Abstract
The dissertation is aiming at investigating the identity formation of the secondary school science teachers. The core phenomenon is student assessment, and more specific epistemological and ideological assets and dilemmas of student assessment as teacher identity formation. Student assessment has grown in number of purposes and has been extended due to institutionalization as well as multifold educational agendas. However, student assessment seen as the challenges teachers are facing and their reflection about student assessment has had less focus empirically. This dissertation is attempting at capturing some of these challenges by combining two theoretical foci and traditions; science education and pedagogy.

The main research question is: Within an overall sociocultural view on reflective identity formation what are the assessment dilemmas, epistemological and science ideological viewpoints that constitute the science teacher's student assessment practices and corresponding reflections?
Subquestions relate to science teachers’ actions and reflections, their implicit and explicit epistemological and ideological assessment dilemmas, and the varieties of identities within science education. Finally, the methodological considerations concerning the investigation of science teachers’ actions and reflections concerning student assessment are discussed.

Selected teachers labeled Alfa, Gamma, Pi, Sigma and Omega form a typology illustrating ideological and epistemological positions and dilemmas regarding student assessment. Alfa is ideologically and epistemologically non-dualistic. His essentialistic and behaviorist assessment practice that contains summative purposes does not relate to dilemmatic reflection. Gamma is the manager of assessment and curricula guidelines. His reflections are based on mandated documents. Pi’s identity is ideologically and epistemologically dualistic. His concern is to build on individual cognition for learning while his assessment procedures are entirely based on summative testing traditions. He does not acknowledge this dilemma, but emphasize organizational solutions like ability grouping and additional grading scales to capture effort and conceptual learning. Sigma is ideological and epistemological diverse. She recognizes dilemmas of student assessment and sees these as sources for reflection and professional development. Finally, Omega is the progressivist teacher with sociocultural perspectives on learning as well as entirely concerned with formative purposes of assessment.

The dissertation is presenting the complexity of student assessment, and how the teachers are positioning themselves according to different educational contexts. They construct and reconstruct different identities ideologically and epistemologically. These are important dimension in order to develop knowledge and reflection about student assessment within the present multifold objectives for education. Such increased student assessment awareness is alpha and omega for the teaching of science as a knowledge area.