Teachers' pedagogical content beliefs and students' achievement growth: The case of elementary mathematics

Summary / Zusammenfassung
In a longitudinal study of 496 students in 27 self-contained German elementary school classrooms, performance in mathematical word problems and arithmetic tasks was measured at the end of Grades 2 and 3. A questionnaire was used to assess the degree to which teachers' pedagogical content beliefs in elementary mathematics reflect a cognitive constructivist orientation, rather than an associationist or direct-transmission view of learning and teaching. Our findings show that a cognitive constructivist orientation was associated with a higher frequency of tasks demanding deeper mathematical understanding and larger achievement gains in mathematical word problems. Moreover, teachers with a direct transmission view were not more successful than teachers with a cognitive constructivist orientation in fostering students' computational proficiency.

Publications / Publikationen


Keywords / Suchbegriffe
teaching, teaching expertise, development of mathematical cognition, teacher thinking, teacher beliefs, constructivism

Project Leadership and Contacts / Projektleitung und Kontakte
Dr. Fritz Staub (Project Leader) fstaub@paed.uzh.ch

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