

DEVELOPING EFFECTIVE 'RATIO' TEACHING IN PRIMARY SCHOOL: RESULTS FROM A CASE STUDY

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This poster provides results from a case study concerning the teaching of 'ratio': Jack, a primary school teacher, in collaboration with the author planned and taught an introduction of the topic 'ratio' in his class of 29 pupils, aged 10 to 11.

For effective mathematics teaching, Bell et al. (1985) suggest that first, pupils' errors can be identified through 'diagnostic tests' and then these errors can be resolved through 'conflict discussion'. Accordingly, our 'ratio diagnostic test' (Misailidou and Williams, 2003) was administered to Jack's class to identify his pupils' errors. Then two teaching sessions were planned based on the test results and the 'tools for teaching' suggested by the author i.e. combinations of arguments, 'models' and teaching interventions that have been found to enhance pupils' proportional reasoning (Misailidou and Williams, under review). Each session was build around a central task derived from the diagnostic test; a 'mixing paint' task and a 'sharing bread' task were used. During the sessions the pupils worked individually, in small groups and as a whole class. The aim - set by the teacher - was to persuade each other through reasonable arguments about methods and answers concerning the tasks. Pictorial representations and coloured counters on an overhead projector were used for modelling the tasks. The pupils were advised to use drawings to communicate their thoughts and methods and at the end of each session they were asked to produce reports stating their final decisions. These reports indicate that the pupils can learn to reason proportionally through discussions with their peers and aided by appropriate models.

The poster presents the 'ratio diagnostic test' and an overview of the two teaching sessions, including the tasks and the models that were used. It provides video snapshots and the final products of pupils' work, and tracks the development of their proportional reasoning throughout the sessions contrasted with their performance on the diagnostic test.

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References

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