

education *views*

UNIVERSITY OF COLORADO AT BOULDER SCHOOL OF EDUCATION

School Hosts Prestigious Scholars

National Academy of Education Meets in Boulder

Celebrating 20 years of support to young researchers, leading education scholars met in Boulder October 19–21 for the National Academy of Education (NAE) Fellows Retreat and Annual Meeting.

With a goal to improve the quality of educational research, the academy receives and administers competitive Spencer Foundation grants awarded to new scholars to support post-doctoral research. In addition to financial support, Spencer fellows receive mentoring from NAE members, learn the ropes of grant-writing in Washington, and interact with NAE members at conferences.

These activities really make a difference to a young scholar's academic career, according to NAE member Larry Hedges, a statistician from Northwestern University. Summarizing a study that he conducted of former Fellows,



NAE leaders discuss program history and successes. From left: Patricia Graham, Harvard Graduate School of Education and former NAE and Spencer Foundation president; Michael McPherson, Spencer Foundation president; Larry Hedges, Northwestern University.

Hedges reported that Spencer participants were more productive, wielded more influence in their fields, demonstrated greater ability to garner resources, and were more likely to be promoted.

At this year's conference 39 new Spencer Fellows presented their research and attended discussion groups, forums, and special programs with 42 NAE members and 18 former Fellows. Topics included the No Child Left Behind Reauthorization, the design of out-of-school educational activities, responsible instructional research, women in science, school choice, and reforming undergraduate education in the sciences.

Sessions were lively and interactive. For example, in what was described as a "wake-up call for science faculty" by Bruce Alberts, former president of the National Academy of Sciences, CU-Boulder faculty members William Wood (molecular, development, and cellular biology), Valerie Otero (science education), and Carl Wieman (Nobel laureate, physics) presented programs designed to improve undergraduate science teaching and to recruit talented math and science teachers. Their emphasis is on active learning strategies—informed by educational research—rather than large-group lecture.

Illustrating one technique that is showing measurable student learning gains in Wood's own undergraduate classes, the audience used "clickers" to respond to science questions. Wood then projected instant graphed results for further group discussion, causing some participants to change their



CU science education professor Valerie Otero demonstrates increases in undergraduate student learning as a result of a collaborative initiative between the School of Education and science departments on campus.

Message from the Dean



The purpose of this newsletter is to stay in touch with our alums. Please send an e-mail if you would like to know about a favorite professor or tell us about your accomplishments. We would love to hear from you.

When did you graduate from CU? Depending on how long ago that was, our teacher education program in the School of Education today may be very different from what you remember.

In 1982, to strengthen the academic preparation of teacher candidates, Dean Richard Turner and the faculty eliminated the elementary education major. Negative publicity at the time gave some people the idea that CU's "education program had been moved to Greeley." We spent several years assuring prospective students that indeed you could study to be a teacher at CU-Boulder. In 1986, Colorado lawmakers passed legislation requiring that all programs in the state do what CU had done. All teacher education candidates, both elementary and secondary, must have an academic major in addition to their teacher licensure coursework and practicum experiences. Today we recruit exemplary students from the College of Arts and Sciences and the College of Music to become teachers. For example, education students have an average grade point average of 3.25 in their arts and sciences courses.

Historically, CU's teacher education program didn't provide much experience in schools before student teaching. The only requirement was 100 hours of observation as part of your education psychology course. In the early 1990s, under the leadership of Director of Teacher Education Linda Molner, the School of Education completely revamped its programs so that practicum placements are now required in conjunction with each of our teaching methods courses. Specific practicum assignments allow students to gain experience with classroom routines, lesson planning, leading small and

large group activities, and interpreting assessments, long before they begin formal student teaching. When reform legislation was passed in 1999, CU teacher licensure candidates were already completing the 800 hours of supervised field-based experiences required by the new law.

The 1999 Performance-Based Teacher Education Act also prompted several other important changes in our licensure programs. In keeping with the idea of being accountable for outcomes rather than inputs, our candidates must meet eight performance-based standards for Colorado teachers by demonstrating their knowledge and skills in each of the following areas: literacy and literacy instruction, mathematics and mathematics instruction, standards and assessment, content knowledge in all of the areas required for instruction, classroom management, methods for differentiating and individualizing instruction, technology to support instruction, and the role of teaching in a democratic society. The new law also required that we make it possible to complete both a bachelor's degree and teaching licensure program in four years. Professor Bobbie Flexer worked with arts and sciences departments to complete degree plans for 42 different majors that can be completed in four years.

