

Editorial

In this issue

The first paper in this issue, *Mathematics teachers' knowledge-sharing on the Internet: pedagogical message in instruction materials*, is written by Yvonne Liljekvist. The reported study looks into the expanding communication between mathematics teachers on the Internet. There are several social network sites where teachers share ideas, classroom activities, math problems etc. More specifically, Liljekvist explores the pedagogical messages communicated via teacher-shared documents containing mathematical tasks, with an aim of identifying *goals, methods and pedagogical justifications*. The data is a sample of 84 documents containing 900 mathematical tasks, collected from a Swedish site. The analysis of these documents is done in relation to content goals and competence goals in the Swedish mathematics syllabus, with an coding apparatus developed by the author. The results show frequent discrepancy between what is explicit and implicit in the pedagogical message, e.g. the (explicit) intended grades and the (implicit) mathematical content and requirements of the tasks. Further, justifications are scarce and often implicit. The study also provides a "snap-shot" insight into what mathematics teachers find relevant and worthwhile to share with colleagues.

In the second paper, *Attitudes towards mathematics as a subject and mathematics learning and instruction in a trans-disciplinary engineering study*, Evangelia Triantafyllou, Morten Misfeldt and Olga Timcenko describe and discuss a study about students' attitudes and preferences in mathematics learning and teaching at an engineering program. They used ethnographic observations, interviews and questionnaires in three courses to gather data. The students turned out not to be confident in mathematics and they considered mathematics to be a difficult subject. Despite this, they thought that mathematics is important, both in their studies and in general. Another result is that the students preferred learning on their own or together with their peers over learning supported by a teacher. The authors suggest reformations of the mathematics education for engineering students based on their study.

The third paper is written by Anneli Dyrvold and has the title *The role of semiotic resources when reading and solving mathematics tasks*. This paper is based in the recognition of the essential role semiotic representations has in mathematics and that proficiency in mathematics entails being able to handle a variety of semiotic representations. Furthermore, a starting point is the importance of being able to read and solve tasks in mathematics. The motivation for the study is to gain knowledge about what difficulties can be related to the reading and solving of tasks with

different semiotic characteristics. The tasks used in the study are taken from Swedish National tests in mathematics for grade 9 and from the PISA study. The data come from about 3500 students and altogether around 470 tasks are present in the sample. Using statistical analysis Dyrvold investigates whether non subject-specific demand on reading ability (DRA) is related to some aspect of the multisemiotics of the tasks. It turns out that there is a relation between four particular semiotic characteristics and how difficult the tasks are to solve but there is no relation between any particular semiotic characteristic and DRA.

In the fourth article – *Lærerarbeidets matematiske undervisningsoppgaver* [Mathematical tasks of teaching mathematics] – Janne Fauskanger and Reidar Mosvold address which tasks of teaching Norwegian mathematics teachers find important in their work. More precisely they study two groups of experienced teachers who discuss what important tasks they find should be included into a list of "mathematical tasks of teaching" in order to fit the Norwegian context. "Mathematical tasks of teaching" here refers to core tasks that teachers must execute to assist students in their learning of mathematics, and is part of the framework of "Mathematical knowledge for teaching" (MKT). The point of departure for the teachers' discussion is the list "task of teaching" developed by Debora Ball and colleagues in relation to mathematical content knowledge for professional development. The emerged results from the study show that the experienced teachers find that the list should be refined, restructured, and that several further aspects should be included in order to fit the Norwegian context. Hence, on a more general level, this article illustrates that although there are many things which we may learn from each other in mathematics education research, we should continuously pay attention to "local aspects" of mathematics teaching and learning, professional development, etc.

This issue also contains a brief report from a workshop for PhD students, held in Stockholm 30–31 May, 2016. The workshop was arranged by Lovisa Sumpter and Paul Andrews at Stockholm University and attracted 12 students from Denmark, Norway and Sweden. The aim of the workshop was to support PhD students intending to prepare a paper for the NORMA conference to be held in May–June 2017. Three of the participants at the workshop, Shipra Sacheva, Marit Hvalsøe Schou, and Andreas Lindenskov Tamborg have written a report called *Reflections on having participated at the Pre-NORMA workshop*. This report is included in this issue. We encourage all our readers to keep up to date about the conference by visiting the web site www.mnd.su.se/om-oss/evenemang/norma-17

The Editors