

Clear Creek Independent School District (CCISD)

League City, Texas, is located on the Texas Gulf Coast, 25 miles north of Galveston Island and 20 miles south of Houston. It's an area that boasts civic pride for its quality of life, economic opportunity, and excellent schools.

CCISD formed a partnership with **Math Solutions Professional Development** in 2004. Since the implementation of Math Solutions programs, the district has seen evidence of stronger instruction and improved student achievement.

District Goals and Challenges

Sue Chapman, Clear Creek's Elementary Mathematics Coordinator for the past three years, articulated the district's primary goals for students in mathematics:

- learn mathematical concepts and procedures with understanding;
- develop computational fluency; and
- become flexible and resourceful problem solvers.

Sue's main objective for teachers has been to strengthen standards-based instruction by utilizing research-based strategies that make a difference for children. She also wanted to be able to help teachers in their struggle to find the needed balance between helping children become computationally adept and having them be proficient problem solvers.

Implementation of Math Solutions Professional Development

Transitioning to her new role as District Elementary Math Coordinator in 2003, Sue began to work on her plans for instructional reform. She wanted all teachers to shift their teaching practices to a problem-solving approach aligned with the state standards (Texas Essential Knowledge and Skills, or TEKS), and since she understood the importance of ongoing

professional development to support instruction, she knew Math Solutions could help. The district would utilize state and federal grant monies to support its professional development programs.

In the first year of the initiative, the district began to seek ways to help teachers understand the TEKS objectives they were responsible for helping students master. They were also investigating instructional resources better aligned with TEKS. To complement these district-directed projects, Sue called upon Math Solutions. Two introductory sessions presented in spring 2004 built enthusiasm and grassroots interest among teachers, leading up to the summer five-day course that followed, *About Teaching Mathematics, Part 1*.

Having personally participated in the five-day course when she was a classroom teacher, Sue knew that it would:

- deepen teachers' knowledge of the mathematics curriculum and of how children develop their understanding of mathematics concepts and procedures; and
- provide a weeklong immersion experience in best practices for mathematics teaching and learning.

Sue reflected, "We know teachers tend to teach the way they were taught. Since most teachers haven't experienced math instruction that promotes understanding of mathematics concepts and emphasizes problem solving as the purpose of mathematics, the paradigm shift can be a challenge. The weeklong 'immersion experience' of the five-day course is an important one for our teachers."

Sue also hoped the course week would begin to build the foundation for implementing the district's curriculum and for other, more specific professional

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development initiatives, such as math talk, questioning, research-based practices for fact mastery, assessment of problem solving, differentiation for mathematically promising students, and intervention for students needing extra support.

Sue reported, "It was an incredible week! Each one of the teaching consultants was excellent. When I talked to the Education Specialist during our planning, she said that this course would 'rock my teachers' views on math and math instruction.' It has done just that—my teachers are so excited about giving their students the same types of experiences they had this past week."

Sue commented that some principals and assistant principals participated in the course. Since that time, she has continued to provide school administrators with monthly updates and mini-trainings on the strategies their teachers are implementing.

She continued, "*The About Teaching Mathematics, Part 1* course is now thought of by teachers and administrators as defining 'the CCISD way' of teaching mathematics. It has had a tremendous impact on the teachers who attended."

Over the course of the 2004–2005 school year, Sue equipped every campus with a full assortment of Teaching Arithmetic and Lessons for Algebraic Thinking series books, A Collection of Math Lessons series books, and the Math and Literature series books. (All are available through Math Solutions Publications.)

With the success of the *Part 1* course, CCISD continued to build momentum in summer 2005, with both *About Teaching Mathematics, Part 1* and *Part 2* courses for teachers new and returning to Math Solutions. Also in this second year of partnership, the district began to prepare teacher leaders for roles as math coaches. As they develop teacher leadership

now and in future years, the district expects to draw upon this pool to assign a math coach to every school.

