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**Learning trajectories, lesson planning, affordances, and constraints in the design and enactment of mathematics teaching.**

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Summary: Recent reform efforts in mathematics education have stimulated a focus on learning trajectories. At the same time, a global increase in high-stakes testing has influenced instructional practices. This study investigated how four fourth grade teachers within a school planned and enacted lessons to understand what mediated their planning and teaching decisions. Findings reveal that three of these teachers, who were veteran teachers, used a testing trajectory approach with decisions mediated by preparing students for high-stakes tests. The fourth teacher, a novice, attempted to use a learning trajectory approach to support student understanding. Results reveal that high-stakes testing played a crucial role in teachers' instructional decisions. Based on the findings, we provide a framework for a testing trajectory approach that the veteran teachers used to make instructional decisions. Further research is needed to understand how to support teachers to prepare students for testing using effective teaching practices.

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*Keywords:* teacher effectiveness; experienced teachers; teaching methods; novices; beginning teachers; lesson plans; educational change; pedagogical content knowledge; mathematics activities; mathematical concepts; learning trajectories; teaching practice

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