NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS

Closing the Opportunity Gap in Mathematics Education

A Position of the National Council of Teachers of Mathematics

Question: How can we address differentials in access to high-quality teachers, instructional opportunities, and expectations in mathematics education?

NCTM Position

All students should have the opportunity to receive high-quality mathematics instruction, learn challenging grade-level content, and receive the support necessary to be successful. Much of what has been typically referred to as the "achievement gap" in mathematics is a function of differential instructional opportunities. Differential access to high-quality teachers, instructional opportunities to learn high-quality mathematics, opportunities to learn grade-level mathematics content, and high expectations for mathematics achievement are the main contributors to differential learning outcomes among individuals and groups of students.

Opportunity to learn remains one of the best predictors of student learning (NRC, 2001). Differentials in learning outcomes therefore are not a result of inclusion in any demographic group, but rather are significantly a function of disparities in opportunities that different groups of learners have with respect to access to grade-level (or more advanced) curriculum, teacher expectations for students and beliefs about their potential for success, exposure to effective or culturally relevant instructional strategies, and the instructional supports provided for students (Flores, 2007).

High-quality mathematics education is not just for those who want to study mathematics and science in college—it is required for many postsecondary education programs and careers (Achieve, 2005; ACT, 2006; National Science Board, 2008). Too many students—especially those who are poor, nonnative speakers of English, disabled, or members of racial or ethnic minority groups—are victims of low expectations for achievement in mathematics. For example, traditional tracking practices have consistently disadvantaged groups of students by relegating them to low-level mathematics classes, where they repeat work with computational procedures year after year, fall further and further behind their peers in grade-level courses, and are not exposed to significant mathematical substance or the types of cognitively demanding tasks that lead to higher achievement (Boaler, Wiliam, & Brown, 2000; Schmidt, Cogan, Houang, & McKnight, 2011; Stiff, Johnson, & Akos, 2011; Tate & Rousseau, 2002).

Wide variation in performance among U.S. schools serving similar students indicates that existing learning differentials can be closed and that demographic factors are not destiny when students receive high-quality instruction and the necessary support to learn grade-level content (McKinsey & Company, 2009). The National Council of Teachers of Mathematics outlines a vision for high-quality mathematics instruction in *Principles and Standards for School Mathematics* (NCTM 2000) and *Mathematics Teaching Today: Improving Practice, Improving Student Learning* (NCTM 2007). Research indicates that all students can learn mathematics when they have access to high-quality mathematics instruction and are given sufficient time and support to master a challenging curriculum (Burris, Heubert, & Levin, 2006; Campbell, 1995; Education Trust, 2005; Griffin, Case, & Siegler, 1994; Knapp et al., 1995; Silver & Stein, 1996; Slavin & Lake, 2008; Usiskin, 2007). "Equity does not mean that every student should receive identical instruction; instead, it demands that reasonable and appropriate accommodations be made as needed to promote access and attainment for all students" (NCTM 2000, p. 12).

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