
Implementing Standards-Based Mathematics Instruction: A Casebook for Professional Development, Second Edition

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DESCRIPTION

Implementing Standards-Based Mathematics Instruction: A Casebook for Professional Development, Second Edition, by M.K. Stein, M.S. Smith, M.A. Henningsen, and E.A. Silver, engages educators in studying and improving teaching by focusing on the details of teaching and the interactions with students and content. This essential professional learning book is divided into three sections. Part I describes the concepts, research, and the Mathematical Tasks Framework, a tool for evaluating the cognitive demand of tasks. Cognitive demand involves the kind and level of thinking required of students in order to successfully engage with and complete the task.

The Mathematical Tasks Framework describes how mathematical tasks unfold during classroom instruction. The tasks are shown in four phases:

- Tasks as they appear in instructional materials
- Tasks as set up by teachers
- Tasks as implemented by students
- Student learning

Part II includes actual materials for use in professional learning settings along with narrative cases designed to be analyzed using the Mathematical Tasks Framework. Discussion questions and teaching notes are provided. In Part III, chapters 11 and 12 are new to this edition and focus on ways the book can be used to support the learning of teachers and teacher leaders.

STAGE 2 LEADERSHIP DEVELOPMENT

Implementing Standards-Based Mathematics Instruction: A Casebook for Professional Development, Second Edition, by M.K. Stein, M.S. Smith, M.A. Henningsen, and E.A. Silver, supports stage 2 leadership development of specialists and teacher leaders. Specialists in the role of coaching, work with teachers to improve student achievement by improving instruction. Improving instruction includes the use of cognitively demanding tasks in classrooms to promote opportunities for learning. Principals work with teachers to improve student achievement through their work as instructional leaders in their buildings. Mathematics specialists can support both teachers and principals by providing information on the Mathematical Tasks Framework and also providing opportunities for principals to observe the use of rich tasks in classrooms.

Specialists could use suggestions from Section III, Using the Cases, as they plan task-focused and practice-based professional learning opportunities for their teachers and principal to include:

- Using the Task Analysis Guide to discuss the potential of classroom tasks for promoting students' thinking and reasoning.
- Using the Factors Associated with Maintenance and Decline of High-Level Demands to discuss the factors that unfold in classroom enactment of tasks.
- Using resources from <http://www.tcpres.com> including the Task Sort and the six brief classroom scenario descriptions of enactment of the tasks to discuss the challenges of maintaining cognitive demand of tasks
- Using the Thinking Through a Lesson Protocol to discuss key aspects of lessons that contribute to make teaching with high-level tasks more controllable.