Opening the black box of mathematics teachers’ professional growth
A study of teacher learning

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Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av filosofie doktorsexamen framläggs till offentligt förvar i sal KBE301, KBC-huset, fredagen den 1 november, kl. 09:00.
Avhandlingen kommer att förvaras på svenska.

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The aim of the thesis is to better understand the process of teacher learning while participating in a professional development program. The focus is on different aspects of the process of teacher professional growth, as well as on external factors that have an impact on the process of learning. The participants are secondary school teachers that participated in a professional development program in formative assessment. The data have been collected during and after the professional development program took place. Different types of data have been used in this thesis; teacher interviews, classroom observations and questionnaires, and have been collected over a time period of two and a half years. In two of the included papers the studies focus on four mathematics teachers, and the learning process is explored from two different perspectives: how the professional growth can develop, and how their testing of formative assessment activities relates to their understanding of formative assessment. In one of the papers all secondary school teachers are included and a comparison in expectancy of being able to use high quality formative assessment after the professional development program between the mathematics teachers and the other teachers were conducted. In the fourth paper focus is on all mathematics teachers in the study and their motivation are investigated over a time period of two years.

The four papers take different perspectives to explore the professional growth for teachers while participating in a professional development program in formative assessment. The results show the complexity of teacher learning and indicate that large-scale implementations risk being inefficient and not reach the intended goals.

Keywords
Teacher learning, professional growth, professional development program, formative assessment, motivation, mathematics teachers, secondary school teachers.