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The new rules of for measuring teacher quality: Lessons learned from the assessment experts

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CERA Newsletter: Volume 4, Issue 1

Welcome Message from 2010 CERA President, Paula Carroll

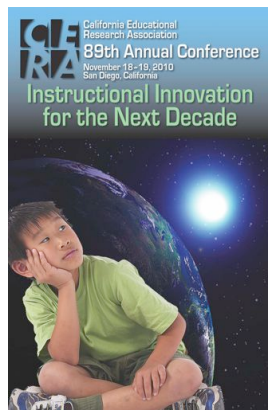
*By Paula Carroll,
CERA President*

The 89th Annual CERA Conference is coming to the Manchester Grand Hyatt in San Diego, California, for two full days on November 18-19, 2010.

As California educators and students struggle with the effects of budget cuts unseen before, it is even more important to implement effective instructional innovations during the next decade, and to continue to monitor the effectiveness of both the program and those implementing it. We are seeing strong state and federal focus on the application of educational data to teacher, school and district decision-making; creating a culture and climate to develop and support the use of data; designing ways to promote data use; and the imperative of connecting student data to instructional practice. This focus on educational data will also bring changes in accountability at all levels for all students' achievement.

According to the recently released U.S. Department of Education Report on **Use of Data Systems to Support Reform***, states and districts are making

significant progress in building educational data systems and are starting to use that valuable data to change classroom practice and improve student achievement. The report determined that school leaders are still searching for the best models to mine the data to discover the best instructional methods for students. Colleagues in the field and educational researchers will share their findings at the next CERA conference.



The theme for this year's CERA conference is: **Instructional Innovation for the Next Decade**. Strands within this theme are: *Determining Teacher Effectiveness, The Use of Technology, Considerations for Special Populations, Data Systems to Support Improvement and Changing Paradigms of Instruction and School Organization.*

We encourage you to consider submitting a presentation proposal for the conference. Your participation will help to build a program that helps CERA members learn which programs are effective and which practices can be replicated. An announcement requesting presentation abstracts will be e-mailed to CERA members in early spring, 2010. Proposals will be due September 17, 2010. One of our goals this year is to broaden our conference to related organizations (e.g. school psychologists, personnel directors, researchers in institutes of higher education) and to strengthen our connection with graduate students.

Conference and hotel registration information is available at <http://www.cera-web.org/> just click on "Upcoming Events" for more detailed conference information.

Thank you for your continued interest in the advancement of knowledge related to educational research, evaluation, and assessment. ■

*For additional information on the report, visit <http://www2.ed.gov/about/offices/list/opepd/ppss/reports.html#edtech>

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- Roger Yoho, Vice President*
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88th Annual CERA Conference: *“Formative Assessment: Implications for Student Learning”*

By Mary Tribbey, CERA Past President

The 88th Annual CERA Conference, held at the Sir Francis Drake in downtown San Francisco, was an outstanding success. Our 300 attending members pushed the meeting space to the capacity of the historic hotel, but our membership rose to each spatial challenge with good humor and the staff did an excellent job supporting all aspects of our meeting.

The 88th conference featured two terrific keynotes: A compelling opening keynote was delivered by Dylan William, Deputy



Director of the Institute of Education at the University of London, who argued that system-wide educational reform needs to address teacher quality through new kinds of teacher learning, new models of professional development, and the use of formative assessment strategies in the classroom. The second keynote, launching day two, was given by the irrepressible and wise Jim Popham, professor emeritus at the UCLA Graduate School of Education and Information Studies, who addressed the urgent need for assessment literacy in the educational trenches, and exhorted us to enhance our own assessment literacy and

encourage more teachers, schools and districts to use a formative assessment process. Both of these keynotes were thought-provoking and well received by our membership.



Another major highlight was the Lifetime Achievement Award, bestowed on Dr. Wendy Yen, Distinguished Presidential Appointee for K-12 Statistical Analysis at the Educational Testing Service, for her extensive contributions to the field of educational measurement. Dr. Yen captivated us all with a highly entertaining and informative speech, and we are pleased to add her name to the CERA roster of Lifetime Achievement Award winners.

The conference offered a special session by Margaret Heritage, Assistant Director for Professional Development at the National Center for Research on Evaluation, Standards and Student Testing (CRESST) at UCLA who presented a framework for improving the use of data and elicited feedback from CERA members to guide further development of this collaborative effort. Great pre-conference sessions were offered to build the skills of our members, as well as a panel discussion on developing



interim assessments. Dr. Blessing Mupanduki presented, and received the **2009 Outstanding Paper Award** for his paper entitled, *“The Effectiveness of a Standards-Based Integrated Chemistry and Mathematics Curriculum on Improving the Academic Achievement in Chemistry for High School Students in Southern California,”* and will present his paper at the 2010 AERA Annual Meeting in Denver, Colorado. All told, there were over 70 sessions offered in ten major strands. Thanks to all of you who presented research findings and shared expertise with your colleagues. These presentations are the backbone of the conference and provide great value to our members.

