

Public Comment to the National Math Advisory Panel

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Good morning. My name is Jim Ryan. I have 10 years' experience in public education as a high school mathematics teacher and administrator. Additionally, I spent another seven years in STEM fields including working a programmer and analyst at Apple Computers. I now work for Key Curriculum Press, a provider of mathematics instructional materials and technology learning tools.

Earlier this year at a California State University summit on mathematics and science education, a national board-certified high school math teacher stated: "Making instructional decisions is what teaching is about, it's about looking at my students and thinking, 'What do they need?'"

This teacher defines the mission of this panel: What do students need? Our country's diverse student population needs a broad array of quality instructional materials. Teachers need a variety of instructional approaches at their disposal for their heterogeneous classes. Students need clearly defined standards of success and flexible means by which success can be achieved.

Currently, over 90% of high school math textbooks used nationally come from four major publishers. As you evaluate these widely used Algebra/Geometry sequences, you are struck by their similarity in both content and pedagogy.

In California, where the textbook selection has been the most restrictive, only three Algebra textbooks were approved for use in the 8th grade in 1999. The results are disheartening:

- On the 2005 NAEP exam, 43% of 8th graders scored "below basic" in math. Fewer than 1 in 4 showed "proficient" understanding.
- In January the *LA Times* reported that 61 percent of Los Angeles 9th graders received a D or an F in algebra in 2004. Only a quarter of those who retook algebra, passed.
- The California State University system reported that nearly 40% of 2004 freshmen needed remedial math before they could take a college-level math course.

The January *LA Times* article that I refer to was titled "A Formula for Failure in L.A. Schools." In that article, Tina Norwood, a student in the LA Unified School District who was taking Algebra 1 for the third time wrote to her teacher on a chapter test, "Still don't get it, not gonna get it, guess I'm seeing you next year!" Tina's sense of futility is no doubt a consequence of her repeated exposure to a curriculum she lacks the ability to

decode. The fact that she returns year after year is a tribute to her resolve. For us, as educators, to ask Tina to open the same textbook next year and turn to page 1 is to abdicate our role as a teacher. Tina needs an algebra class that differs from her past struggles; Tina's teacher needs access to a breadth of quality instructional materials to address the needs of all their students.

Can all students' mathematical needs be addressed by simply giving teachers curricular flexibility? Of course not! Enlightened school systems would not only provide teachers with a variety of curricula; but equally important, the professional development to enable teachers to understand the content and to use the curriculum wisely.

At Key Curriculum Press we have found a particularly effective union between curriculum and technology. We know that to embrace technology in math education requires a new approach to curriculum. Critical concepts more effectively learned with no technological component, must be taught along side far-reaching concepts; only enabled through the use of technology. Just as it would be silly to ask a child to go to the corner store in an airplane, it is equally ridiculous to ask a student to aspire to fly to the moon on a bicycle. We shortchange students by not employing technology in curriculum with this type of careful construction.

You, as leaders in our field, will serve the needs of students well by approaching your task without philosophical prejudice. You serve Tina Norwood by advocating for quality of content and avoiding a myopic view of how mathematics should be presented to students. If we are to improve teaching and learning with our diverse student population, teachers need access to an equally diverse variety of curricula, instructional tools, and training. By unshackling teachers from a curriculum that does not address their students' needs and giving them the breadth of quality tools and training necessary to task, we can close the achievement gap and significantly improve student performance.

Thank you for this opportunity to speak before the National Math Advisory Panel.

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