

MATHEMATICAL QUESTIONS TO ENHANCE LEARNING IN A PRESCHOOL CLASS

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An educational priority of many nations is to enhance mathematical learning in early childhood. By 2011, almost a hundred percent of Swedish children aged 6 years attended preschool class (Skolverket, 2012). It is presumed that teachers will support children at that age to gain mathematical understandings whilst they play. In her research, Björklund (2008) showed that adults were important in setting the parameters for children's opportunities to engage with mathematical ideas. In this study I examine an interaction between a teacher and a class of six-year olds in Sweden around an open-ended problem set in an everyday context. The theory of variation is used to analyse in what way the teacher used questions to develop the children's mathematical understanding.

Keywords: Theory of variation, critical features

The theory of variation is a framework for improving teaching and learning (Lo & Marton, 2012). The ability to learn presupposes an experience of variation. According to variation theory, learning is differentiation; in contrast to, for example, a view where learning is considered enrichment (similarities). For a learner to notice similarities one must discern what is alike and to discern something one must experience differences. Hence, differences can only be experienced through identifying similarities. It can be difficult for students to learn without working with variation (Donovan & Bransford, 2005).

The data analysed for this paper was collected in the first half of 2013 as a part of a wider project. In this session, the teacher was asked to have the children work with problem solving. The problem, given orally, was that in a small preschool class there were ten children who could be split into three different activities; woodwork, baking and painting. The children first worked in pairs, groups or by themselves, with a sharing session at the end. With help from the teacher, each child constructed a story about the distribution of the small preschool class. The paper problematizes two children's interaction with the problem using transcript extract to identify how the teacher use question to discern features.

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