My heartfelt and special thanks to Tom Barrett, Paula Carroll, Roger Yoho, and Karen Greer who all put in many hours of work to make this conference a success; to Bob Carlson, Kate Esposito and Irina Okhremtchouk for excellent editorial work on the newsletter, and to Darrell Brown, Rachel Perry, I. Phillip Young, Nazanin Zargarpour, and Irina Okhremtchouk for their service on the board in 2009. It was an honor and a pleasure to preside over the 2009 conference. I hope to see all of you at next year’s CERA conference in San Diego. ■

Attention Graduate Students and Faculty Advisors!

CERA is thrilled to announce some exciting new membership and conference opportunities:

Graduate Student Annual Membership - \$15.00
Reduced Graduate Student Annual Conference Rate
“Outstanding Graduate Student Paper” Award – NEW!
Graduate Student Presentation Poster Sessions – NEW!

2010 CERA Lifetime Achievement Award: Wendy Yen

Wendy M. Yen, who currently serves as vice president of research for Educational Testing Service (ETS), was selected as the Lifetime Achievement Award recipient for 2009 88th CERA Conference. Dr. Yen oversees the technical quality of assessments designed and administered by ETS K-12 Works including the tests comprising California's Standardized Testing and Reporting (STAR) Program, the nation's largest K-12 testing program. Prior to joining ETS K-12 Works, Dr. Yen was vice president of research at CTB/McGraw-Hill. In addition, she has also provided technical guidance for many customized state and federal programs. Dr. Yen was recipient of The McGraw-Hill Companies Excellence in Management Award in 1996. Yen has served as president of the National Council on Measurement in Education, editor of the *Journal of Educational Measurement*, and on committees for the National Academy of Sciences and the National Assessment Governing Board. Yen is the co-author of *Introduction to Measurement Theory*,

currently in its tenth printing, and author of numerous professional presentations and publications, primarily in the area of item response theory. Yen holds a Ph.D. in mathematical psychology from the University of California-Berkeley, where she also earned a master's degree in applied statistics and a bachelor's degree in psychology. Dr. Yen holds the belief that all educators want to help students learn, and learn a lot. Educational systems are very complex in that they are both dynamic and reactive, and the implications cannot always be anticipated. Accountability systems, Dr. Yen believes, can contribute in a number of ways. They can help us be thoughtful about the meaning and alignment of performance standards; define and focus on what students need to learn; and see what change is, or is not, taking place. Historical information from achievement testing can help us evaluate the difficulty of our goals, and identify the resources need to reach or our stretch goals. While it is



important to have high goals, they must be attainable and hopefully not create too much stress or focus. Psychometricians can assist by asking lots of questions, offering a scientific basis for the data analysis and communicating in an understandable way so educators know what is working and what is not. Dr. Yen's work is not only the highest technical quality, but it is also understandable to myriad audiences. She has the ability to take very complex technical issues and explain them in a comprehensible way. We thank Dr. Yen for her contributions! ■

Best Paper Award Winner: Dr. Blessing Mupanduki

Synopsis of the Study

The Effectiveness of a Standards-Based Integrated Chemistry and Mathematics Curriculum on Improving the Academic Achievement in Chemistry for High School Students in Southern California

The purpose of the study was to determine whether integrating chemistry and mathematics curricula and teaching practices significantly improves academic achievement in chemistry among high school students in Southern California. The study was conducted during the 2008-2009 academic year. A quasi-experimental research design was used to explore the effects of a standards-based integrated chemistry and mathematics

curriculum (Integrated CHEMAT) and teaching practices on student academic achievement when compared to a traditional standards-based chemistry curriculum (Regular CHEM) and teaching practices. Academic achievement was based on a researcher-created Chemistry Achievement Assessment (CHAAS). The sample population involved in the research included 136 high school chemistry students attending high school in a Southern California rural school district. The research involved 2 groups of 68 students each: the experimental group and the control group. The data were analyzed using SPSS independent samples *t*-test, one-way multivariate analysis of covariance (MANCOVA), and profile analysis. Statistical significance was determined at the .05 and .001 levels. Significant differences were

found when analyzing the effects of the standards-based integrated chemistry and mathematics curriculum and teaching practices. All 3 statistical analysis procedures (the independent samples *t*-test, MANCOVA, and profile analysis) indicated that students in the integrated CHEMAT program scored significantly higher than the students in the regular CHEM program in achievement scores based on the results of the CHAAS. ■



