Editorial

In the spring of 2017 the Editors of Nomad held the sixth workshop for doctoral students at NCM in Gothenburg. This time eight students from Denmark, Faroe Islands, Finland, Norway and Sweden participated. Since the start in 2012 more than 50 students have participated and a handful of the papers discussed at a workshop have already evolved into published papers in Nomad, and there are several more to come.

The day before the workshop the editors met for their annual session. There will be two changes in the editorial group. Two of the long-time editors will leave the group; Frode Rønning, who has been an editor since 2010, and Uffe Thomas Jankvist, who has been an editor since 2012. We wish to thank Frode and Uffe for all their good work in the editorial group and for their commitment to the welfare of the journal. They will be replaced by Janne Fauskanger, University of Stavanger, and Tomas Højgaard, Aarhus University. Welcome to the group of editors! There will also be some changes in the Editorial Board. The current members of the board can be found on the cover page and on the Nomad webpage.

The last issue in each volume of Nomad is normally a thematic issue. The last issue of volume 22 (2017) will cover the theme *University mathematics* (Guest editors: Simon Goodchild and Barbara Jaworski) and the theme for volume 23 (2018) is *Linguistic diversity* (Guest editors: Tamsin Meaney and Toril Rangnes). There are proposals for themes for volume 24 and 25 as well, even though these are not yet finally decided.

At NORMA 14 in Turku the first Nomad *Best paper award* was presented to Magnus Österholm for his paper *To translate between different perspectives in belief research: a comparison between two studies*, published in Nomad 16 (1-2), 2011. The second award will be presented at NORMA 17 in Stockholm to one of the papers that has been published in Nomad in the years 2014, 2015 and 2016. The winner of the *Best paper award* is resolved in a two-step process. First all editors nominate one paper each and then the members of the Editorial Board are asked to rank the three best of the nominated papers. Based on this ranking the winner is resolved.

In the beginning of the next year, Madif-11, the eleventh research seminar of the Swedish Society for Research in Mathematics Education, will be held in Karlstad January 23–24, 2018. The seminar will, as usual, be held directly before Matematikbiennalen (www.matematikbiennalen2018.se). A call for papers to Madif-11 has been launched (formular.ncm.gu.se/madif-11/). The deadline for submitting papers is October 10, 2017.

In this issue

This issue contains five articles. This is a consequence of the number of high-quality manuscripts submitted to NOMAD and to the fine work by our reviewers. To reduce the waiting time for finalised articles to be published, the first three issues in 2017 will contain 5 articles each. The editors are very happy with this development, which shows the vitality of the field of mathematics education research in the Nordic and Baltic region.

The first article by Hanna Viitala provides a tool that has the potential to assist mathematics teachers when they seek to study their students' mathematical thinking. The author sees mathematical thinking as a cognitive function also highly influenced by affect. For this reason the tool goes beyond traditional testing and takes affect as well as meta-cognition into consideration, and may thus – in the words of one of the reviewers – be seen as "an attempt to construct a framework that can bring theory into practice." Through the case of the pupil Daniel, the dynamic nature of the framework is illustrated. More precisely the author focuses on situational problem solving behaviour as studied together with meta-cognition, affect and pupils' view of mathematics.

Jöran Petersson has written the article *First and second language students' achievement in mathematical content areas*. In this article Petersson builds on data about achievement in mathematics from three national tests in grade 9 held in the years 2007–2009. The study is based on 2253 students with Swedish as their first language and 248 students with Swedish as their second language, and Petersson inquires into achievement differences between different mathematical content areas for the two student groups. The content areas are defined in the same way as in the TIMSS framework, i.e. algebra, number, data and chance, and geometry. It has been observed, e.g. in TIMSS, that the achievement profile in different content areas varies between countries and Petersson sets out to find out if such differences also can be observed between students with Swedish as their first language and students with a different linguistic background. Algebra tends to be an area where students from Sweden score below average but Petersson finds that the achievement difference between algebra and number was significantly smaller for second language students than for first language students and that the same holds for algebra versus data and chance.

In his article, Reidar Mosvold addresses the recently increasing interest which has been given to mathematical knowledge specific to the teaching of mathematics. The article is based on a literature review of 190 articles on empirical research studies published from 2006–2013. Mosvold discusses Nordic contributions from after 2013 in relation to the

international research trends and point to areas where Nordic studies might contribute in the future; in particular the strengthening of theoretical perspectives and close connections to practice.

The article by Heidi Strømskag is written in Norwegian and has the title *Et miljø for algebraisk generalisering og dets innvirkning på studenters matematiske aktivitet* (A milieu for algebraic generalisation and its impact on students' mathematical activity). This article is based on the theory of didactical situations in mathematics (TDS), as this has been developed by Guy Brousseau. The starting point for the article is a mathematical task and three student teachers' work with this task. The task is about shape patterns and it is introduced for the student teachers as part of a teaching sequence on algebra. Even if the teaching sequence was not designed using TDS, the teaching situation is seen as a didactical situation, in the sense of TDS. Strømskag inquires into what features of the didactical situation that constrain the student teachers' possibilities to solve the task. Using a constant comparative method she identifies three core categories describing the constraints of the didactical situation. The student teachers' work with the task is seen as an adictactical situation, again in the sense of TDS, which means that the students are working without much interference from the teacher. One of the categories is labelled *Constrained feedback potential in adidactical situations* and it is this category that is elaborated on in the present article.

In her article Helena Johansson focuses on how upper secondary students' ability to reason mathematically affects their success on different kinds of physics tasks. A descriptive statistical approach is adopted, which compares the ratio between conditional and unconditional probability to solve physics tasks requiring different kinds of mathematical reasoning. The study is based on Lithner's framework for characterising students' mathematical reasoning, which distinguishes between creative mathematical founded reasoning (CR) and imitative reasoning (IR). The result shows that if students succeed on tasks requiring creative mathematical reasoning, the probability to solve the other tasks on the same test increases. Furthermore, it shows that this increase is higher than if the students succeed on tasks not requiring creative mathematical reasoning.

The Editors