

Institutionen för didaktik och pedagogisk profession

Reasoning in a Science Classroom

av

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AKADEMISK AVHANDLING

som med tillstånd av utbildningsvetenskapliga fakulteten vid
Göteborgs universitet för vinnande av doktorsexamen i ämnesdidaktik
med inriktningar framläggs till offentlig granskning

Fredagen den 17 april 2015, kl. 13.00

Pedagogen, Göteborgs universitet, Hus B, Lokal BE 036

Fakultetsopponent: Professor Marianne Ødegaard, Universitetet i Oslo



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Abstract

Title: Reasoning in a Science Classroom
Author: Miranda Rocksén
Language: English with a Swedish summary
ISBN: 978-91-7346-823-7 (tryckt)
ISBN: 978-91-7346-824-4 (pdf)
ISSN: 0436-1121
Keywords: science classroom, teaching and learning, interaction, communication, biological evolution, video-analysis, science education, dialogism

In research on science education, there is a need to further understand the relation between longer and shorter processes of teaching and learning in the classroom. With a theoretical framework based on dialogical theories of communication, this thesis investigates three aspects of the formation of a science classroom practice: the making of conceptual distinctions, classroom organisations and the making of connections between lessons. The empirical material consists of eleven video recorded lessons on biological evolution in grade 9 (15 year old students). The analysis connects different levels of classroom interaction and patterns in the communication over several lessons as well as the details of particular situations. The empirical findings of the thesis are presented in three studies. The first study shows co-existing meanings of the word explanation and three conversational structures that the teacher used for making distinctions between them. The second study shows how small-group activities are used for coordinating the pace of students' participation in these lessons. The third study shows strategies for link-making and a topic trajectory including questions that were raised in relation to survival and extinction of species. The conclusions point to the significance of coordinating the communication so that patterns such as those described can provide learning opportunities for students.