We are very proud of the teachers who graduate from CU-Boulder. They are well prepared academically, they have very specific pedagogical training to help them be effective in a wide range of school settings, and they are committed to making a difference in their students' lives.

Lorrie Shepard, Dean
Lorrie.Shepard@Colorado.edu

School Awards \$229,000 in Scholarships to Deserving Students

Helping a new generation of teachers and teacher educators realize their dreams is what giving scholarships is all about. On October 6 over 200 students, donors, families, alums, and faculty gathered to celebrate the achievements of scholarship recipients and the generosity of donors at the School of Education's annual Homecoming and Scholarship Awards event.

The scholarship program has grown significantly since its inception in 1993, when Phil DiStefano (former dean and now UCB provost) initiated the program with the CU Foundation. That first year, the school awarded \$2,500 in scholarships to five students. This year, we awarded over \$229,000 in scholarships and fellowships to 59 students.

For more information about scholarships, contact Margot Neufeld at margot.neufeld@cufund.org or at 303-541-1311.



The Gendron family and friends established a scholarship in 1994 in memory of Michael Gendron, a CU graduate and middle school teacher who died in 1992. They gather each year to participate in the annual Homecoming Scholarship event and are shown here with this year's scholarship recipient Erin Byerly, who is currently student teaching at Silver Creek High School. Top row (from left): Matt Gendron, Aaron Gendron, Meg Hanson. Bottom row (from left): Kathy Gendron, Erin Byerly, Glorianne Gendron.

Local Teacher Receives “Oscar of Teaching”

Alum Earns \$25,000 Milken National Educator Award

When the local media arrived with TV cameras and strangers in suits appeared at Superior Elementary recently, second-grade teacher Jennifer Almquist thought that her school had earned a Blue Medal School designation. So when at an all-school assembly the cameras turned on her and the well-dressed dignitaries called her to the stage, no one was more shocked than she. She was suddenly \$25,000 richer and would be attending an expenses-paid conference in Los Angeles. Almquist was being honored as a Milken National Educator, the “Oscar of Teaching” and an award given to only 100 educators across the country.

Almquist is not sure how she was selected. Colorado and other states appoint blue-ribbon committees that recommend outstanding educators, but their selection procedures are confidential. Criteria for the award are stringent: using exceptional instructional practices that impact student learning, serving as a professional model of excellence, demonstrating strong potential for future leadership, and inspiring and engaging students, colleagues, and the community.

Almquist definitely fits these criteria. She graduated from CU in 1997 with a BA in French and completed a post-baccalaureate elementary certification program at the School of Education. After student teaching at Superior Elementary, she was offered a job as a third-grade teacher, a position she has now held for eight years.

“I feel like every day is new and exciting,” Almquist said when asked what she most likes about her life as a teacher. “I like the freedom of being creative and stimulating young minds.”

Although she teaches all subjects, Almquist’s favorite is history, which she integrates with reading and writing instruction. Almquist’s students adopt roles as famous historical figures and write autobiographies. To culminate civics units, she has created her own second-grade “Constitutional Convention,” complete with costumes and a class constitution of classroom rules for the year.

Almquist credits her own CU practicum and student teaching experiences as key to her teaching success. A placement at Nederland Elementary taught her constructivist approaches to math and science. Working at the San Juan Del Centro and in a Westminster elementary classroom under Professor and President’s Teaching Scholar Shelby Wolf’s direction got her excited about teaching literacy and children’s literature. “Thanks to Shelby I still can’t go into a

bookstore without buying a new children’s book,” Almquist said. “It made me poor!” And of course inspiration by Sue Brighton, Almquist’s own cooperating teacher at Superior Elementary in 1998, made a huge difference.

Because of these experiences, Almquist commits herself to helping aspiring teachers. She has mentored both practicum and student teachers and is currently supervising Jesse Grow, another CU teacher candidate. “It’s hard at first...it’s hard to let go,” Almquist noted. “There’s a lot of



Jennifer Almquist and her second-grade students celebrate the day she receives the Milken National Educator Award.

modeling and extra work required. But I feel like having a student teacher is giving back to my career—it’s a way to give back to others.”

Of course student teacher Grow couldn’t be happier. “I get to say, I *did* teach under one of the best teachers in the nation!” she exclaimed. “Jen is one of the most passionate teachers I’ve ever worked with and she teaches with all of her being. She cares so much about her kids.”

NAE Meets in Boulder, *continued from page 1*

minds. Wood’s point? Peer interaction can be used as an effective tool for learning concepts.

