Curriculum transition in mathematics education

Background for my study

Reform 97 (R97) is the educational reform in Norway that took place in 1997.
L97, which is the curriculum for primary and lower secondary school, describes different working methods in all subjects in general and in mathematics in particular. These are viewed as essential in the implementation of the curriculum. The curriculum stresses that the pupils shall be active in the learning process. They shall be experimenting and exploring and through collaboration with each other acquire new knowledge and understanding. The focus on thematically organised teaching and project work both within a single subject and within an interdisciplinary approach is significant.
L97 is focusing more on what is called conceptual knowledge and less on what is called procedural knowledge than earlier curricula.

In 2000 -2003 a program was carried out doing an evaluation of the reform. One of the projects in this program was *"Change and development with the curriculum reform of -97, (L97), exemplified with mathematics"*. This was done in collaboration between Agder University College and Telemarksforskning. The research project studied different aspects of the curriculum reform: The intended, implemented and attained curriculum and the research project suggests that the curriculum not is implemented as intended. In collaboration with this project, I did an in depth study of students' knowledge in mathematics. I compared results on tasks given to students in grade 4 and in grade 7 in March 01 with results on the same tasks given to students in 1995. The comparative study showed that in grade 7 the students performed generally lower in 2001 than in 1995. This is especially visible within what is called *procedural knowledge*, as computational skills. There is no remarkable decline within what is described as students' *conceptual knowledge* within number. There was also a study comparing results in grade 9 in 1994 with the same items in grade 9 in 2002. Also here students performed better in 1994 than in 2002, and especially within procedural knowledge.

My research questions

With regard to the results from the evaluation of the reform within mathematics, I will go deeper into the implementation of it in the classroom with the following research questions:

- How are teachers in their mathematics teaching practice responding to the L97's recommendations? (Especially regarding working methods.)
- What kinds of interactions between the teacher and the student are observable in the mathematics classroom?
- How are teachers' practices in the classroom related to their beliefs about teaching and learning mathematics and to their goals for students in the subject?