Title: Design Arcs and In-the-Moment Design Decisions
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Summary:

In this presentation, we describe a method for analyzing the relationships between the enacted curriculum, the teacher's-intended curriculum, and the instructional materials. We begin by looking at subsets of instructional sequences in the enacted lesson, identifying the mathematical purpose of each given sequence. We then construct a visual representation--what we call a "lesson map"--that shows how the sequences play out in the classroom and upon what resources the teacher appears to draw in enacting the lesson. In doing so, we look back at the instructional materials, any lesson-planning notes that the teacher has provided, and our interview data. We identify the "steering moves" that the teacher uses to help navigate the sequences toward their purposes.

The steering moves, together with the mathematical purposes, constitute what we call "design arcs." Lessons are comprised of a series of design arcs on our lesson map. We theorize that teachers need to call upon a set of resources, solve a particular pedagogical problem, and work with students in steering toward the mathematical purpose; the decisions made by a teacher in deploying resources and using steering moves are "in-the-moment design decisions" (IMDDs).

We believe that our evolving method of analyzing the enacted lesson is useful for several reasons: it allows us to view the lesson on two different scales, simultaneously (big-picture and close-up); we can gain insights into the mathematical purposes of the teacher and curriculum developers and how these are interpreted in the classroom context; we can see how the teachers steer lessons and use resources in working toward these purposes; and we understand the importance of looking at the enacted curriculum along with the teacher's-intended curriculum and the instructional materials (as they all influence one another). Our future work will involve looking across teachers and across curricula, to identify broad patterns, as well as investigating how individual IMDDs contribute to the overall effectiveness of lessons and/or opportunities to learn.