About this issue

In this issue of Nomad we publish three research papers and two reports. In the first report, Barbro Grevholm provides information and background to the Nordic network of researchers interested in mathematics textbooks. The network has its roots in the collaborative activities made possible by the Nordic Graduate School in Mathematics Education. The network has now been granted funding from NordForsk to organize seminars and workshops on mathematics textbook research. All interested in this area are invited to make contact. In the second report, Christer Bergsten, chair of NoRME (Nordic Society for Research in Mathematics Education), makes an up-date regarding events in the field of mathematics education research in the Nordic and Baltic region, which includes the presentation and summarising of no more than 14 recent doctoral theses. This substantial number of theses is an indication of the vitality of the field. Another indication is the number of Swedish theses listed on ncm.gu.se/node/5326 (table 1).

Table 1. *Swedish theses in Mathematics education (listed on* ncm.gu.se/node/5326*)*

Year	Number of theses
2011	7
2010	9
2009	9
2008	5
2007	3
2006	15
2005	2
2004	2
2003	3
2002	1

About the papers

In the first paper, *What characterises the heuristic approaches in mathematics textbooks used in lower secondary schools in Norway?,* Tom Rune Kongelf presents an analysis of six commonly used Norwegian grade nine textbooks. The aim of the analysis is to give a characterisation of how the textbooks treat heuristic approaches in problem solving. Heuristic approach is defined as a general approach that helps an

individual to understand a problem better and/or to make progress towards its solution. The empirical data consists of the examples, where heuristic approaches are provided, in the textbooks. Kongelf used content analysis and coded the examples with nine specified categories of heuristic approaches. The exercises in the textbooks were not included in the analysis as they don't specify any particular approach. For the exercises only answers are given. The coding schedule was designed on the basis on several sources and after a small scale trial. Of the nine approaches, the three most common were found to be "solve part of the problem", "make a visualisation" and "change your point of view". Two other approaches, that one might consider as well-known – "look for a pattern" and "guess and check" – were rarely exemplified in any of the analysed textbooks. Kongelf also observed that the majority of the heuristic approaches were not explicitly presented or discussed in themselves, which from the learner's point of view, must be dissatisfying. As a consequence the quality of the mathematics teaching, where the analysed textbooks are used, seems to rely heavily on the teachers' capability to treat heuristic approaches and to provide guidance of how and when to use them. In light of the ongoing discussion regarding the dangers with mathematics instruction that is too heavily textbook dependent, this study provides important insights.

Teachers' mathematical knowledge for teaching, MKT, and, thus, their capability to compensate for possible short-comings of textbooks brings us to the second paper, *Does the format matter? How the multiple-choice format might complicate the MKT items*, by Janne Fauskanger, Reidar Mosvold, Raymond Bjuland and Arne Jakobsen. There are apparent advantages with multiple-choice items, e.g. regarding the time needed for analysis, but the authors are interested in possible difficulties with using multiple-choice items in measuring teachers' MKT, something that also has been criticised. In this article the authors present an investigation of the possible difficulties as seen from the test-takers point of view – "what indicators are identified from teachers' reflections on how the multiple-choice format might complicate the content (MKT) being measured?". The empirical data comes from seven group interviews with teachers, from different schools and grade levels, and with different levels of teaching experience. Before the semi-structured interviews took place the teachers had worked through a set of MKT test items. Also in this paper, the analysis is based on content analysis, where the first two categories used had their origins in the critique against multiple-choice items. In the process of analysing, the original categories were complemented with sub-categories through a grounded approach. The teachers' reflections on how the multiple-choice format made the MKT being measured

more difficult for them, were found to make up three different kinds of indicators, "the suggested solutions complicate the MKT items", "the MC format forces one way of thinking on the teachers" and "the suggested solutions lack important alternatives". The results suggest that the previous critique of the multiple-choice format for measuring MKT might be extended, but the authors also point to several alternative explanations and that further studies in this field are needed.

In the third article *Comparing perceptions of mathematics: Norwegian and Finnish university students' definitions of mathematics*, the authors Miika Vähämaa and Kennet Härmälä turn our attention to the question of how mathematics is perceived. In their article they describe a comparative study of typical perceptions of mathematics in Finland and Norway. A sample of Finnish and Norwegian university students (social science) were asked to answer the questions, "what is mathematics?", "what is numbers?" and "what use do you think you have for mathematics skills?" in a questionnaire. In the analysis, two categories were used. The categories – labelled "concrete" and "abstract" – are based on Keith Devlin's "four faces of mathematics". The results show that the Norwegian students' answers were quite homogenous and a firm majority hold a concrete perception of mathematics. The answers from Finnish students differed in that there were a substantially larger proportion of responses that were coded as "abstract". An analysis of which of the available factors that could explain the difference in perception, only nationality was found to be statistical significant. These findings lead the authors to suggest that cultural differences, possibly in the teaching of mathematics in school, are influential in contributing to the differences in perception of mathematics between Finnish and Norwegian students.

Thanks to authors and reviewers

Without the fine work of authors and reviewers there would be no articles to publish in a journal like Nomad. During this year we have felt an increasing interest and engagement in the journal and would like to sincerely thank everybody that have been involved in the work during 2011. Below you find a list of all reviewers for the articles published in 2011.

The editors

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