

## Effects of readiness-based differentiation on student achievement in primary mathematics education

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Differentiation - adapting instruction to students' educational needs based on their achievement level - is often promoted as a way to enhance student achievement. However, evidence to support this claim is scarce. This large-scale study examined the effects of teacher professional development (PD) about differentiation on students' mathematics achievement. Thirty primary schools divided over 3 cohorts participated: all teachers of cohort 1 participated in the PD in year 1, cohort 2 in year 2, and cohort 3 was control. Student achievement was measured five times ( $N = 5658$ ) using a broad (CITO) and a narrow mathematics test (Arithmetic Tempo Test; ATT). With multiple-group growth modeling, the slopes of the cohorts were compared. In year 1, cohort 1 displayed significantly larger growth than the other cohorts on the CITO but not on the ATT. In year 2, the slopes of CITO achievement did not significantly differ between the cohorts, but cohort 1 displayed a larger growth on the ATT. In sum, promising effects of PD about differentiation on student achievement could be demonstrated, but these effects were not consistent across measures and cohorts.