Abstract
The aim of the thesis is to develop knowledge about what students actually learn in lower secondary school science, regardless of intentions and policies. This is conceptualized as a study of the lived curriculum. During the last decades, new ways of organizing classroom work have evolved in Sweden. Students are to an increasing extent expected to take responsibility for what, when, and how they study. The aim of this thesis is therefore delimited to the study of which lived curriculum is constituted in such an individually organized science classroom practice.

The theoretical foundation is a cultural-historical activity-theoretical perspective on human learning and development. The point of departure is that what we learn must be understood as an aspect of the activities we engage in. The research approach is ethnographic; field studies were conducted in two science classes, grades six and seven (ages 12 to 14 years old), in a Swedish midsized compulsory school during one school-year.

The first result is that two different practices are discerned in the studied science classroom. One classroom practice is a criteria-based practice, where students work individually with local school criteria determining what students must be able to do in order to get a pass or a pass with distinction in the natural science subjects. The other classroom practice is a laboratory practice, where students do laboratory experiments and write laboratory reports. The second result is that students, in both practices, participate in different actions; either production and reproduction of correct answers or development of conceptual relations. These actions correspond in varying degrees to different motives; as a consequence, different scientific formation is made possible in the two different actions. A third result is that classroom practice supports student participation in the action of reproducing correct answers; while participation in the development of conceptual relations is a more risky and uncertain endeavour. However, there is evidence that students’ ways of participating can change, to a more qualified, as conditions for work change.

A conclusion is that work in science classroom practice cannot, as suggested in previous research, be comprehended in terms of cultural border-crossings, between a culture of science and student cultures. Rather, work in science classroom practice must be conceptualized in terms of schooling.