

TAC: *Bringing the Wisdom of Practice from Teachers to the National Academies*

Joint TAC/CalTAC sponsored workshop discusses online professional development for teachers

Enhancing Professional Development for Teachers: Potential Uses of Information Technology, February 8-9, 2007

Dr. Chris Dede (Harvard University) and Dr. Louis Gomez (Northwestern University) presented a “good guy, bad guy” keynote presentation at the joint TAC/CalTAC workshop in early February.

The more than 90 participants represented teacher leaders, professional development providers, education researchers, school administrators, state policy makers, TAC Associate members as well as our Council members, and members of the California Teachers Advisory Council. Topics discussed include the potential of online teacher professional development (OTPD) to improve student learning through flexibility and versatility, development of community, and increased accountability.

Obstacles to using OTPD were also considered. Some of the obstacles to OTPD identified at the workshop include lack of knowledge about OTPD, lack of administrative support, access to technologies, time, financial support, support from higher education, and attention to fundamentals. Very little research has been done on the effects of OTPD on teachers and their students. Dr. Hilda Borko (University of Colorado), educational researcher and workshop presenter said “we know very little about what characterizes effective professional development.” According to Borko, what we do know is that teachers

can increase their knowledge and change their practice through intensive professional development. Strong professional development communities can foster teacher learning and records of practice are powerful tools for teacher learning.

The role of teachers in shaping OTPD needs to be a major focus of future research, according to Bruce Alberts, former president of the National Academy of Sciences and workshop participant. “One thing we badly need research on... is exactly how to give teachers a voice, an appropriate voice, at school district levels, in what professional development they get.” A strong theme emerging from the workshop is the need for teacher involvement at all stages of professional development from the design to implementation, assessment and ongoing revisions.

Presenter Leah O’Donnell (Eduventures) said it best when she said, “Different teachers have different needs, depending on such factors as the schools in which they teach, the students in their classes, their career stage, their previous experiences, and their individual preferences and learning styles.”

The teacher voice was strongly represented during the workshop. A workshop report will be available on September 10, 2007 and can be read or downloaded in PDF format without cost after that date on the website of the National Academies Press [by clicking here](#). Every current and former member and associate member of the TAC will receive a complimentary copy of the report.

Special Interest Articles:

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Former TAC member Valdine McLean testifies before Committee on Capitol Hill

When the TAC was asked to recommend a few teacher leaders to join an effort being undertaken by the Center for Teaching Quality (CTQ, North Carolina), Valdine McLean's name was offered. Valdine teaches biology, Chemistry and Physics in a small rural community in Lovelock, Nevada.

Valdine is National Board certified and a Milkin Foundation Fellow. When the CTQ was asked to recommend teachers who could testify before a congressional committee, Valdine was selected. She exemplifies what we mean when we say that the wisdom of practice from high quality teachers needs to be heard by policy makers. Some of Valdine's personal comments and reflections follow:

“I'm going to focus my remarks around four broad recommendations to policymakers

- **When thinking about how to recruit more STEM teachers into the classrooms, make sure that whatever programs you authorize in legislation ensure that entry courses at higher education institutions in the STEM fields provide exposure to the possibility of going into teaching.**
- **Induction, induction, induction...I cannot say enough about the importance of not leaving new teachers alone to flounder in their first few years of teaching.**
- **The federal government can play a key role in supporting programs**

like National Board Certification that require teachers to demonstrate their effectiveness.

- **Finally, I will close with a few thoughts on how policymakers can think about defining and measuring teacher effectiveness..”**

Valdine elaborated on the importance of college courses being structured for students who have the potential to become 9-12 teachers of science and mathematics. This is done for pre-med students, so why not engage potential teachers earlier in their college experience, she asked.

Next she spoke eloquently about the need to support new teachers through their first several years of practice, much like internships in the medical field:

“Even when teachers receive excellent preparation, that first year can feel particularly isolating,” she said.

Valdine also spoke strongly about the need for **“the federal government supporting professional development programs that: require teachers to demonstrate their effectiveness; require teachers to learn how to analyze student data to improve their instruction; and that emphasize expanding content knowledge.”**

In her closing remarks, Valdine clearly spelled out what a high quality teacher does in the classroom and asks that NCLB be restructured to support high quality teaching.

To read Valdine's testimony [click here](#).

Other Ongoing Studies in the NRC's Center for Education

Evaluation of Teacher Certification by the National Board for Professional Teaching Standards (NBPTS) There is a congressionally mandated study of the impact of teacher certification by the National Board for Professional Teaching Standards (NBPTS) by the Board on Testing and Assessment. More information is available by [clicking here](#).

Taking Science to School: Learning and Teaching Science in Grades K-8.is a new publication available from an ad hoc committee under the auspices of the NRC's [Board on Science Education](#). To read the report on line or order a copy, [click here](#).

Koshland Science Museum News

A new exhibit on infectious disease is available for viewing at the Marian Koshland Science Museum of the National Academy of Sciences and on its [website](#). You will find teaching materials on the web site along with an opportunity to [view the exhibits on line](#).

Web Resources for Teachers

The NRC's Division on Earth and Life Studies (DELS) has a [special web site for teachers](#). Check it out for new research and related lessons.

