OSKAR LINDWALL

LAB WORK IN SCIENCE EDUCATION

Instruction, inscription, and the practical achievement of understanding
THIS THESIS TAKES as its point of departure an interest in the routine and mundane activities that make up the core of education. With an approach adopted from ethnomethodology and conversation analysis, students’ practical, occasioned, and embodied lab work in secondary and university level mechanics courses is investigated. The investigated activities are afforded by a technology called probeware, and issues related to the use of interactive technology in physics education, as well as more general issues regarding learning and instruction are addressed. How is understanding practically achieved in lab work? What is the relationship between lab instructions and students’ practical actions? How do students produce and display interpretations of graphs as embodied courses of inquiry? How are these interpretations and perceptions ‘disciplined’ by teacher interventions and feedback from the technology?

Rather than addressing learning and understanding in terms of conceptual change, the thesis offers detailed descriptions of the interpretative work performed by students and teachers, as they struggle with the practical contingencies presented by the tasks, the technology, and the subject matter content as made visible through the material arrangements of the lab.