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ACTIVITY-BASED LEARNING IN ELEMENTARY SCHOOLS: IMPLEMENTING A CORE CURRICULUM PRINCIPLE IN ELEMENTARY SCIENCE EDUCATION

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A comparative cross-country analysis of curriculum renewal will be discussed. The study is called IMPACT which is the acronym for »Implementing Activity-Based Learning in Elementary Science Teaching«. IMPACT was carried out in the Netherlands, Sweden, United States and Germany. In this project we studied lasting processes of curriculum renewal in the realm of activity-based learning in elementary science teaching of 9 and 10 year old children. The methods we used are based on qualitative data analysis and comparison of 15 in-depth case studies. We mapped out what productive schools have in common, for instance sufficient capacity to establish good climates and conditions for putting activity-based curriculum ideas into practice. The contribution will focus on the methodology of IMPACT, the conceptual model called PROMISE (Process Model of Institutionalization and Self-Renewal), selected preliminary findings, and a structural look at basic conditions necessary to facilitate lasting curriculum renewal.

Lasting school development currently gains growing interest among curriculum researchers. Classical studies often investigated short-term changes covering a few months. Explorative studies, longitudinal designs and sound theories are needed to analyse the school curriculum as being practiced over time spans of more than a year or two (see Miles/Ekholm/Vandenberghé 1987).

Our contribution will focus on results from an international study called IMPACT which is the acronym for »Implementing Activity-Based Learning in Elementary Science Teaching«. The findings and case studies will be available in 1992 (Hameyer/Akker/Anderson/Ekholm 1992/93 and Ekholm/Hameyer 1992/93). In IMPACT, we studied *lasting processes of curriculum renewal* with emphasis on conditions under which activity-based learning in elementary science teaching of 9 and 10 year old children became part of routine working patterns in effective schools. The methods we used to study processes of institutionalization which encompass 3 to 7 years are based on *qualitative data analysis and systematized cross-case comparison*.

It is particularly revealing to explore productive schools from inside and to learn from their *organizational biography*. In IMPACT we comparatively map out what productive schools have in common, for instance sustained capacity to establish good working climate, cooperative efforts, and other institutional requirements for putting activity-based curriculum ideas as a common principle of basic education into lasting practice.

We describe practice profiles of 15 schools from four countries (US, the Netherlands, Germany and Sweden). Exemplary lessons are studied which emphasize activity-based learning, and we add empirical information about the degree to which students organize their learning activities on an increasingly autonomous level. Further we investigated how principals encouraged the process of curriculum development and to what extent the environment such as parents, authorities, support personnel, and educational policy-makers stimulate or impede the process.

The IMPACT cases have been selected and analyzed according to a framework which we were able to elaborate. The result is a conceptual model called *PROMISE - Process Model of Institutionalization and Self-Renewal*. This model will be explained further in the contribution and illustrated by results and case study vignettes. We will focus on the curriculum aspect of IMPACT which itself also covers organizational factors of change processes on the school level.

The curriculum aspect of IMPACT shows up that activity-based learning gained strong emphasis in all our schools with the aim to enrich experiential knowledge and meaningful learning. The schools we studied partly reshaped their curriculum practice profile by new patterns of teaching professional staff development, school-based cooperation, and creating stimulative learning environments which allow for students' active experimentation.

Note 1

The research was conducted in Germany, Sweden, The Netherlands, and the United States of America (see *Hameyer/Wiechmann 1991*) The framework emerged from interdisciplinary cooperation of researchers from the following institutions: Kiel Institute for Science Education, Germany, University of Twente, the Netherlands, University of Colorado, USA, and University of Göteborg/Karlstad, Sweden.