Current Research and Best Practices in Education

The new rules for measuring teacher quality: Lessons learned from assessment experts

By Brent Duckor, Ph.D.,
San Jose State University

The term “evidence-based” framework is a increasingly familiar one in the measurement community. It has been applied to describe the science and design of educational assessments (NRC, 2001), the structure of educational assessments (Mislevy, Steinberg, & Almond, 2003) and, more recently, a constructive approach to the problems of measurement (Wilson, 2005). In each of these cases, the experts have put the emphasis on “evidence”—collecting, weighing, and evaluating it for the purposes of measurement in education and the social sciences. The term evidence is seen by measurement experts as a necessary conceptual foundation of their practice (Duckor, Draney & Wilson, 2009). For those of us working in this part of the psychometric tradition, any inference is only as good as the evidence it rests upon, and the degree to which that evidence has been interrogated by a “scientific” or at least principled method of inquiry.

The orientation towards evidence-based measurement practice echoes the views expressed by leading experts in the field. The American Educational Research Association, American Psychological Association, and National Council on Measurement in Education’s *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999) noted the role of evidence-based argument in constructing measures. Validation can be viewed as developing a scientifically sound validity argument to support the intended interpretation of test scores and their relevance to the proposed use. The conceptual framework points to the kinds of evidence that might be collected to evaluate the proposed interpretation in light of the purposes of testing: As validation proceeds, and new evidence about the meaning of a test score becomes available, revisions may be needed in the test, in the conceptual framework that shapes it, and even in the construct underlying the test (p. 9).

Evidence-based frameworks for measuring human proficiencies are explicit about the targets of inference. In all cases, these frameworks are construct-driven and rely on hypotheses about an underlying human proficiency or skill set. While some evidence-based approaches involve hypotheses about various *knowledge-types* or *facets* of human understanding, others depict *learning progressions* in specific subject-domains. Most importantly, evidence-based frameworks for measuring proficiencies and skill sets treat the instrument—whether it takes the form of a survey, performance task, or observation protocol—as a logical argument in which results can be interpreted to support a decision. Generalizations about the proficiencies of human subjects under study are arrived at through a process of reasoning from evidence. From this perspective, measuring *latent qualities* in humans such as teacher “effectiveness” or “classroom management” skills is best conceptualized as a scientific research enterprise that involves hypothesis testing, the refinement of instrumentation, the choice of a scoring strategy, and the systematic interrogation of all available evidence to support or refute a conclusion about an individual or group.

Debates about the role of teacher quality in American education are not new (Darling-Hammond & Youngs, 2002). Studies about the effects of teaching and teacher characteristics on student achievement have been part of the policy landscape for decades. A recent education policy paper boldly stated that “good teaching matters” but beneath these findings lurks a stubborn problem. But one question that inevitably surfaces in such debates is, “How do we measure teacher quality or teaching qualities?” And more importantly, “How can we measure the progress of teachers as they move through pre-service teacher preparation programs on to field placements, and ultimately into their first years of classroom teaching?” Recent policy calls for the implementation of so-called value added models that promise to measure the effects of teachers on K-12 student achievement are laudable. But these calls are fundamentally misguided if they do not squarely address the educational measurement and assessment questions related to the definition of teacher quality.

Research on exemplary teacher education programs, professional practice, and “how-to” taxonomies of best practices has given us a broad framework for identifying what good teaching looks like from a multi-faceted perspective. Recent work on learning progressions in K-12 education promise to advance our understanding of how to model growth and capture trajectories in teachers’ practice in post secondary education settings—from the pre-service to the induction and in-service years. The challenge has been to connect previous research and institutional strands into a common articulation of what any teacher learning progression might actually look like from each of the stakeholders’ perspectives.

Here is the challenge for the science and design of the educational measurement of teacher quality, or more productively for this discussion, measures of quality teaching that matter. I summarize the findings from leading educational measurement experts into five lessons, each with a corresponding new rule:

Lesson 1: The Theory of Action

Rule. Anyone purporting to measure teaching proficiencies in the domains of planning, assessing, reflecting, adapting, managing or any other skills must situate their claim in well-documented research. Based on advances in the cognitive sciences, for example, we can now conduct research on a range of conceptual tools or schema that people use to structure their understanding of discreet subject-disciplines. Instead of focusing on documenting the accumulation of factual knowledge or routine skills, we can investigate how individuals are able to integrate knowledge, skills, and procedures in ways that are useful to explaining results, interpreting situations, and solving problems. The focus has shifted from *how much* knowledge someone has to *which levels* of knowledge they can demonstrate on rich, complex tasks. An individual’s ability to use a schematic representation of key concepts, each of which has a definite and meaningful relation to the other, is more characteristic of expert knowledge. To tap various levels of knowledge-in-practice proficiency, research is now directed at those cognitive structures, reasoning

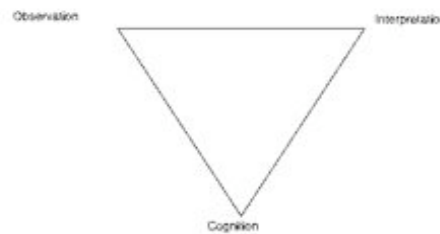
processes, behavioral routines that generally require more complex, embedded tasks to reveal information about thinking patterns, reasoning strategies, and growth in understanding over time.