Membership in the NAE is selective and limited to those who have distinguished themselves as faculty leaders in their respective fields. It includes such national luminaries as Howard Gardner (Harvard University), Judith Warren Little (University of California, Berkeley), Nel Noddings (Stanford University), and Annemarie Palinscar (University of

Michigan) as well as CU-Boulder faculty Hilda Borko, Margaret Eisenhart, Walter Kintsch, Robert Linn, and Lorrie Shepard, current NAE President.

The school also boasts eight former Spencer Fellows now on the faculty: Ruben Donato, Jeff Frykholm, Steve Guberman, Ken Howe, Dan Liston, Michele Moses, Kevin Welner, and Shelby Wolf.



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Where Are They Now?

Teacher-Student Bond Reaches Across Decades

When Elizabeth Poe started a doctoral program in English education with Emeritus Professor Ruth Cline over 20 years ago, it was the beginning of a professional and personal relationship that continues to this day.

"I remember so strongly my relationship with Ruth—which is still going on," Poe says. "I still feel her influence and am really lucky to have been one of her students."

Poe now holds a prestigious position as a member of the Caldecott Committee, the organization charged with selecting the 2006 Caldecott Award for the best children's picture book. For her part she has now reviewed over 600 picture books, and the winner will be announced in January.

After earning her doctorate in 1986, Poe held faculty positions at the University of Wisconsin-Eau Claire, Radford University, and West Virginia University, where she earned



School of Education
Emeritus Professor
Ruth Cline



School of Education
graduate Dr. Elizabeth
Poe

the International Reading Association and the American Library Association.

Poe's international involvement has been ongoing since she worked with Cline. "A lot of my international interest came from Ruth," she notes. Poe serves on the advisory boards for the Mazza Museum of International Art from Picture Books and, through the IRA World Congress, she has organized children's literature festivals with authors and illustrators in Jamaica,

New Zealand, Scotland, and Hungary.

Poe attributes her commitment to service to Cline's influence. "I'd ask Ruth, 'How can I pay you back for all you've done?'" Poe remembers. "And she'd say, 'Help someone else. Make the ripples larger.'" When one of Poe's former English education students was recently named West Virginia Teacher of the Year, it became obvious that she has managed to do just that.

But Poe's success does not surprise her former professor and advisor. "She has so much talent," Cline recently noted, "and she's worked on different talents at different times. Elizabeth has high standards and I admire her for them."

Cline now splits her time between Iowa and Arizona and is an exhibited artist, recently winning a "Best in Show" award. Although she had taken art classes as a young teacher, she did not have time to pursue oil painting until she retired. "Art has been a real growing experience," Cline says. "I just love it."

Although Cline retired in 1992, she still maintains contact with Poe and the two visit each other at least once a year. "I feel like I'm part of her family," Cline notes. It's a rare friendship and professional relationship that has benefited not only the former advisor and graduate student, but countless other English educators.

the Outstanding Teaching Award in 2004. Although she has taught a number of English methods and composition courses, her real passion—children's and young adult literature—stems from Cline's mentoring as an English education professor with a specialization in adolescent literature.

Poe also edits the *Journal of Children's Literature* and,

although she left her faculty position at West Virginia University, continues with the same professional pursuits. She is active in the National Council of Teachers of English (NCTE) and the United States Board on Books for Young People. She also organizes readers theater with authors for



Ruth Cline's prize-winning painting

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eye on *research*

Can Value-Added Assessment Improve Accountability?

by Edward W. Wiley and Derek C. Briggs

Background

Policymakers understand the “Beverly Hills” problem, or in Colorado the “Boulder Valley” and “Cherry Creek” problem. School test scores tend to correlate strongly with the average wealth of families in a community. Therefore, status measures of student achievement at one point in time may reveal little about the quality of teaching and learning going on in schools and classrooms. To hold schools and teachers accountable, policymakers would prefer to measure the contribution each teacher makes to changes in student achievement. This would be the “value added” by each teacher or school.

Value-Added Assessment (VAA) has become increasingly popular in the context of test-based accountability, because it claims to determine how specific teachers and schools affect student learning—free of the influences of race, socioeconomic status (SES), and other contextual factors. The most widely used program is the Educational Value-Added Assessment System (EVAAS), modeled after the Tennessee TVAAS. EVAAS-based programs have been implemented or are being considered in over 300 school districts in 21 states. These include 65 districts in Colorado.

The objective of VAA is straightforward: to attribute changes in student achievement to sources responsible for those changes—most commonly teachers and schools. The output of VAA is an estimated teacher (or school) “effect”—a numerical measure that is intended to represent the effectiveness of a particular teacher or school with respect to growth in student achievement.

