



UNIVERSITY OF ICELAND

NORSMA 10 Conference 2021

Equal access for all learners to quality mathematics education

Virtual Conference

PROGRAM

November 4-5, 2021

University of Iceland



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Program Overview

All times are Reykjavík time, which is UTC – (Coordinated Universal Time)

For reference:

Denmark = UTC+1

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Germany = UTC+1

Hong Kong = UTC+8

Los Angeles = UTC-7

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Thursday November 4th

8:00 – 8:20	Welcome reception – introduction
8:20 – 09:30	Keynote presentation I: Petra Scherer, PhD, Professor of Mathematics Education at the University of Duisburg-Essen, Germany
9:30 – 9:45	Break
9:45 - 11.15	Papers sessions 1-2
11.15 - 11.45	Break
11:45 - 13.15	Workshop / Symposiums 1-2
13:15 - 13:30	Break
13:30 – 15:00	Paper sessions 3-4
15:00 – 16:00	Virtual Meet and Greet – Informal gathering

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Friday November 5th

8:00 – 9:10	Keynote presentation II: Kerry Lee, PhD, Professor, Head of the department of Early Childhood Education and Director of the Centre for Educational and Developmental Sciences, University of Hong Kong
9:10 – 09:25	Break
9:25 – 10:55	Paper sessions 5-6
10:55 – 11:25	Break
11:25 – 12:55	Symposium 3-4
12:55 – 13:10	Break
13:10 – 14:20	Keynote presentation III: Edda Óskarsdóttir, PhD, assistant professor at the School of Education, University of Iceland
14:20 – 14:50	Closing ceremony – Invitation to NORSMA 11
14:50 – 15:50	Conference goodbye – Informal gathering

Keynote Lecture I – Thursday, November 4th, 8:20 – 9:30

EQUITY AND DIVERSITY IN MATHEMATICS CLASSROOMS – SUBSTANTIAL MATHEMATICS FOR ALL

-Petra Scherer, PhD, Professor of Mathematics Education at the University of Duisburg-Essen, Germany

Abstract:

Designing and offering adequate learning environments for students of all capabilities, is one of the great challenges for teaching and learning mathematics in inclusive settings. ‘Substantial Learning Environments – SLEs’ that allow ‘Natural Differentiation – ND’ have the potential to meet learners’ individual needs. Moreover, working with SLEs should contribute to a deeper mathematical understanding and to the development of general learning strategies. Exemplary learning environments and tasks will be presented and discussed. It will be illustrated in what way common learning situations as well as individual learning phases can be realized. Moreover, conclusions are drawn for teacher’s role and teacher education.

Keynote Lecture II – Friday, November 5th, 8:00 – 9:10

USING WORKING MEMORY INTERVENTION TO IMPROVE MATH PERFORMANCE: ILL-CONCEIVED, POORLY EXECUTED, OR JUST NOT QUITE THERE YET?

-Kerry Lee, PhD, Professor, Head of the Department of Early Childhood Education and Director of the Centre for Educational and Developmental Sciences, University of Hong Kong

Abstract:

Working memory training has been around for several decades now. The initial success of computerized, adaptive training with clinical samples saw its use widened to children with poor math performance. Although some studies documented success, evidence of facilitation is patchy, with many studies showing improvement on closely related working memory or executive functioning tasks but no generalization to math or other academic tasks that place heavy demands on working memory. In this talk, I will briefly review key studies that examined this issue, including some of my efforts in this area. An area of focus is to evaluate whether the lack of stronger or more consistent findings of facilitation is due to (a) the use of working memory training to enhance math performance being ill-conceived in the first place, (b) methodological shortcomings, or (c) an efficacious protocol not having been found.

Keynote Lecture III - Friday, November 5th, 13:10 – 14:20

HOW CAN WE PREPARE OUR TEACHERS TO PROVIDE EQUAL ACCESS FOR ALL LEARNERS TO QUALITY MATHEMATICS EDUCATION?

-Edda Óskarsdóttir, PhD, Assistant Professor at the School of Education,
University of Iceland

Abstract:

Ensuring equal access for all learners to quality mathematics education is a tall order and involves many different factors. In my presentation I will discuss what is needed in teacher education to prepare our teachers to be able to work with diverse groups of students in an inclusive education environment.

