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Differences that make a difference: An ethnomethodological take on science education

In the seminar, I will address the relation between analyses of video data and curricular design. The presentation will set out from a number of observations from a larger research project on the use of educational technologies in science education. Central to this project has been a technology known as probeware, since, for over two decades, probeware has attracted the attention of science educators and researchers, as it is suggested to offer a possible remedy to students conceptual difficulties in mechanics as well as in other areas of science. Researchers have tried to pinpoint the reasons for the success using experimental, or a quasi-experimental, set-up with the goal of finding the mechanisms governing success. The explanations put forth still begs the question of why probeware continues to be the only computer-based learning environment in physics education that has a proven general positive learning effect (Euler & Müller, 1999). In our view, this failure of finding sound explanations points to a blind spot of traditional educational research. Furthermore, we believe that ethnomethodology with its focus on the practical details of interaction and interest in the reflexive relationship between competencies and settings has a take on these issues relevant to the field of education. Our aim with the analysis is to show that some important differences that make a difference is to be found in the practical work of the students and, more particularly, in the ways that the students orient towards the subject matter content. Moreover, we argue that one easily lose sight of these differences when trying to generalise, abstract or conceptualise from the students conduct, since the differences are found in the particular and concrete.

In relation to the empirical example, it would also be interesting to pursue a discussion on three more principled questions that has engaged our research group for some time:

- How does one transform recordings of interaction into analytic accounts?
- What is the relation between studies of interaction and theories of learning?
- How does one make the analyses relevant for curricular design?