In its most basic form, VAA is based simply on the calculation of year-to-year changes in students’ test scores. More complicated forms of VAA incorporate statistical techniques to account for such factors as differences in student characteristics and the influence of previous teachers and schools on test score growth. In these models, the teacher or school “effect” is not the average test score gain for students in a particular classroom or school. Rather, it is the increment within these gains that is attributable to a specific teacher or school. This increment needs to be interpreted relative to the average score gain contributed by all the teachers or schools in the analysis. For example, if the average test-score gain from third to fourth grade is 50 points, a very good teacher might have an effect of 10 because her students gained an average of 60 points, and a poor teacher might have an effect of -10 because her students averaged only a 40 point gain. A negative effect does not mean that students lost achievement, only that they did not gain as much as the average student in that grade.

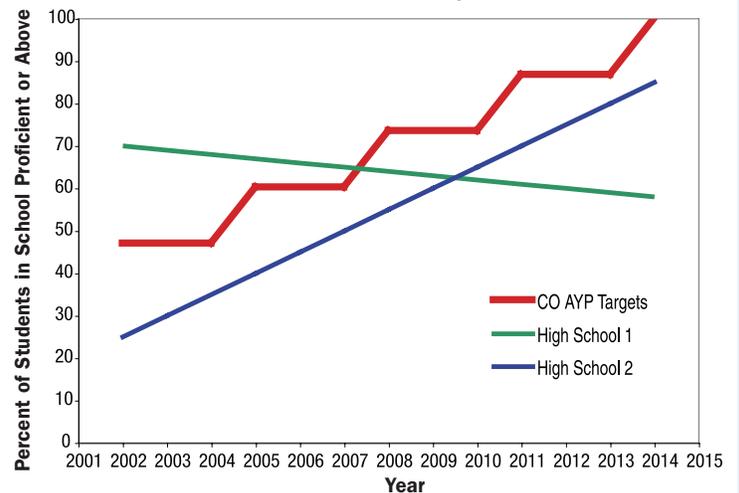
Although VAA can be considered a type of growth model (that is, a model based on changes in assessment scores over time), the terms “value-added assessment” and “growth model” are not interchangeable. VAA is best thought of as a type of growth model that tracks test scores longitudinally in order to estimate how much change can be attributed to teachers or schools.

The Impact of No Child Left Behind

Value-Added Assessment may have never emerged as a prominent policy tool had it not been for the rise of standards-based accountability. The 2001 reauthorization of the Elementary and Secondary Education Act, No Child Left Behind (NCLB), intensified a test-based accountability movement that had already gained momentum in many states. NCLB attaches high stakes to schools making progress toward accountability targets. However, given the serious problems with NCLB’s way of measuring Adequate Yearly Progress (AYP), there are strong incentives to try to find a different way to measure growth.

NCLB required every state to set its own standards for measuring AYP, first by deciding on the test score required for proficiency and then by deciding on a progress trajectory that would lead to 100 percent proficiency in 2014. The law specified that the baseline for percent proficient be set at the level earned by the 20th percentile of

Figure 1
AYP for Two Hypothetical Colorado High Schools in Math Proficiency



schools in 2002. In Figure 1, the solid red line shows the AYP targets set in Colorado for high school mathematics. In 2002, the percent of students reaching proficiency in mathematics at the 20th percentile of schools was 47 percent; therefore, the baseline was set at 47 percent proficient. Then, Colorado decided that new AYP progress targets should be set every three years, hence the stair-step graph leading to 100 percent proficiency in 2014.

Figure 1 also provides an illustration of why so many educators, statisticians, and policymakers are dissatisfied with AYP as a measure of progress. The blue line is an example of a low performing school that is making substantial gains of five percent per year from 2002 to 2014, yet because it is not gaining fast enough to meet the AYP target line, it will always be reported as not making adequate

progress. In fact, after two years of not meeting the AYP target, the school would be expected to develop and implement a school improvement plan, and its students would be given the option to receive free transportation to attend a different school. After five years of not meeting the target, the school would run the risk of being restructured. In contrast, the green line illustrates an initially high-performing school that is not making progress, yet will meet the AYP targets until the 2008 school year.

In the past year, the VAA movement has picked up even greater momentum, as states have requested increased flexibility to allow Adequate Yearly Progress (AYP) plans based on growth models. U.S. Secretary of Education Margaret Spellings has responded to the increasing enthusiasm for growth models by announcing support for 10 statewide pilot programs that incorporate growth models into AYP.