Lesson 2: The Construct Definition

Rule. Related to rule 1, this rule states that researchers must provide a concrete, schematic representation of the target of measurement, for example, a range of practices that demonstrate proficiency with instructional planning. The National Research Council (2001) refers to this as the first corner of the assessment triangle, which provides a model of cognition and skills acquisition in a given domain under study (Figure 1). The more commonly used term “construct” is the explicit theory or hypothesis that describes the underlying human trait, proficiency, or skills being measured. Experts have many ways of depicting the cognition corner in an evidence-based framework for measuring, including facets, construct mapping, SOLO taxonomy, predicted response patterns, knowledge typologies and other schematic representations.

Lesson 3: The Instrumentation

Rule. The measurer must provide a blueprint for the items used to make observations about teaching qualities. In this vertex of the assessment triangle, the researcher describes the set of prompts, tasks or situations that are expected to elicit demonstrations of the construct or latent trait under study. Experts often refer to the contents of this vertex as “the items.” Experts know that the tasks or items that human subjects are asked to engage with in an assessment, measurement, or testing situation are not arbitrarily chosen (NRC, 2001). From the perspective of evidence-based frameworks for measuring teacher qualities, items are designed, piloted, evaluated and most importantly deliberately chosen to represent the cognitive model or construct under investigation. Experts have various strategies for developing item sets, and they may have preferences for certain types of items (e.g., concept maps for schematic knowledge), depending on the content-domain or construct theory. Regardless of these preferences, experts formulate clear and distinct rules and methods for ensuring connections between cognition and interpretation vertices of their respective mental models



for measuring. It is important to note that the “garbage in, garbage out” adage is applicable to the instrumentation rule. Both content and construct validity arguments rest on the inferences that can be drawn from, in this case, teachers’ responses to items and instruments used to warrant judgments about effectiveness.

Lesson 4. The Fairness in Grading

Rule. Researchers must provide examples of the scoring schemes such as rubrics, checklists, and so forth that they use to make claims about teaching qualities observed in data collection. The third corner of the assessment triangle, “Interpretation,” examines the evidence collected from the observation corner in light of the constructs from the cognition corner. The NRC (2001) committee sees this last corner as encompassing “all the methods and tools used to reason from fallible observations” (p. 48). This vertex is most commonly referred to as “score interpretation,” which, in the case of educational or psychological testing, is most often constructed from numbers generated by quantitative models. Experts who employ evidence-based frameworks for measuring use statistical information to investigate the expectations or hypotheses developed about the constructs or traits under investigation. They see standard psychometric models based on classical test theory, item response theory, and generalizability theory as tools for examining the nature and structure of observations from items. Measurement experts who work in the evidence-based tradition outlined above take a principled approach to fitting assessment data to psychometric models; they do not expect that every measurement model fits each and every data set. Rather, the aim is to adopt appropriate psychometric tools and methods to support the inferences being made.

Lesson 5: The RV Rule. Reliability and validity are the boundary markers that control any serious discussion of teacher quality measures. Evidence for and against

the interpretation of results based on a teacher’s scores must be presented in a technical report that meets professional standards. While the validation process is always a matter of degree and on-going, experts can check up on judgments, conclusions, and statements about person’s skills and proficiencies, in part, by weighing the different forms of evidence—qualitative and quantitative. The argument for any measure’s fair use depends on the quality of the evidence advanced by its creators. We have yet to see measures of teaching qualities that meet the RV challenge. Handwaving by data crunchers and the magic wand of appeals to authority are no substitute for the presentation and defense of the meaning of a score and its generalizability.

