who had direct instruction were much better at detecting flawed experiments than were students who used discovery learning.

Three researchers commented on this study: Rich Shavelson of Stanford University said that totally unguided discovery of the type used in the study is rarely

used in classrooms, meaning that the study is knocking down something of a straw man. Leona Schauble of Vanderbilt University agreed, saying, "Educators do not believe that children should stumble around and reinvent modern science." UCLA professor James Stigler (co-author of *The Teaching Gap*), added: "No single study ever settles a debate once and for all." He thinks there is a middle ground where hands-on science experiments are integrated with explicit instruction in critical science concepts and methods.

"Instruction Versus Exploration in Science Learning" by Rachel Adelson in *Monitor on Psychology*, June 2004 (Vol. 35, #6). The full study by David Klahr and Melena Nigam is available on-line at http://www.apa.org/monitor/jun04/instruct.html (spotted in *PEN Weekly NewsBlast*, July 22, 2004)

2. Coping with High Student Mobility

Many urban schools struggle with high student turnover. Riverside Elementary in Indianapolis, for example, has 330 students and during the 2002-2003 school year, 437 students transferred in and out. "Every time rent comes due, some child leaves," said Donna Smith, the principal. "Parents lose jobs. Kids get tossed back and forth between relatives. Children are moving in and out of the school all the time."

High turnover can wreak havoc with curriculum continuity, forcing teachers to go over material that's already been taught. "I spent six weeks on fractions – adding them, dividing them," said Denise Drain, another Indianapolis teacher, "and then I get new people in, and they haven't done fractions. So I have to slow down and catch them up."

Equally difficult is orchestrating the assimilation of new personalities and dealing with the effects on classroom discipline. "One new student can change a classroom's entire dynamics," said Drain. "If there's a new boy, who will be his friend? Where will he fit into the pecking order? If it's a girl and she's cute, all the boys will try to make her laugh."

High student turnover can make teaching more exhausting and lead to burnout. "You have so many kids moving around, and you know their home life is a mess, you just want to help them," says Vicki Graves, another Indianapolis teacher. "But… [a]ny sign of kindness, they mistake for weakness, and then you have to battle your way back… I didn't know teaching was going to be like this. I'm 48 and I'm supposed to work until I'm 60. But I can't do this for 10 more years."

Studies have shown that students who change schools frequently are often low-achieving, but research on turnover is remarkably sparse. A decade ago, two Texas

researchers found 62 different formulas for what was variously called "mobility," "stability," and "turbulence," but there is still no standard metric. About 60 percent of during-the-year transfers happen when parents move, according to David Kerbow, a University of Chicago researcher who is one of the few specialists on mobility. Some transfers are the result of parents trying to find a more effective school, but Kerbow says that parents are rarely successful: "Very few students go from a low-achieving school to one where achievement is high… Students tend to leave and go to schools that are very similar." Many parents also move their children to escape conflicts with school authorities or other students and make a fresh start. This is sometimes successful, but often transferring students bring their anger and academic frustration with them, disrupting their new classrooms and schools.

Anecdotally, several courses of action seem to be helpful in addressing the multiple challenges of high turnover:

- *Buddies* – Charity Dye Elementary School (also in Indianapolis) assigns each student who arrives after the start of the school year to a peer buddy who helps with the process of adjustment.
- *Diagnostic testing* – Dye School tests late-arriving students to identify strengths and weaknesses and prescribe a special course of study if necessary.
- *Standardized curriculum* – North Carolina and Maryland are moving toward adopting the same curriculum across school districts to minimize the disruption students experience when they change schools within each state. New York City recently adopted the same math and reading programs in most of its schools.

