

Editorial

Issue 2 of this year's NOMAD is here fresh from the printers, or recently uploaded if you subscribe to the electronic version. The summer starts to fade away and there may be more time now to curl up in a comfortable sofa and read some nice articles about mathematics education research. We are happy to present three articles, two in English and one in Swedish, that all include the teacher role in some way.

In this issue

Dagmar Neuman writes about pupils learning of arithmetic in the first article *Att ändra arbetssätt och kultur inom den inledande aritmetikundervisningen*. As the title reveals, this is an article written in Swedish. It is based on Neuman's dissertation from 1987 and some later results from a study on how children use division. Children from all stages of the school system have been studied, from pupils in the early years to upper secondary school students with learning difficulties in mathematics. The theoretical frame is phenomenological. Husserl's question of how knowledge is possible is discussed. The article takes us through time as results from various studies are reported. Neuman ends her article with a discussion about implications for teaching.

The second article in this issue is called *Teacher-assisted open problem solving* and is written by Markus Hähkiöniemi, Henry Leppäaho and John Francisco. Students working with open problems in 9th grade have been videotaped to show their problem-solving strategies and their teacher's work in guiding them. The students used computers with GeoGebra applets during the lesson studied. The authors frame the study with Pólya, Mason and Schoenfeld's problem-solving theories, and also Davis and Maher, and Nunokawa's. The data is part of a larger study on inquiry-based mathematics teaching. The results are presented with examples from student-solutions showing their various paths through phases of problem-solving and attempts to solutions. The teacher's role in directing the students is presented with excerpts from the lesson.

The last article, called *Preparing future teachers for interdisciplinarity – designing and implementing a course for pre-service upper secondary teachers*, is written by Uffe Thomas Jankvist, Jan Alexis Nielsen and Claus Michelsen. The authors discuss the issue of how prepared tomorrow's teachers will be to implement interdisciplinary teaching activities for their students. Modeling as a tool for interdisciplinary learning

is presented as is Michelsen's framework of two phases; horizontal linkage and vertical structuring. This framework is inspired by Treffers and Freudenthal. The authors describe a course aimed at replacing the students' mono-disciplinary teaching approach with an interdisciplinary one. Examples of students' course projects are presented and discussed. The authors conclude that there is room to improve the professional development teachers take part in at schools, to help them work interdisciplinary.

The editors