RECENT DISSERTATIONS

VUOKKO AHORANTA, 2004:

The quality of learning in a primary school grades 4-6 from the viewpoint of general didactics using concept maps and Vee-heuristics

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University of Joensuu. Publications in Education No 99.

Abstract

The purpose of this study is to research and develop teacher's work and pupil's learning from the viewpoint of general didactics in sustainable development. It was part of the OECD/ENSI-project (Organisation for Economic Co-operation and Development/Environment and School Initiatives) in Finland. The research problem is to find out how concept maps and Vee heuristics help a teacher in following and promoting pupils' learning.

Subjects in this research and development project were two separate groups of pupils, both of which had about 20 pupils. They were followed in 1997-2003. From the teacher's viewpoint, teaching was planned as design experiments and from the pupils' viewpoint as learning projects. There were twenty-three learning projects altogether. At the beginning of a new learning project the pupils constructed their first concept maps to reveal their former knowledge. Likewise at the beginning the pupils completed the left side of their Vee heuristics. These Vee heuristics were used to follow pupils' thinking during the learning project. At the end the pupils constructed their second concept maps and the rest of their Vee heuristics. To enable the precise analyse nine pupils (three high achievers, three average achievers and three low achievers) were selected according to their earlier school achievement. The concept maps of these nine pupils were analysed both qualitatively and quantitatively.

The first main result was that it is possible to follow and promote pupils' learning and thinking by using concept maps and Vee heuristics systematically for many years. The special merit in concept mapping proved to be the fact that all the pupils individually got strong support of learning a lot during the learning projects. Also the teacher got plenty of such knowledge about her pupils' learning and thinking which otherwise would have been impossible to get. By knowing this it was possible to the teacher to guide and promote her pupils' learning and thinking better than earlier.

The second main result was that concept maps reveal only what is in pupils' metacognition and what they are able to construct in their maps. When the teacher designed a school achievement test (short answer test) and transformed pupils' ordinary answers into concept maps it turned out that pupils know much more than they themselves presented.

A well working and revealing version of Vee heuristics for the 4th -6th graders was successfully developed during this research and it seems that both girls and boys benefit equally much in combined use of concept maps and Vee heuristics.

Language: Finnish with abstract in English
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