Beginning in the 2005–2006 school year, CCISD launched a district-wide initiative to differentiate instruction across subject areas (Building Responsive Inclusive Classrooms for Kids, or BRICK), which included a series of aggressive mathematics goals for teachers. An element of the plan has been the development of math leadership teams. In the spring of 2006, year three of the Math Solutions partnership, one teacher per campus attended the math leadership series of sessions. Sue and each building principal worked together to select a teacher leader for participation in connected sessions to deepen their understanding of mathematics and mathematics education, and to develop their abilities to support colleagues in learning to implement research-based practices for teaching mathematics.

For summer 2006, teachers participated in *About Teaching Mathematics, Part 1* and *Building a Foundation for Algebra (BFA)*. The *Part 1* course was presented to continue to build district capacity for using best practices in instruction. The *BFA* course was offered to help teachers understand the algebra strand in the TEKS and learn how to help students develop higher-order thinking skills. Sue also hoped teachers would see the connections between the different strands of the mathematics curriculum and how these connections can enhance student learning.

Once again, Sue was extremely pleased with how well the five-day courses were received. In her words, "The week was fabulous . . . it just gets better every year!" To sustain the momentum of the weeklong learning experience, the district purchased a Marilyn Burns Classroom Math Library (available from Scholastic) for each participating teacher. Sue remarked, "Teachers can't wait to use them and are begging me to bring the new *Math and Literature* course to CCISD next summer."

Results

A recent report prepared by Sue Chapman for the school board shows that the percentages of fifth-grade students who either “met standard” or “made commended-level scores” on the Texas Assessment of Knowledge and Skills (TAKS) increased by two and seven percentage points, respectively, between 2005 and 2006. The fifth-grade scores are significant because the Student Success Initiative (a statewide math initiative) requires that grade 5 students meet a passing standard on the Mathematics TAKS in order to advance to grade 6. Also of note were the aggregate “commended-level” scores of third-, fourth-, and fifth-grade students, which showed a five-percentage point increase from 2005 to 2006.

In the report, Sue underscores the “key role” of Math Solutions Professional Development in the difference in achievement. The report lists the Math Solutions summer five-day course for teachers, as well as a leadership series, as “specific actions directly responsible for these scores.” Sue remarks, “I truly feel that we have a partnership with Math Solutions because of their support of our district’s efforts.” Sue also fully expects that the passing rate on the Academic Excellence Indicator System (AEIS) will surpass last year’s scores.

She continues, “I’ve been so proud of the progress our district has made over the past few years (in good part because of Math Solutions’s support). Recently, I calculated the percentage of faculty, by school, that has attended the *Part 1* course. Very interesting! There are some clear relationships between campuses where more than two-thirds of teachers have attended *Part 1* and implementation of standards-based mathematics instruction at these schools. A good number of these campuses have achieved an “Exemplary” rating from the state, in

comparison to schools where fewer teachers have participated in the inservice. I firmly believe that when the majority of a school’s faculty has a baseline understanding about what best practice in math looks like, sounds like, feels like, this becomes the school’s definition of math instruction.”

Future Plans

Because so many teachers have now participated in the *Part 1* course, Sue expects to encourage campus-based support for teachers who are working to implement ideas they learned in the 2006 courses. To build site-based capacity, the teachers attending the Math Solutions teacher leadership professional development series may facilitate this support.

In addition to two 2007 summer five-day courses for teachers, the district plans to continue its series of Math Solutions leadership sessions for the 2006–2007 school year. Math leadership team sessions will build teachers’ understanding of how math learning occurs, examine ways to make math instruction a focus on a campus, and provide experiences that will contribute to learning more mathematics related to the elementary TEKS.

Sue continues to struggle to find ways to provide needed professional development for the busy administrators in her district. Fortunately, they, too, are committed to the vision of standards-based mathematics instruction that has been promoted and are fully supportive of the professional development efforts in progress.

Sue closed a recent planning discussion with this remark: “Math Solutions has made a very powerful difference to our district in just a short period of time. We’re all looking forward to continuing this partnership.”