Ten years ago the NRC committee put the nation’s experts’ thinking into sharp relief when it stated that knowledge of educational assessment (and measurement and testing for that matter) consists of knowing that:

Every assessment is based on three interconnected elements: a theory of what students know and how to develop competence in a subject domain (cognition); tasks or situations used to collect evidence about student performance (observation); and a method for drawing inferences from those observations (interpretation). These three elements can serve as a framework for thinking about the foundations of assessment and their interrelationships. (p. 36) A crucial point is that each of the three elements of the assessment triangle not only must make sense on its own, but also must connect to each of the other elements in a meaningful way to lead to an effective assessment and sound inference. (p. 49)

[All] three vertices of the triangle must work in synchrony. It will almost certainly be necessary for [instrument] developers to go around the assessment triangle several times, looking for mismatches and refining the elements to achieve consistency. (p. 51)

Today’s discussion about measuring teacher effectiveness would benefit from a quick review of the assessment triangle, which

teaches us about a powerful “framework for thinking” that measurement experts employ as they analyze extant instruments or plan with when designing future ones. Researchers, policy makers, and other stakeholders in the debate over teacher effectiveness would do well to learn from these and other state-of-the-art educational measurement practices. These new rules for constructing meaningful and consistent measures of teaching practice can be fruitfully applied to the emerging teacher quality literature. More importantly, these rules should serve to referee general competing claims from different research camps about teacher value-added effects, especially around discussions where specific teaching practices are purported to produce gains in student achievement. ■

Assessing Teacher Quality

By Gwen Brockman, Ph.D.,
CSU Dominguez Hills

"The single most important factor influencing student learning in our nation's schools is the quality of teaching. Students who have teachers who know their content and how to teach it effectively achieve substantially more than their peers who do not."

(Duncan, 2010)

Over 20 years have past since the movement to increase student achievement through educational reform began. The increased emphasis on student achievement has lead for national calls to improve teacher quality (Phillips, 2008; NCLB 2004). Although teacher quality has received increased emphasis, little agreement about how best to measure teacher quality exists. The National Board for Professional Teaching Standards (NBPTS), founded in 1987 provides concrete measurable evidence to support a national target and rigorous standards for the teaching profession. This assessment system was designed to certify teachers and provide a pathway for researchers to more closely examine and measure student achievement (NBPTS, 2010); thus measuring teacher quality. When asked about the Teacher Quality Initiative (2010); an initiative to work in conjunction with No Child Left Behind (NCLB, 2002), George Noell from Louisiana State University said, "You need to know who's coming into teaching, how they were prepared and where they were prepared. Then you can

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make a link between who taught a kid, who trained the teacher and the overall efficacy of that teacher."

Research findings comparing National Board Certified Teachers (NBCT) and non-certified teachers indicate that NBCT expose their students to higher quality instruction where students learn more than in classrooms without certified teachers (Phillips, 2008; Darling-Hammond & Youngs, 2002; Darling-Hammond, 2000). In a study comparing second and third grade NBCTs with teachers who were unsuccessful in their attempts to become certified, Goldhaber et al. (2004) found that successfully certified teachers produced higher levels of student achievement. Another example is a study by Vandervoort et al. (2004), who found that NBCTs outperformed non-NBCTs on math and language arts on standardized tests.

National Board for Professional Teaching Standards (NBPTS) define effective teacher as meeting the rigorous standards of instruction to facilitate and contribute to student learning, assessing student learning, and creating an environment productive for learning. This effective means of measuring teacher quality (Okpala, James, & Hopson, 2008) are measured by NBPTS propositions. Teacher quality as measured by the NBPTS is based upon the measurement of the following five propositions: a) teachers are committed to students and their learning by recognizing student differences and accounting for those differences in their instruction; b) teachers

know the subjects they teach and how to teach those subjects to students using diverse strategies so that all students understand; c) teachers are responsible for managing and monitoring student learning by keeping them motivated, engaged and focused; d) teachers think systematically about their practice and learn from experience by critically examining their practice with respect to current learning theories; and e) teachers are members of learning communities by working with other professionals, parents, community partners, and businesses (NBPTS, 2010). Advocates of the NBPTS believe that NBCT not only provide higher quality instruction, obtain higher levels of student achievement and student understanding of the content, but are also more reflective of their own pedagogical practice.

Teachers are committed to students and their learning by recognizing student differences and accounting for those differences in their instruction is the first of the propositions. A teacher preparation programs that has strong ties from theory to practice, "takes into account how students learn and how different students learn differently." (Darling-Hammond, 2009) It is difficult to understand theoretical ideas in isolation (traditional preparation programs), but when paired with classroom practice simultaneously the two ideals come together to provide a rich knowledge base for student instruction. Recognizing the differences in students and accounting for these differences in instruction have proven to increase

academic performance in students (Salina & Garr, 2009). This approach to teaching and learning takes into account a number of variables students bring with them to the classroom. Accommodating cognitive, developmental, social, motivational, and affective factors are principles founded with the American Psychological Association Presidential Task Force (1993). The intention of these NBPTS propositions and the Task Force was the identification of the unique attributes learners have and use in classrooms.

