

## Abstract

Löthman, A. (1992). Om matematikundervisning — innehåll, innebörd och tillämpning. En explorativ studie av matematikundervisning inom kommunal vuxenutbildning och på grundskolans högstadium belyst ur elev- och lärarperspektiv. (On mathematical education – content, meaning and application. An explorative study of mathematical education in municipal adult education and in the compulsory school, senior level, elucidated from students' and teachers' perspectives.) Acta Univ. Ups. *Uppsala Studies in Education* 40. 175 pp. Uppsala. ISBN 91-554-2864-9.

The main purpose of this study is to describe and give a structure of conceptions of mathematical education from the actors' perspectives. The significance of these structures is useful for understanding teaching and learning.

Research strategies are derived from classroom research like student and teacher thinking and phenomenography. The sample consists of two groups, students and teachers, a total of twenty-two individuals, at two schools. The groups study the equivalent courses in percentage calculation. The contexts are the Swedish compulsory school, senior level, and municipal, adult education. Raw data were generated by videofilming of lessons, interviews, according to stimulated recall technique and questionnaires. Twenty students and two teachers were repeatedly interviewed, making a total of fifty-one interviews.

Results of the analyses of the actors' conceptions are described in the form of structures under four main headings: *mathematical traditions*, *mathematical strategies*, *mathematical reasonings* and *mathematical applications*. These descriptions are not isolated, they complete and support each other. The strategies reveal some shortcomings of knowledge in students in the compulsory school. The adults, on the other hand, wish to use practical methods from their experiences. The differences of application of mathematical concepts are obvious concerning boys and girls in the participant groups. The boys discuss finances like shares and the girls discuss more immediate commonplaces. The boys *search* for the mathematical problems but the girls *catch* the mathematical problems that appear to them.

The adults maintain that in their everyday life they don't use mathematics very often or they don't think about the using of mathematics. They also claim that they can't handle their private economic transactions for example bank loans, interest and rates. These are mathematically too complicated.

This study focuses on two directions in the actors' conceptions of teaching and learning. One of them is orientated towards *comprehension* and the other towards *procedure*. From the students' perspectives the education is procedure orientated in the compulsory school group and comprehension orientated in the adult group. The teachers' perspectives have the opposite orientation.

Conceptions of education described in this way in terms of structures and orientations could reflect different types of teaching and learning from the actors' perspectives.

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ISBN 91-554-2864-9

ISSN 0347-1314

Printed in Sweden 1992  
Textgruppen i Uppsala AB



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Matematikutbildning  
Göteborgs Universitet  
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