President's Message

"Try Harder!" Isn't the Answer Cathy L. Seeley



ver the years, we have learned a lot about how students come to know mathematics and about how to teach for lasting learning. We have learned from looking at what other countries do, and we have learned by looking in our own backyard. Students learn challenging mathematics when they have opportunities to engage in problems and when a knowledgeable teacher guides their learning and helps them connect their classroom activities with the mathematics that underlies the activities.

Nevertheless, some administrators, policymakers, and communities have resisted supporting the use of promising teaching practices and materials, claiming that they are too difficult to implement or have no long-term data proving their effectiveness. Instead of looking for new approaches designed to make high-level mathematics accessible to all students, these groups call for a return to traditional methods, emphasizing skill development and calling for lectures by teachers as the primary means to accomplish it. In fact, we have considerable evidence from national and international assessments that the traditional approach has not served most of our students. Although I respect the motivation and commitment of all those involved in discussions on improving mathematics education in the United States, I question whether doing more of the same is the answer for the challenges we face. Where we once sought to educate a third of our students for study beyond high school, we now strive to educate *all* students to high levels. Today many more students will pursue some kind of postsecondary instruction than in the past. Even students who go straight into the workforce from high school now may need a basic understanding of algebra, physics, and electronic tools. Most of all, we know that the kinds of problems that employers, workers, and professionals now handle are often far more complex than those that commonly arose during the agricultural and industrial times that generated our traditional educational system. Simply stated, today's citizens and workers need a far deeper knowledge of mathematics and greater quantitative abilities than at any time in history.

I suggest that it is oversimplified, unrealistic, and unfair to try to raise students' achievement in mathematics simply by putting pressure on teachers to "try harder." To assume that teachers aren't already "trying hard enough" is grossly inaccurate. Across the board, teachers want students to achieve at high levels, and they do whatever they can to help them learn. But to accomplish the ambitious goal of a high-quality mathematics education for every student, educators, policymakers and communities will have to make significant, fundamental changes in the educational system, not just exhort teachers to "try harder."

We have to make hard choices about curricula, choosing to focus at each level on fewer topics and making a commitment to teach those topics for lasting understanding and learning. We need to invest in teachers not only through recruiting, but through mentoring new teachers, nurturing and respecting teachers at every stage of their careers, and offering teachers high-quality professional learning opportunities that help them continue to develop their mathematical knowledge and their understanding of teaching and learning mathematics. We need to allocate adequate resources for students, regardless of their school settings, and especially in high-poverty areas. This includes making sure that every student has access to a wellqualified teacher of mathematics. We need to teach in ways that engage students in doing mathematics and solving challenging problems instead of simply watching a teacher demonstrate mathematics. Finally, we need to make sure that our system offers opportunities for working across grades and levels and that the components of the system are well aligned with challenging and appropriate goals. These are important changes that go far beyond simply "trying harder." To do less is to deny teachers the tools, resources, and support that they need to make a real difference in the mathematics students learn.

When we do institute changes, we need to commit to following through and supporting those changes over time to allow teachers to refine what they do and to allow students to grow. We may implement different strategies to accomplish our goal of a highquality mathematics education for every student. What we can't do is discard good programs just because they are difficult to implement or because we don't see immediate results. The most important thing we can do to serve our students is to listen to one another, learn from one another, and work together in true collaboration and sustained efforts toward the goal of a high-quality mathematics education for every single student.

What are the most important changes that school systems should make to improve students' learning? What are the challenges that you face in making improvements in teaching and learning? Read the transcript of the May President's Chat at <u>www.nctm.org/news/chat.htm</u> to see how your colleagues answered these questions. Ω