Teachers know the subjects they teach and how to teach those subjects to students using diverse strategies so that all students understand. NCLB Act (2001) mandated that teachers become *highly qualified*. This demonstration of content knowledge and pedagogy is “the single most important determinant of what students learn is what their teachers know. Teacher qualifications, teacher's knowledge and skills, make more difference for student learning than any other single factor” (Darling-Hammond, 2009). We have to be sure that teachers understand not only their content area, which is very important, but also, how do students learn? How do different students learn differently? How do students acquire language? How do second language learners need to be taught? How do we organize curriculum in ways that are effective? Almost every study that's done that looks at these factors sees significant substantial effects on what students learn (Darling-Hammond, 2009). Researchers have found that subject-matter knowledge and the respective pedagogy associated with the content area has increased student achievement. Smith, Desimone, and Ueno (2005), empirically demonstrated positive outcomes are associated with student achievement when they measured teachers who held undergraduate and graduate degrees in the content area they taught. This level of competency not only meets the criteria for NBPTS but also the federal No Child Left Behind Act of 2001 (NCLB) for a *highly qualified* teacher.

Teachers are responsible for managing and monitoring student learning by keeping students motivated, engaged and focused. Studies have shown that instruction that actively engages students' results in greater academic performance (Jones & Brockman, 2009; 2008). Weston and McAlpine (1998) found that active engagement, modeling, and interaction were essential to instructional decisions made by teachers. Additionally, teachers who have a high regard for student perspectives will emphasize their interests, motivations, and points of view to engage and maintain student

interests to keep them actively engaged (Bracey, 2009).

Teachers think systematically about their practice and learn from experience by critically examining their practice with respect to current learning theories. When teachers reflect on their practice they become more aware of their own teaching. This process provides opportunities to identify and strengthen our own practice. It also helps to facilitate the decision making process to justify instructional strategy choices to benefit students (Phillips, 2008). Teachers who engage in a cyclical practice involving the analysis of student performance, designing lessons based on their findings and evidence based strategies, and determine new learning goals are associated with not only fostering learning but also increased student achievement (Hirsh, 2009; Cheung, 2009; Okpala, James & Hopson, 2008; Darling-Hammond, 2000). Okapala, James and Hopson (2008) found that 89% of all NBCT were reflective practitioners.

Teachers are members of learning communities by working with other professionals, parents, community partners, and businesses. The active engagement of collaboratively working with parents and others provide the teacher with an avenue to develop curriculum, engage in staff development, and instructional policy serves to increase teacher awareness, professionalism, and pedagogy. Incorporating the latest research into practice from professional development enables the teacher to engage in ongoing learning. When asked what questions Dr. Darling-Hammond thought were important for parents to ask she said “What kinds of professional development are you engaged in? What are you working on? What does the district do to encourage that (professional development)?”

Producing highly qualified and good teachers are the goal of every teacher preparation program. Higher education institutions aligning themselves and their credential programs would do well to seek the guidance of the National Board Certified Teacher. Institutions of higher education are faced with measuring each of these standards in different ways.

Following the guidelines of NBPTS faculty at higher education teacher preparation programs are likely to produce effective teacher candidates who will likely increase student achievement in today's urban schools. ■

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Issues Concerning Teacher Recruitment for Educational Research

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Effective teacher recruitment is essential for collecting reliable and valid data from teacher and classroom-based research. Not only should participants reflect the characteristics of the target population, but they must also want to participate fully and provide the information researchers desire to collect. Only then will their experiences provide accurate data for answering prescient research questions and eventually identifying meaningful improvements. Thus, attention to the processes and challenges associated with teacher recruitment is of paramount importance for researchers interested in a range of issues from teacher instructional and assessment practices, to fidelity of curriculum implementation and retention. In this article, we present a real-world example of the obstacles related to recruiting teacher participants, and discuss ways to meet these challenges.

As coordinators of teacher recruitment and selection for a multi-year project on teacher assessment practices, we have become acutely aware of the art that is teacher recruitment. More than a year ago, we began recruiting forty California science teachers to participate in our study. Recruitment has consisted of several waves that targeted state, county, district, and school-level science coordinators, as well as principals and teachers. We have used a variety of methods to communicate with potential participants and their administrative contacts, including, emails, letters, face-to-face meetings, phone calls, fliers, and postings on statewide professional development sites. Throughout the recruitment phase we have struggled to generate high volumes of interested

teachers, and while we have finally attained our target sample size, we still struggle to guarantee their participation throughout the remainder of the project.

