

## **Collaborative Mentoring: Establishing a Mathematics Teaching and Learning Community through Lesson Study** hdl

Collaborative mentoring empowers mentors by redefining the tasks they perform as a collaborative process of continual professional learning. The collaborative mentoring approach combines lesson study (Lewis 2002) and the model of professional learning communities (DuFour 2004) to provide opportunities for new and experienced teachers to engage in shared professional learning. While working collaboratively with the grade-level teams, the mentors described here capitalized on the shared expertise among a group that included novice and experienced teachers, special educators, and teachers of English-language learners. The exchange of mathematical ideas and instructional strategies that took place among these teachers helped create a sustainable, teacher-led professional learning community.

The mentoring process involved three phases: (1) collaborative planning, in which novice, experienced, and special educators and mentors worked together to plan lessons; (2) teaching and observation, in which one teacher taught the focus lesson and others observed using an observation protocol; and (3) debriefing, in which teachers reflected on the lesson design, task, and student engagement and learning and discussed future steps. Some of the guiding questions for the teaching and learning processes were as follows:

- What is the important mathematical understanding that students need to learn?
- What are potential barriers and anticipated student responses?

- What conceptual supports and instructional strategies can best address our students' learning? How will we respond when students have difficulty?
- How will we know when each student has learned the concepts taught in the lesson?

### *Three Discoveries about the Collaborative Mentoring Process* hd2

Perhaps the most important discovery by the collaborative mentoring group was that the extent and value of shared learning was greater than many members anticipated. The reciprocal learning relationship among the novice teachers, experienced teachers, special educators, and teacher-educators was evident in the discourse that took place during the planning phase. As each teacher contributed to the group knowledge, different levels of mentoring and expertise were revealed. For example, novice teachers were mentored by experienced teachers and special educators who had specific knowledge of potential barriers to learning, common misconceptions, and likely student responses acquired through their years of experience working with diverse student populations and through special training. In turn, novice teachers who were recent graduates or were enrolled in master's degree programs shared their knowledge of new strategies, curriculum developments, and the latest technological tools with the experienced teachers and special educators. The mathematics educator and the specialist bridged the instructional practices and strategies with supporting research on mathematics teaching and learning.

The members of the collaborative mentoring group also came to realize the importance of relearning the mathematics they were teaching. In the collaborative planning phase, teachers constructed a mathematics knowledge map that outlined prerequisite knowledge, interrelated

concepts, and concepts that would serve as building blocks for future knowledge. In addition, they identified effective representations or models to teach those mathematical ideas. One teacher reported,

The mapping of prior knowledge needed and future knowledge was illuminating—it just got me thinking more deeply about the concept. The brainstorming helped to see what kids need to know and where they are headed. It makes it easy to see all of the standards that are tied into one concept. I learned about multiple models of representations and strategies.

This relearning process allowed new and experienced teachers to further build their mathematical knowledge in terms of concepts, models, strategies, and representations.

Finally, the collaborative mentoring approach established for participating teachers a professional learning community for the teaching of mathematics in which teachers openly shared instructional practices. As one teacher wrote in her reflection, “[The mentoring approach was an] excellent way to open communication between teachers. Lesson study is a great model for team planning. Many brains are better than one. The exchange between these different teachers was enlightening.”

*Conclusion* hd2

Inclusive classrooms and coteaching approaches have prompted a shift in the model of teaching in the United States from an isolated activity to a collaborative process. In the same way, mentoring and professional development can also benefit from a collaborative approach. Teachers learn to draw on the strengths and specialties of others and continue to enhance their practice by identifying, implementing, and refining instructional resources and strategies through coaching, coteaching, and lesson modeling. In the collaborative model, mentoring is not associated with a separate induction process but is seen as part of continual professional learning. Rethinking the traditional model of mentoring and coaching to consider the collaborative mentoring approach may optimize the professional development and improve the mathematical knowledge of both new and experienced teachers.

—Jennifer Suh and Spencer Jamieson

### **References**

- DuFour, Richard. "Schools as Learning Communities." *Educational Leadership* 61 (2004): 6–11.
- Lewis, Catherine C. *Lesson Study: A Handbook of Teacher-Led Instructional Change*. Hillsdale, N.J.: Research for Better Schools, 2002.