

Excerpts from Principles to Actions & Taking Action: Implementing Effective Mathematics Teaching Practices

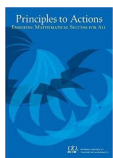
A danger in isolation is that it can lead teachers to develop inconsistencies in their practice that in turn can create inequities in student learning, contributing to existing learning differentials (Ferrini-Mundy et al., 1998). By contrast, research indicates not only more growth in mathematics achievement in students whose teachers regularly collaborate than in students whose teachers work in isolation, but also a reduction in traditional learning gaps among disaggregated groups (Moller et al., 2013).

To build a culture of professionalism, and to promote mathematical success for all students, the norm of teacher isolation must give way to a new professional norm of collaboration. It must become the norm for teachers to believe that they have a professional responsibility to collaborate with their colleagues and open their practice to collective observation, study, and improvement (NCTM, 2007).

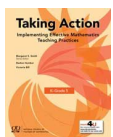
Effective instruction rests in part on careful instructional planning. Teachers' co planning of lessons provides one of the greatest opportunities for making a positive difference on student learning (Hattie, 2012; Morris, Hiebert, and Spitzer, 2009). In some cultures (e.g., East Asian countries such as Japan) mathematics teachers devote significant time to planning lessons, and they collaboratively prepare detailed and lengthy lesson plans (Cheng, 2011). In the United States, by contrast, it is the typical practice of teachers to spend relatively little time developing mathematics lesson plans (Ding & Carlson, 2013). To improve instruction and ensure the mathematical success of all students, this practice of limited and isolated instructional planning must be eliminated and replaced with a practice of allocating time for collaborative planning.

Intentional advance planning is the key to effective teaching. Intentional planning shoulders much of the burden of teaching by replacing on-the-fly decision making during a lesson with careful investigation into the *what* and *how* of instruction *before* the lesson is taught (Stigler & Heibert, 1999, p. 156). According to Fennema and Franke (1992, p. 156): During the planning phase, teachers make decisions that affect instruction dramatically. They decide what to teach, how they are going to teach, how to organize the classroom, what routines to use, and how to adapt instruction for individuals.

Effective mathematics teachers not only collaborate but also focus their collaborative efforts on improving instruction and student learning through the co-planning of lessons. Focusing teachers' work within professional learning communities on detailed lesson planning has been demonstrated to be a highly productive strategy to support more in-depth interactions within collaborative communities and effect change in teachers' practice (Perry & Lewis, 2010; Stein, Russell, & Smith, 2011). Many teachers express concern that they do not have the time to devote to detailed lesson planning for every lesson that they teach. However, the perceived lack of time to devote careful planning to and reflection on *all* lessons cannot be used as an excuse *never* to collaboratively learn, plan, and reflect on the effectiveness of key lessons (Kanold & Larson, 2012).



NCTM. (2014). *Principles to actions: Ensuring mathematical success for all*. Reston, VA: NCTM.



Huinker, D. & Bill, V. (2017) *Taking action: Implementing effective mathematics teaching practices*. Reston, VA: NCTM.