Our experience over the last year has given us a feel for the recruitment process in general and glimpse into the challenges associated with teacher recruitment. It has also spurred us to look to the literature for research and guidance on teacher recruitment for classroom-based research. We conducted a literature search in Google Scholar, JSTOR, and ERIC for studies on effective practices for teacher participation in educational research. This search revealed that current journal articles focused on teaching and teacher practice assume an objective tone that fails to capture the inherent complexities of recruiting teacher participants for classroom-based research. Researchers typically mention the methods they employed to identify study samples, and response rates or the number of teachers who matriculated; but they do not describe the difficulty with which these participants were recruited. The level of attention to appropriate research designs and the validity of instruments and data analysis does not seem to translate to the essential job of teacher recruitment.

While there are numerous studies and best practices guidelines for participant recruitment for marketing and health research (Patel, Doku, & Tennakoon, 2003; Sung, et al., 2003), we were able to identify only one research article on recruiting teachers for classroom-based research. Olejnik and Doeykin's (1982) teacher solicitation experiment reveals that, in many ways, little has changed in the past thirty years; teachers are more likely to join studies if participation includes a stipend, and teachers are not very concerned with the experimental or non-experimental nature of study.

But the climate around teacher recruitment has changed. Cutbacks loom amidst the financial uncertainty across many districts. This has placed not only extra stress, but also extra time commitments on teachers in schools. Thus, contrary to Olejnik and Doeykin's findings, the time requirement for teachers – even a short time commitment – matters greatly. This has been evident in our recruitment process. For our study, teachers are asked to collect and briefly reflect on existing planning and assessment artifacts as well as a handful of student samples for two 10-day periods. This requires roughly 10-15 hours of their time over the course of a school year. In return, teachers receive a \$400 stipend and gift to raffle off to their students. In spite of the benefit of the study to allow teachers to focus on their existing practices and classroom artifacts, many teachers have declined to participate. While some teachers have cited a lack of interest, most have expressed great concern over job security and already overburdened schedules.

We recognize the enormous loads our teacher participants are saddled with on a daily basis. We have also discovered that in the NCLB era, many teachers are concerned with the validity and relevance of research for themselves and their students. Teachers rightly desire thorough explanations about our work and explicit information about their involvement. For teachers who are able to find time to participate, the incentive structure has also become more sophisticated. Not only do teachers want adequate financial compensation, but they also want to leverage these opportunities for professional development and feedback to improve their practice. As such, we have had to adjust our timetable for teacher recruitment, and modify some of our participant expectations. We have also learned to be more transparent and clear about our research goals.

Another important teacher recruitment issue that does not directly involve teachers is the process of recruiting participants through school districts. In addition to considering our work with teachers, we also need to consider the potential challenges and opportunities of working with school districts to recruit teachers for classroom-based research. Large school districts are both a blessing and a curse for teacher recruitment. The blessing is obvious; the sheer number of teachers in large unified school districts improves the probability that interested teachers will volunteer. Theoretically, marketing one's research project within one or two large school districts could yield all of the necessary participants. However, these same large districts can be difficult to access for several reasons. First, large districts understandably require review protocol that can be difficult and time consuming. Proof of IRB approval from the researcher's institution does not suffice as many large districts require their own similarly rigorous review process. Second, many large districts seemingly suffer from research fatigue. Researchers who need large amounts of teachers for their studies repeatedly approach the same districts and many of the same teachers. Several teachers in our recruitment process declined participation because they were already involved in multiple studies. Some teachers from a large district had even participated in the previous study by the principal investigators. This not only exhausts the amount of time that teachers in big districts can spend on research projects, but also likely biases results, as the same pool of teachers are used repeatedly.

In our work, we have discovered a host of untapped prospective teacher participants that exist outside of large school districts. These teachers are part of small public school districts scattered throughout the state that are rarely asked to participate in studies. In our own study, individual teachers from small districts near large comprehensive school districts comprise a significant portion of our sample. Several of these teachers have never before been approached by researchers and are thus excited for the experience. In general, these smaller districts require a brief description of the study, proof of protocol review from the principal investigator's institution, perhaps a phone call from the research team, and an assurance that the already stretched administration or administrative assistants will not be overly burdened by requests from the research team. Similarly, several teachers from private schools expressed interest in participating in our research because they too had never before been asked. While these teachers could not participate in our study because of a difference in standardized tests that are implemented in some private and public school systems, these private school teachers continue to represent an often-untapped resource for teacher participation.

Of course, small public or private school districts present challenges as well. The recruiting pool in these systems is inherently limited; a given district may have only a handful of teachers in each subject area, schools may use fewer standardized assessments, or rely less strictly on state standards. However, if these small public or

private school systems meet the pre-requisite criteria, ultimately, the time spent gaining access to and volunteers from a few large districts may be similar to recruiting from many smaller districts and private schools.

