Instructional coaches from outside a school offer fresh eyes and needed expertise to school improvement efforts. But to be effective change agents, they must build a genuine partnership with each teacher they coach.

Donna Gaarder, a former mathematics coach with WestEd's Quality Teaching for English Learners (QTEL) project, has more than 40 years of experience as a high school and college mathematics instructor and district math specialist. For the past three years, she has worked intensively with 28 math teachers in three Austin, Texas, high schools engaged in schoolwide initiatives to improve instruction for English language learner students.

Gaarder seldom needs to present her credentials as a veteran classroom teacher to establish her credibility as a coach. "Most teachers know right away that I’m a teacher too, and that helps enormously," she says. But credibility alone is not sufficient to gain a teacher’s trust. That requires listening, asking questions, and offering a vision and concrete goals for improving pedagogical practices.

Gaarder says, "This is their classroom and their job, and these are their students. They know them much better than I do. So initially I spend time observing teachers as they work and talking with them about that, always noting the positive things they are doing."

She also checks in with the district’s math specialist and the school’s mathematics coach to share initial observations and get feedback.

The QTEL approach defines three stages in a classroom lesson: preparing students for the topic, guiding students to interact with new concepts and skills, and extending their understanding by having them apply what they’ve learned to new and more challenging problems. Because QTEL is aimed at English language learners, each stage involves carefully structured interactive tasks that require students to problem solve with others and to support their ideas with language. In doing so, students are repeatedly practicing the vocabulary and conventions of academic language, which is essential to mastering rigorous academic content.

An important part of Gaarder’s work is to look with the teacher at every aspect of the teacher’s lesson plan. Together, they ensure that each step moves students toward a specific learning goal and is structured so that students take maximum appropriate responsibility for their own learning.

"Most mathematics teachers want to ‘tell the mathematics,’” Gaarder says, “rather than letting students muck around with the math to get a deeper understanding of the concepts.” She notes that
it can be a ‘huge shift’ for a teacher to move away from this more lecture- and textbook-centered approach. ‘The interactive instructional approach QTEL uses,’ Gaarder says, ‘sometimes results in unexpected responses from students, which can come as a surprise to teachers at first. So we start by introducing just one or two tasks and providing opportunities to practice them.

‘Even then, it can take a long time to convince a teacher that this really improves students’ mathematics understanding and achievement,’ she adds.

One teacher with whom Gaarder worked had for several years conducted the same lesson on calculating volume: She simply presented students the formula — volume equals height times width times depth — and gave them assignments to practice calculations, without any conceptual instruction. After they’d worked together for awhile, the teacher confided to Gaarder that she suspected her students didn’t really understand what volume was — and she created a lesson to find out.

To introduce the concept, the teacher had students work in small groups on a structured task to figure out which has more volume: a pound of lead or a pound of feathers? Once students were fully engaged in problem solving, the teacher made the task more challenging: ‘Before you report to the whole class, all group members must agree on the group’s answer.’

Gaarder describes the videotape of that lesson as ‘hilarious’ because of students’ intense and animated discussions, but also rich with evidence about how students understood — or misunderstood — the concept of volume. One student tried to get his group to envision a pound of feathers by waving his hands in the air to frame a space the size of a mattress. A group of students in another class could not conceptualize a pound of lead, so the teacher changed the problem’s wording to ‘a pound of bricks.’

Throughout the problem-solving process and whole-class discussion, the teacher and Gaarder took note of students’ ideas, problem-solving approaches, and use of academic language. Only when they were satisfied that students grasped the essential concept of volume as taking up space did they begin to structure the next lesson on calculating the volume of various real objects.

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Each teacher prefers different amounts and types of coaching, Gaarder says. In some classrooms, a teacher might interact with Gaarder while the actual lesson is in progress; others only talk with her during post-lesson discussions. 'I work with each teacher differently,' Gaarder says. 'Teaching is really hard work, and teachers are human beings, not machines. There is no formula that applies to everyone.'

That same principle applies when a teacher becomes frustrated or discouraged. 'I support teachers by asking questions and listening,' she says. 'Sometimes we'll try to get at the root of the discouragement, and sometimes we just note that it's there. I feel that it's okay to be discouraged once in awhile; that's part of the process and it can be an opportunity to figure out what to do next.'

Gaarder also makes sure teachers take note of their successes, whether a small step forward or a major break-through. 'It's exciting when teachers reach the point where they can structure a lesson so well that the students 'don't need them,' Gaarder says. After observing a particularly successful lesson in one young teacher's classroom, Gaarder immediately walked up to him and said, 'Go home and write it down!' When he looked baffled, she explained half-jokingly, 'Your students didn't need you today. Write down what you did. You structured the lesson so well that the kids knew what they were doing, they were supporting each other, and they were understanding the concepts!'

Gaarder says that seeing their students excited about learning can fuel teachers' enthusiasm for the hard, ongoing work of improving pedagogical practices. 'Children amaze you if you give them the opportunity to use the wealth of knowledge they already have and offer them multiple ways to think and solve problems,' she says. When she shows district educators and administrators videos of successful mathematics lessons in the three Austin high schools, they are often astonished and delighted at the accomplishments of 'our kids,' she says.

During 2010-2011, her fourth and final year in Austin, Gaarder is shifting her focus from individual coaching to helping faculty institute schoolwide practices that make pedagogical improvement an ongoing, collaborative process headed by teachers.