Problems with the Validity of Value-Added Assessment

A noted statistician, Henry Braun, describes what he terms the “fundamental concern” about VAA: whether VAA systems can in fact reliably estimate the effect of a particular teacher or school on student learning. A major issue here is that these sorts of causal inferences are particularly difficult to support when students have not been randomly assigned to teacher classrooms. Instead, teachers are often assigned classes based on seniority; and various forms of ability grouping and tracking of students are common. Moreover, schools within a given district, and districts within a given state, enroll students varying greatly in prior achievement, skills, and knowledge. And parents too may influence student performance by promoting different activities (such as more reading at home or after-school tutoring).

Many factors other than teacher performance may be reflected in estimates of teacher effectiveness, and they are difficult to disentangle from true differences across teachers. In the absence of random grouping of students into classes, researchers typically make statistical adjustments for variables that might serve to confound teacher effect estimates. However, even when such statistical adjustments are made, they seldom lead to unequivocal causal inferences about teacher or school performance. Some of the most significant challenges are mentioned below.

Persistence of Teacher Effects. Differences in VAA’s statistical assumptions can have a dramatic effect on which teachers are identified as excellent or poor. Some VAA models assume that a teacher’s effect on a student extends undiminished into the future. Other models make no such assumption; rather, they estimate the persistence of teacher effects (be it constant or diminishing over time). This “persistence assumption” affects the degree to which changes in student scores are attributable to current and previous teachers. For example, let’s imagine two excellent teachers in the same school. Mrs. Dazzling teaches third grade and Ms. Vraiment teaches fourth grade. If prior teachers continue to be credited for a student’s current performance, then Ms. Vraiment’s excellent teaching will be underestimated because a portion of her fourth-grade students’ gains will be attributed to Mrs. Dazzling.

Assumptions about Student Achievement Growth. Another way in which VAA approaches differ is in their assumptions about growth in student achievement. Given only “average” teachers over a period of years, should we expect student achievement to grow at a constant (linear) annual rate? Or should we expect growth to vary among individual students and over different years? Different assumptions about student growth lead to different VAA models, which in turn are likely to yield different estimates of teacher effectiveness.

Missing Data. Missing data is a major challenge when analyzing longitudinal data. Data may be missing because of unreliable record-keeping, absenteeism, exemption of certain students from testing due to parental requests of waivers or identification of students for whom the test is believed to be inappropriate (e.g., due to limited English proficiency). Another, more troubling cause of missing data may be related to “gaming the system” due to the high-stakes nature of assessment scores.

Some VAA models simply exclude students for whom complete data are not available. However, if data are missing not randomly but for some systematic reason, estimated teacher effects are likely to be biased. For example, students who fail to take achievement tests tend to perform less well than students who do take the tests. Rather than exclude subjects, many VAA approaches make assumptions about the patterns of missing data and generate data to fill in the gaps. Rather obviously, however, if the assumptions made as part of the data generation process are incorrect, the teacher effects yielded by these approaches will be incorrect as well.

Issues in Using Student Achievement Data. Considerable research has focused on the promise and perils of using student achievement data as a fundamental outcome in accountability models. Are increases in achievement scores what we most want teachers to “produce?” Will even more explicit assignment of responsibility for test scores lead to more extreme problems with teaching the test?

Other more technical questions also arise about the use of test-score metrics. Are tests at each grade level appropriate for the grade level? Are scores across different grades comparable? When different versions of the same test are used year to year, can we be sure they measure exactly the same thing in exactly the same way? When are the appropriate times to measure growth—fall to spring, or spring to spring? While all of these questions have significant implications for the accuracy of VAA teacher effect estimates, no current VAA approaches explicitly take them into account.

Conclusion

At this point in time, we should temper our expectations for what any VAA-based accountability system can reasonably accomplish, and we should use VAA effect estimates judiciously. Any teacher or school effect estimated from VAA models should be taken as only that—an estimate. VAA-based estimates may help identify teachers (or schools) that appear to be successful as well as those who appear to need assistance in improving their practice. However, until validity of the estimates deriving from the many different types of VAA modeling approaches is better understood, VAA-based estimates do not appear suitable as the primary basis for high stakes decisions about teacher or school quality.

Note

This summary is based in large part upon the report “A Practitioner’s Guide to Value Added Assessment” written by Edward Wiley at the request of the National Education Association. This report is available from Dr. Wiley by request at Ed.Wiley@Colorado.edu.

Reference

Braun, H. (2005). *Using student progress to evaluate teachers: A primer on value-added models*. [Policy Information Perspective] New Jersey: ETS.