Share your favorite web sites

We are asking Associate TAC members to send to us their favorite web sites used in their teaching of science, mathematics, and technology. We will compile a list and share with all. Please send your favorites to Barbara Schulz at bschulz@nas.edu

Workshop on stem cell science being considered for fall

The [Biotechnology Institute](#), in Arlington, VA. is working with the TAC to organize a convening event that would explore the teaching of controversial topics, using stem cells as the event's theme. Teachers, scientists, representatives from industry, and journalists would work together to consider how to best convey the science and ethics around stem cell research and other controversial topics. Current planning is to host a workshop in early November in conjunction with the fall meeting of the TAC in Washington.

Highlights of the July 2007 Teacher Advisory Council meeting

At the Summer TAC meeting in Washington, DC we welcomed 5 new members to the Council and bade farewell to the last of our founding members. The new members are:

- **Juliana Jones**, mathematics teacher at Montera Middle School, Oakland, California
- **Edward Nolan**, high school math teacher and department chair at Albert Einstein High School in Kensington, Maryland
- **Dwight Sieggreen**, science teacher, Hillside Middle School, Northville, Michigan
- **Roberta Tanner**, high school science teacher, Loveland High School, Loveland, Colorado
- **Darren Wells**, science teacher, James P. Timilty Middle School, Roxbury, Massachusetts

We look forward to working with these strong teacher leaders as we continue our work.

The Council held several interesting discussions that may be of interest to our associates. The MIT Open Courseware Design program is now offering course materials for high school science and mathematics classes. These materials have the potential to be very useful to both teachers and students. Check out their web site by [clicking here](#).

Another discussion was held with Elizabeth Ridgway, Director of Educational Outreach at the Library of Congress, who shared ways that science and math teachers could make use of the Library's web site and materials found on their web site. Check out their program by [clicking here](#).

The members of the Council also offered advice about strategies for disseminating a report on *Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults: Research Advances and Promising Interventions* that is currently being prepared by a committee of the NRC's Board on Children, Youth, and Families. For more information about this project, [click here](#).

Speak-Up Survey Shows that students Want more real world problem solving in science and math classes

Resources and Opportunities

- The Technology Student Association is pleased to announce that the *Standards-Based Robotics Competition Curriculum Development Framework* is now published and available by [clicking here](#).
- We share with you a project called [Yahoo! Teachers](#). It's a new service that's going to be launched later this fall which enables teachers to go out onto the web, gather materials to use to supplement their curriculum, add their state standards, so that you can actually incorporate the requirements of the pedagogy into your classrooms, and then create projects to share with your students.
- Results of the 4th annual *Speak Up Survey* reveal attitudes of students, teachers, and parents about educational technology. For the second year in a row, students and teachers who responded to the national survey on educational technology expressed a strong desire for schools to focus more on the integration of technology and real-world problem solving into math and science classes. In addition, an overwhelming 97 percent of students, but just over half of teachers, say they think cell phones should be allowed in school for emergencies and for connecting with parents. The findings, released at a Congressional briefing in Washington, D.C., on March 21, collected ideas and views from more than 270,000 K-12 students and 21,000 teachers from all 50 states. For the first time, the survey also included parents, and some 15,000 parents took part. Participants were asked about their views on such topics as technology, math and science instruction, 21st century skills, global collaboration, communication and self-expression, and schools of the future. To read the entire survey, [click here](#).
- The members of the TAC have long been interested in the No Child Left Behind Act (NCLB) and, more recently, to the process of its reauthorization. Congressman George Miller, Chairman of the House of Representatives Education and Labor Committee (which will oversee the reauthorization of NCLB in the House), gave a speech on July 30, 2007 at the National Press Club about the future of NCLB. It is worthwhile for everyone to read and think about the points made in this speech as they relate to your teaching. To access the entire transcript, [click here](#).

Last Words...From TAC Chair Wanda Bussey

With this article I, and the remaining charter members of the TAC, say farewell to a lovely five years in our lives. We were privileged to be part of the “maiden voyage” of the Teacher Advisory Council, and to see our “ship” settled into the harbor of the National Academies of Sciences. We’ve met and worked with incredible people:

- wonderful, visionary teachers from across the nation, both on the TAC itself, the state TACs, and from other organizations, who regularly and unselfishly share their expertise and insights;
- the impressive staff of the National Research Council who worked with us to do everything from running conferences to setting up study groups, from putting together beautifully designed and educationally sound pieces for print and web to helping us negotiate the Washington scene;

- members of the National Academies of Sciences and its committees beginning right at the top with former President Bruce Albers who shared his vision with us and worked with us tirelessly to attain it.

In previous articles, I've written about many of our accomplishments, so here I'd like to take a broader view. In developing relationships with powerful scientists, politicians, and business people, we have become partners in important events—and the evenness of the partnership has come as a surprise to some on both sides. We teachers do have wonderful ideas that come from the heart of our ongoing practice of education—the *wisdom of practice*—and we are learning how to get them an adequate hearing. We have also come to see the landscape of our lives through other lenses as well, and that has been good for us, even if in some cases it has made the magnitude of our nation's education problems seem even bigger. Only by seeing clearly can we begin to develop adequate programs of change. Only by partnering with other concerned people can we find the power to implement them.

We leave you in the very capable hands of new chairman, Robert Willis, our teacher-leader, Barbara Schulz, and our right-hand man at the NRC, Jay Labov. Good luck as you continue to fight the good fight!