Drawing on our experiences and the extant literature on participant recruitment in non-education fields, it seems clear that education could benefit from further research in the area of teacher recruitment for classroom-based research. In the meantime, it appears that traditional approaches towards teacher recruitment may need to give way to more refined methods that call on enhanced interpersonal skills and greater researcher flexibility. ■

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Book Review: The Global Achievement Gap by Tony Wagner, 2008

Reviewed by Donna O'Neil, Ed.D., Director,
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In *The Global Achievement Gap*, Tony Wagner, co-director of the Change Leadership Group at Harvard Graduate School of Education, presents a masterful argument that schools in their current format fail to provide students with the skills they need to succeed in this new era. Wagner suggests that even our best schools, as

judged through current metrics, fail to prepare students to be successful workers and citizens in the 21st century. This has resulted in a "global achievement gap – the gap between what even our *best* schools are teaching and testing versus what all students will need to succeed as learners, workers, and citizens in today's global knowledge economy" (p. 8). The responsibility for this gap is placed not only on schools but also on the state and

national systems, which guide school structure.

Wagner discusses in depth the following survival skills for the 21st century: Critical Thinking and Problem Solving, Collaboration across Networks and Leading by Influence, Agility and Adaptability, Initiative and Entrepreneurialism, Effective Oral and Written Communication, Accessing and Analyzing Information, and Curiosity and

Imagination. In doing so, Wagner puts forth a compelling argument that these are truly the skills students need to succeed and that our current model of education, driven by standardized tests built upon fact-based content standards, presents a significant barrier. Much of public policy, including No Child Left Behind, has created an educational system focused on preparation for selected-response tests in disconnected subjects. Whether intended or not, what is omitted in the process are the very skills Wagner posits are the most valuable.

Throughout the book, Wagner articulates views from employers describing what they need from workers. He then contrasts these needs with current practice in k-12 classrooms. By weaving together both experiences Wagner highlights the gap in expectations between the two. It isn't about a better education – it is

about a different education. Wagner challenges all educators to move beyond the model of education they received to create a new system, which helps students, learn in context, using all of the tools available to them, to create new learning. He suggests, “The most important skill in the New World of work, learning, and citizenship today – the rigor that matters most – is the ability to ask the right questions” (p. 111).

Midway through the book, this reader was left wondering what this new model of education might look like. I was trapped in the model of 50-minute periods, state-adopted curriculum, rigorous content standards, AP exams as college preparation, and standardized testing for accountability purposes. The illustration of what the New World of education can look

like sealed the deal for me. There are schools, which are making progress in this area. Reading the final chapters propelled me to begin dreaming about supporting schools for change.

Pick up this book and be prepared to have your fundamental ideas about K-12 education challenged. The Global Achievement Gap, like recent books by Michael Fullan and others, challenges educators to stand up and make a change. From classroom teachers, administrators, and researchers to parents, policy makers, and students, everyone must be involved in ensuring that education in the 21st century produces the skillful workers and citizens necessary in our new global society. (ISBN-13: 978-0-465-002290)

A Note From The Editors

Dear Colleagues:

It is our pleasure to introduce you to the forth volume of the CERA newsletter! The newsletter is an official publication of the California Educational Research Association. This peer-reviewed issue is a vehicle for disseminating current research, practice, trends and policy pertaining to education in the state of California. The CERA Editorial Board encourages submissions from varied disciplines involved in either K-12 or post secondary education. The newsletter is published bi-annually in the fall and spring of each year. There are six broad areas in which our readers are encouraged to submit manuscripts for publication:

- Best Practices in K-6 Education
- Best Practices in Secondary Education
- Best Practices in Teacher Education
- Review of State Educational Policy
- Testing and Measurement
- Reviews of New Publications

These areas are broadly defined so as to encourage submissions from varied disciplines and perspectives. Manuscripts are received with the understanding that all work is original, that the manuscript is not currently under review with another publication, and has not been published elsewhere. Each manuscript should be submitted electronically, and must have a cover sheet with the names and affiliations of all authors and the email address of the principal author. For each author a short biography including title and current position must accompany the manuscript. The manuscript should be between 200 and 1000 words. Prior to final acceptance of the manuscript, the authors may be asked to make revisions. However, the CERA Editorial Board reserves the right to make minor editorial changes, which do not affect the meaning of the sentences or manuscript. Additionally, all manuscripts should be written in accordance with the most recent edition of the Publication Manual of the American Psychological Association.

Although the California Educational Research Association fully supports this publication, the viewpoints expressed in articles are the views of the authors and do not necessarily reflect the opinions or endorsements of the CERA organization or the CERA Editorial Board.

Once again, we look forward to a long-standing and collaborative relationship with you - our readers!

Please submit all contributions or suggestions by January 31 (for spring publication) and August 31 (for fall publication) to Kate Esposito, Ph.D. at Kesposito@csudh.edu or Roger Yoho, Ph.D. at ryoho@cnsud.k12.ca.us.

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