

Institutionen för pedagogik och specialpedagogik

# Does teaching quality matter for student learning outcomes?

A student perspective of a mathematics classroom

av

Lena Asp

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## Abstract

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Author: Lena Asp

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High-quality teaching is assumed to provide students with learning opportunities that may mitigate educational inequities and narrow achievement gaps. This thesis aims to examine aspects of student-perceived teaching quality in relation to student learning outcomes. Measuring the multidimensional construct of teaching quality is a conceptual and methodological challenge. Empirical results are inconsistent, while some studies report significant and positive relations between teaching quality and student learning outcomes, others do not.

The thesis is a secondary analysis of data from the international large-scale assessment Trends in International Mathematics and Science Study (TIMSS) 2019, Grade 4. Teaching quality is conceptualised using student-perceived teaching quality in the mathematics classroom. Aggregating students' perceptions of the teacher's actions in the classroom provides a valid and reliable measure of teaching quality. The hierarchical structure of TIMSS facilitates investigations at the classroom level.

Comprising three empirical studies and an integrative essay, the thesis examines teaching quality from different angles. Study I examines the construct validity of the mixed-worded scale of mathematics confidence in TIMSS. The validated construct serves as a mediator when analysing the relations between teaching quality and mathematics achievement. Study II examines the relationships between student-perceived teaching quality (classroom management and instructional clarity) and mathematics confidence and mathematics achievement at student and classroom levels. Study III widens the scope to include four Nordic countries. The Nordic context is suitable for analysis as these countries share educational values such as the compensatory task of the educational system, the Nordic Model.

Findings revealed evidence of method effect from negatively worded items. Teaching quality aspects were significantly related to mathematics confidence and achievement. The relationship between instructional clarity and mathematics confidence was substantial at the student and classroom levels. Classroom management related significantly to mathematics achievement at the student level in the four Nordic countries and also at the classroom level in Denmark and Sweden. Results showed classroom-level composition effects across the Nordic countries.