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Reproducing Traditional Discourses of Teaching and Learning: Studies of Mathematics and ICT in Teaching and Teacher education

by
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DOCTORAL DISSERTATION

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ABSTRACT

Title:	Reproducing Traditional Discourses of Teaching and Learning Mathematics: Studies of Mathematics and ICT in Teaching and Teacher Education.
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This thesis is primarily concerned with the effects of education for future teachers in the context of the Swedish teacher training (Government Bill 1999/2000:135 2000). It belongs to a theoretical tradition in which the education system is viewed as a key factor in cultural production and reproduction in educational practices through symbolic control (Apple 2009; Ball 2006; Bernstein 2000, 2003). Symbolic control defines how forms of social interaction affect what is possible to think, say and do in different situations.

The thesis is focused specifically on student mathematics teachers learning to become teachers of mathematics. It has a particular focus on the materials used in this, the meanings given to these materials and the identities produced through the possible embodiment of these meanings. The use of different educational technologies, including in particular ICT, has been of special interest. It aims therefore to understand both how mathematical discourses are produced and reproduced in teacher education and how this colours student teachers' views on mathematics and their professional identity (Bernstein 2000, 2003; Valero 2007).

The main outcomes of my thesis are that through the way that mathematics is taught and learned, mathematics teacher education in practice reproduces traditional ways of teaching and learning. This in that mathematics instruction is built around a ritualized practice based on the ability to solve exercises related to an examined-textbook-based content. ICT use in this context is not transformative. Rather it seems as if teaching and learning with digital technology operate as a relay in the reproduction of traditional forms of education practice. This is contrary to the intentions to renew and revitalise mathematics education and the thesis thus suggests that there is a need to scrutinize the way new technology is formulated in official discourses and appropriated in educational work.

Two other things are also noteworthy in the thesis findings. The first is an increased emphasis on formal subject content through recent policy developments. This re-emphasis reaffirms the value of authoritative subject studies content as the central and most important component in the professional knowledge base. On the basis of the finding from the thesis the logic of the reform may be questioned. Also important is the ICT discourse that is constituted in wider society by selected agents. In this discourse digital technology often in many ways defines (post)modern society and the position it and education have as a driving force toward economic competitiveness. An alternative, more reflexive and critical approach where questions about technology uses in education are emphasized is suggested as necessary.