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Constraints and affordances in bringing about shifts in practice towards developing reasoning in mathematics: a case study.

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Summary: In this chapter, we describe the case study of an in-service teacher, Swati, who participated in a study aimed at supporting teachers to develop resources for teaching mathematics with understanding. We present an analysis of Swati's teaching practice and illustrate how shifts appeared in her practice from procedure based teaching to teaching that supports reasoning. We discuss these shifts in practice in the light of constraints and affordances experienced by the teacher. We claim that the teacher's shift in practice was constrained by tensions experienced with regard to beliefs, tensions experienced in negotiating social norms of mathematics pedagogy and assessment, and limited pedagogical content knowledge. Affordances for exploring reasoning based practices were provided by Swati's reflection on her own practice and beliefs in collaboration with the researcher and peers in workshops, participating in workshop to develop resources for teaching and an alternative image for mathematics teaching and finally, adopting an identity of a teacher focusing on reasoning rather than procedures.

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