"When Students Are in Flux, Schools Are in Crisis" by Sam Dillon, *New York Times*, July 21, 2004, free sign-up at *New York Times* website:
http://www.nytimes.com/2004/07/21/education/21mobility.html?adxnnl=1&adxnnlx=1090841618-2Wu9v5eUfdLk74F3Lf97bg

3. Preventing High Teacher Attrition

"The conventional wisdom is that we lack enough good teachers," said a 2003 report from the National Commission on Teaching and America's Future mentioned in this *American School Board Journal* article. "But the conventional wisdom is wrong. The real school staffing problem is teacher retention. Our inability to support high-quality teaching in many of our schools is driven not by too few teachers entering the profession, but by too many leaving it for other jobs… It is as if we were pouring teachers into a bucket with a fist-size hole in the bottom."

Some have questioned how severe the problem really is, asserting that there may be *insufficient* turnover in some schools (not enough ineffective teachers being moved out), that the national "separation rate" for public school teachers is lower than it is in the private sector, and that teachers leave their jobs at about the same rate as other public employees. Others point out the distinction between "movers" and "leavers" – teachers who move from one school to another and those who leave the profession for good. But from a school principal's point of view, these comparisons and distinctions are not meaningful: every vacancy still has to be filled, and there are too many of them.

District-wide solutions include effective induction programs (see Marshall Memo 45, #5), finding a way to pay the best teachers $100,000 a year, and creating other incentives to lure top teachers into struggling schools, including allowing teachers who move to such schools from other parts of a state to retain their tenure. At the school level, there are some specific things that principals can put in place. Katie Bayerl, a thoughtful Boston high-school teacher interviewed for this article, recalls her own experience as a beginning teacher 12 years ago: "That first year, it was just me at the end of the hall. I was 21. The woman across the hall who helped out was 65, but she was not a mentor. I was one of hundreds of new teachers. I felt small. How was I going to make it?" Bayerl points to the several school-level factors that she believes can make a difference for new teachers:

• *An on-site mentor teacher* – Ideally the mentor works in the same building, teaches the same subject, and does "the kind of teaching I want to do."

• *New teachers bonding over the summer* – Bayerl says it is tremendously helpful for new teachers to work together before the school year begins, creating a trusting peer group that provides continuing support once the regular year begins.

• *Collaboration with like-minded colleagues* – "I need at least a couple of people in the building who think hard about teaching, who can keep me inspired," said Bayerl. "Not having been in a collaborative place this year, I am exhausted. Isolation takes the fun out of my job. I want to talk about instruction!"

• *Regular team meetings* – Structured collaboration with teachers who share the same students is a must, and it won't happen unless it's planned and mandatory.

• *Discipline support* – This means an effective structure for dealing with disruptive students right away.

• *Opportunities to contribute and lead* – Even while new teachers are struggling to

establish themselves in their classrooms, it's helpful if they are asked to contribute in a meaningful way to schoolwide efforts.

"Is There a Teacher Retention Crisis?" by Craig Colgan in *American School Board Journal*, August 2004 (Vol. 191, #8, p. 22-25), no e-link available.

4. Improving the Substitute Teaching Experience

"We're going to have a *sub* tomorrow," said TJ, a first-grader, to his grandmother. When she asked him what that meant, he said, "You get to do whatever you want and you don't have to listen." With teacher absenteeism averaging at least 8 percent of each school year, the typical student accumulates an entire year of classroom time with substitutes from K-12. What can principals and school districts do to make time with substitutes more productive?

"We are the only profession that would allow a substitute to come in with no training and stand in the place of a professional," says Nancy Haas of Arizona State University. "Imagine going to the doctor's office and the doctor is a substitute, off the street with no training. Imagine if you walked into the courtroom and you had a substitute attorney to plead your case."

Here are some ideas from principals and districts around the country:

• *Call subs the night before if possible*. This avoids that frantic last-minute feeling and allows them to be better prepared.

• *Give substitutes options if possible*. For example, some subs may be more effective at a particular grade level or with a particular type of students.

• *Give substitutes an orientation packet*. School rules, policies, a "buddy" teacher next door, ways to get in touch with administrators, school themes, etc. are vital for the conscientious sub.

• *Make sure teachers leave substantive lesson plans from the substitute*.

