

Editorial

We are very happy that we can present a new issue of NOMAD to our readers. Recently the supply of articles ready for publication has not been as good as we would have liked it to be. We have gone through the archives to try to revive articles that have been inactive for a long time. This work has led to some authors taking steps to finalise their article whereas others have decided not to work more on revising the article. As a result of this work we believe that we now have a fairly clear picture of which articles will be made ready for publication. It is still so that the inflow of manuscripts is not quite satisfactory to get the issues out on time. We will therefore encourage all of our readers to consider NOMAD as a possible outlet for their research. We know that there is a lot of interesting research activity going on. We hear about new doctoral candidates getting their degree, and if we believe that it is of value to keep a scientific journal in mathematics education for the Nordic and Baltic region, we must all contribute to its existence by submitting some of our work. At the moment we are working on two special issues, for which we have many interesting contributions. We sincerely hope that these two issues will give us the necessary time to establish a sound base of papers submitted on a regular basis.

In this issue

Indrek Kaldo and Markku Hannula have written the article with the title *Structure of university students' view of mathematics in Estonia*. In this article the authors aim to bring together the tradition of research on mathematics related attitudes and beliefs with research in motivation. The authors bring all this together under the concept *view of mathematics*. The assumption is that students' view on mathematics is a result of their experiences as learners of mathematics, and therefore it provides an interesting window through which to study mathematics teaching and learning. The study is based on collecting data using a questionnaire with a four-point Likert scale containing statements about the view of mathematics. The questionnaire was administered to 970 students taking a first year mathematics course at one out of four public and one private university in Estonia. The response rate was 69%. However, almost all the students that were present when the questionnaire was handed out, responded. This means that the results basically say something about those students who usually attend lectures. The collected data are

analysed using the statistics software SPSS. A factor analysis is performed, intending to make inferences from the sample to the whole population. The study confirmed that several different attitudes, beliefs, and motivational orientations can be identified and validly measured as separate components of Estonian university students' view of mathematics.

The next article, *Upper secondary school students' gendered conceptions about affect in mathematics*, by Lovisa Sumpter presents a study on Swedish upper secondary school students' conceptions about gender and affect in mathematics. Both Swedish and international studies indicate that there is a gender difference regarding attitudes towards mathematics. In this study two research questions are posed: *How do upper secondary school students gender stereotype beliefs about safety, expectations and motivation?* and *How does the gender stereotyping differ to traits students ascribe to themselves?* Students from the Swedish Natural Science Programme, where the most advanced mathematics on this level is studied, answered two questionnaires. In the first questionnaire students ranked a number of statements being more likely to be true for girls than for boys. In the second questionnaire students ranked the same statements from their own standpoint, that is how they as individuals perceive themselves as mathematics students. The results from these questionnaires were compared and a discrepancy was found between what students ascribed as gender differences and what students ascribed to themselves. Students were more likely to reveal a "traditional" or stereotypic view of femininities and masculinities in the first questionnaire than what they ascribed to themselves.

In the article *Innovative approaches to teaching mathematics in higher education: a review and critique*, a team of British researchers, Mahmoud Abdulwahed, Barbara Jaworski, and Adam R. Crawford, present a survey of emerging trends of using constructivist approaches in teaching mathematics in science and technology higher education. There is a growing awareness that more research is needed to get to grips with issues concerning students' engagement with mathematics also in higher education. Many universities face challenges in that students do not perform as desired and see a need for reforming their mathematics instruction. In this article the authors have reviewed a substantial amount of research and as a result they have observed a number of trends and they have categorised the trends in six groups. The groups are denoted 1) The use of student-centred learning methods, 2) Contextualisation of mathematics using real-world examples, 3) Bridging the gap in previous mathematical knowledge, 4) Encouraging discourse in classroom and among students, 5) Enhancement of students' motivation, engagement and self-efficacy, and 6) Consideration of differences in learning styles. In addition the

topic "technology as an enabler of Constructivist Mathematics Instruction" has been given a separate part. The article contains an impressive list of references to relevant work in this area.

This issue of NOMAD also contains a column with the title *News from Nordic mathematics education*. This column contains reports from different events, and as usual it gives brief reports on doctoral dissertations that are recently finished. The main author of the news report is Christer Bergsten, chair of NORME, but also other persons have contributed with information about events in which they have been involved.

The editors

