

Progress report 2015

LaUDiM is a project developed in close collaboration between researchers, teachers and leaders at two schools. The main goal of the project is to develop deeper knowledge of the learning environment's significance for developing young learners' mathematical thinking and understanding, as well as to develop their ability to express mathematical concepts and ideas, orally and in writing. This also entails learners' ability to discuss mathematics and to argue for, and justify why something is correct or not. Another goal is to develop knowledge about how teachers can prepare for a learning environment that supports and stimulates learners' development of mathematical proficiency, as well as ascertaining that the defined learning goals are reached. Using a video based design, it is also a goal to develop knowledge about video as a tool in teachers' professional development. One of the participating schools is also a placement school, and we will use this opportunity to inquire into using video as a tool in student teachers' school based learning. Because of this, and because the researchers in the project themselves are active in teacher education, knowledge developed in the project will contribute to a stronger research base for teacher education.

LaUDiM is an intervention project and during the first year of the project (2014-2015) teachers and researchers in collaboration have developed and tried out a cycle of three phases comprising the teaching in the classroom and an analysis of this. The first phase of the cycle starts with teachers and researchers together planning and setting goals for the teaching, which subsequently is carried out by the teachers. It is of great importance to develop tasks that stimulate communication and argumentation, ascertaining that the set competence goals are reached. The second phase takes place in the classroom where teaching and discussions between teachers and pupils, and between pupils, are video recorded. In the third phase the video recordings from the classroom, together with pupils' written work, are discussed and analyzed by researchers and teachers, using set criteria for the goals of the teaching session. These discussions are also video recorded. The cycle has been completed three times in each of the participating schools. A newspaper article published 17.07.2015 documents how the participating teachers have experienced that the professional discussions and the joint analysis have contributed to their professional development. The article is available on the project's home page (<http://laudim.no/>).

The quality of the cycle is of great importance to reach the goals of the project. It is important that the interventions make sure that the intentions of accommodating for a learning environment that stimulates pupils' mathematical thinking and understanding, and they also must give sufficient data material to be able to address the research questions. The cycle and the content of the different phases were therefore given much attention at the meeting with the International Advisory Board in June 2015. This board is composed of researchers with background in mathematics education, teacher education and teachers' professional development. Based on own experience and feedback from the advisory board the cycle was changed for the second year of the project. Before the planning session one session is held where researchers and teachers together carry out a thorough analysis of the mathematical content of the coming teaching sessions, based on previous research. It also seems reasonable to plan for two shorter sessions with a reflection discussion between the two giving possibilities for adjustments.