

From the Editors

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Welcome to the first regular issue of LUMAT: Research and Practice in Math, Science and Technology Education. The journal publishes peer-reviewed research and perspective papers as well as popularized general articles on new and innovative practices of math, science and technology education. The journal is published by Finland's Science Education Centre LUMA in collaboration with National LUMA Network. The aim of all LUMA activities is to promote learning, studying and teaching of natural sciences, mathematics, computer science and technology.

This issue includes three peer-reviewed research articles as well as one perspective article and one general article. We would like to thank all the authors who have submitted their work to this journal, and hope that many others will be inspired to submit by the high quality of articles published in the first regular issue of this new journal.

The first article, written by Mononen and Aunio, discusses differences in children's early mathematical skills. The research done on the formative years of mathematical skills, such as the study presented in this issue, is especially important, as math skills obtained during the critical formative years of kindergarten and elementary school set the ground for the future development of more complex mathematic skills. Based on their results, Mononen and Aunio also offer some sound advice for the development of kindergarten and elementary school math teaching.

The article by Uitto, Kärnä and Hakonen discusses contribution of teaching methods and learning environments to students' performance in biology as well as their attitudes towards biology. Their main results suggest that there is a need to use more experimental work and inquiry-based learning in biology education to improve learning and student attitudes towards biology. To improve biology learning in the coming decades, the group currently devising new biology curriculum for the comprehensive school will hopefully take into account the results of this study.

The last research article, written by Tolppanen and Aksela, investigates the opinions of the gifted youth participants of the Millenium Youth Camp, a math, science and technology camp arranged by Finland's Science Education Centre LUMA and Technology Academy Finland. The study summarizes number of things that organizers of similar non-formal education should take into consideration. One of the main findings is that the participants considered the opportunity to hear and learn about each other and experts, on a personal level, especially important.

Since the release of the first Programme for International Student Assessment (PISA) results in 2002, the reasons for high achievement of Finnish students in reading, mathematics and science has been a hotbed of conversation. The perspective paper by Jari Lavonen contributes to this conversation by presenting some key characteristics of Finnish education policy and its implementation from the point of view of science education.

The last article published in this issue is a general paper discussing a novel opening in non-formal learning organized by the Finland's Science Education Centre LUMA. Vartiainen and Aksela write about Jippo Science Clubs for children from 3 to 6 years of age, based on the inquiry model of learning.

And on the final note, we would like to acknowledge one more group of people. Publishing scientific journal such as LUMAT: Research and Practice in Math, Science and Technology Education would not be possible without one particular group of unsung heroes. As peer reviewers work in an anonymous capacity and without remuneration, we would like to offer our sincere gratitude to these people who selflessly give advice to the authors as well as to the editors.