• *Ask subs for feedback at the end of the day*. Questions like "Were the lesson plans adequate?" and "Were the students helpful?" can get valuable information for the future.

• *Make subs feel part of the school family*. "You're only won half the battle if you recruit them," says a Fulton County, Georgia official. "We want them to stay." When substitutes return on a regular basis, teachers are more likely to leave meaningful lesson material rather than busy-work.

• *Show your affection*. Subs need strokes too, and an annual Substitute Appreciation Day or ceremony can win a lot of points. Good substitutes should also be encouraged to become full-time teachers.

Here are some district-level ideas:

• *Consider requiring a teaching certification*. Only Iowa does this now. Twenty-eight states require only a high-school diploma.

• *Interview potential substitutes personally*. This is essential in sizing up a person's suitability to substitute in a district. Only about 40 percent of districts require it now.

• *Require subs to go through training*. San Diego County is one of a number of districts with substitute boot camps (theirs lasts for two days). Training typically covers classroom management, professionalism, legal responsibilities, district policies, safety, diversity, and child development.

• *Consider outsourcing* – Kelly Educational Staffing is one of a number of substitute employment agencies that takes care of recruiting, screening, hiring, training, evaluation, and benefits. Kelly handles substitutes for 1,500 schools around the country for about $24 per day more for each sub. Many administrators think it's worth the money – and some feel that outsourcing may save money in the long run.

"Winning the Substitute Game" by Melissa Ezarik in *District Administration*, July 2004, available on line at http://www.districtadministration.com/page.cfm?p=807 (spotted in *PEN Weekly NewsBlast*, July 22, 2004

5. Short Item:

Value added in California – The Pacific Research Institute recently published a paper, "Putting Education to the Test: A Value-Added Model for California" by Harold Doran and Lance Izumi. This paper is a comprehensive analysis of the issues of value-added. A PDF file of the paper is available at:

http://www.pacificresearch.org/pub/sab/educat/2004/Value_Added.pdf.

(spotted in *The Education Gadfly*, July 22, 2004 (Vol. 4, #27).

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 aims to keep busy principals and other educators very well-informed on important research and ideas in K-12 education. Kim Marshall, a former Boston teacher and administrator, is your "designated reader," searching through 37 publications the week they come out, choosing the articles that are most relevant and useful to improving teaching and learning, and summarizing them in a brief e-mail. Some ideas will be familiar, reinforcing what readers already know, but others will be new and genuinely thought-provoking. Target topics include:

• *School leadership* – Building a professional learning community; effective teamwork; effective schools practices; supervision and evaluation of teachers; time management.

• *Effective teaching* – Key variables associated with high student achievement; professional development of teachers; teacher leadership and career ladders; multiple intelligences and brain research.

• *Curriculum* – Alignment and planning with the end in sight; teaching for understanding; new ideas in reading, writing, and math.

• *Assessment* – Aligned formative and summative assessments; using data and student work for continuous improvement; graphic display of student achievement data; standardized testing and the debate on standards.

• *Closing the gap* – Effective strategies to close the racial/economic achievement gap; the innate-ability/intelligence/effective effort debate; safety-net programs.

• *Positive school culture* – Student discipline; social-emotional learning; moral development; parent involvement; and community partnerships.

• *And…* – New areas of research; upcoming television and radio programs on education.

Publications covered:

(those read this week are underlined)

American Education Research Journal
American Educator
American School Board Journal
ASCD SmartBrief
Atlantic Monthly
Bay State Banner
Boston Globe
Commonwealth Magazine
Curriculum/Education Update (ASCD)
Ed. Magazine (Harvard School of Education)
Education Digest
Education Gadfly
Education Next
Education Week
Educational Leadership
Educational Researcher
Elementary School Journal
Harpers
Harvard Business Review
Harvard Education Letter
Harvard Education 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
Review of Educational Research
Teachers College Record
Teacher Magazine

E-links will be provided whenever possible.

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