Detailed Program Schedule

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Keynote Lecture I

Thursday 8:20 – 9:30

EQUITY AND DIVERSITY IN MATHEMATICS CLASSROOMS – SUBSTANTIAL MATHEMATICS FOR ALL

-Petra Scherer, PhD, Professor of Mathematics Education at the University of Duisburg-Essen, Germany

Paper session 1

Thursday 9:45 - 11.15

Chair: Henrik Husberg

The development of children's early numeracy skills during a kindergarten year

-Heidi Hellstrand, Johan Korhonen and Pirjo Aunio

The relationship between early numeracy skills and physical activity during preschool hours

-Natalia Stalchenko, Anssi Vanhala, Johan Korhonen and Pirjo Aunio

The association between executive functions and early numeracy in 4-year-old children

-Molina Bustamante, Anssi Vanhala and Pirjo Aunio

Paper session 2

Thursday 9:45 - 11.15

Chair: Bjarnheiður Kristinsdóttir

Counting in year one as predictor for achievement in year four in Danish students

-Pernille B. Sunde, Pernille Ladegaard Pedersen and Peter Sunde

The use of formative assessment in special education to enhance mathematical equity, access, and empowerment

-Catarina Andersson

Creative mathematics for the diverse learning group

-Ósk Dagsdóttir

Creating students' access to the classroom discussion with silent video tasks

-Bjarnheiður Kristinsdóttir

Workshop

Thursday 11:45 – 13:15

Chair: Olaug Ellen Lona Svingen

Developmental work, workshop: The team around the child and professional development

-Olaug Ellen Lona Svingen & Astrid Bondø

Symposium 1

Thursday 11:45 – 13:15

Predictors of early mathematics performance – developmental interplay between cognitive, motivational, and affective factors

Chair: Riikka Mononen

Paper 1: Number writing as a longitudinal predictor of arithmetic development and early fraction

understanding
-Silke M. Göbel

Paper 2: *Profiles of arithmetic performance and mathematics motivation: Change and stability from first to second grade*

-Heta Tuominen, Markku Niemivirta, Kristine Tveiten, and Riikka Mononen

Paper 3: *Concurrent and longitudinal relations between math anxiety, symbolic numerical magnitude processing and arithmetic performance in the first and second grade*

-Riikka Mononen, Markku Niemivirta, Johan Korhonen, Marcus Lindskog and Anna Tapola

Symposium 2

Thursday 11:45 – 13:15

Assessment and Treatment of Dyscalculia

Chair: Lena Lindenskov and Pekka Räsänen

Paper 1: *The Danish model of dyscalculia assessment*

-Lena Lindenskov and Bent Lindhardt

Paper 2: *The Danderyd model of dyscalculia assessment*

-Carina Ode and Daniel Lindau

Paper 3: *A digital ecosystem of curriculum-based math education*

-Pekka Räsänen

Panel discussion: *Cross-cultural collaboration within the Nordic context*

-Lena Lindenskov, Pekka Räsänen, Bent Lindhardt, Carina Ode and Daniel Lindau

Paper session 3

Thursday 13:30 – 15:00

Achievement emotions, self-concept, and value in Norwegian school beginners' mathematics studies

-Anna Maria Rawlings, Markku Niemivirta, Johan Korhonen, Marcus Lindskog, Heta Tuominen and Riikka Mononen

Low performers only recognize straightforward addition word problems

-Pernille Pind and Pernille Sunde

Adapting mathematics teaching to diverse learners needs

-Jónína Garðarsdóttir

Paper session 4

Thursday 13:30 – 15:00

What makes it so difficult at upper secondary school? School staff' views of what influences vocational students' poor goal achievement in mathematics

-Karoline Holmgren

Reciprocal effects of mathematics performance, school engagement, and burnout during adolescence

-Anna Widlund, Heta Tuominen and Johan Korhonen

Longitudinal relations between math anxiety and math performance in Finnish adolescent students

-Johan Korhonen, Anna Widlund and Pekka Räsänen

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Friday 8:00 – 9:10

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-Kerry Lee, PhD, Professor, Head of the Department of Early Childhood Education and Director of the Centre for Educational and Developmental

Sciences, University of Hong Kong

Paper session 5

Friday 9:25 – 10:55

Factor structure and grade-level development in the new digital Functional Numeracy Assessment (FUNA) tool for grades 3–9

-Johan Korhonen, Pekka Räsänen, Mikko-Jussi Laakso, Anu Laine, Airi Hakkarainen, Eija Väisänen, Teemu Rajala, Ulrika Ekstam and Pirjo Aunio

Finding pupils' strengths

-Guðbjörg Pálsdóttir

Assessment of mathematics in preschool-class

-Anette Bagger and Helena Vennberg

Paper session 6

Friday 9:25 – 10:55

Developing whole-class teaching practices for preventing mathematical difficulties: Arithmetic strategies in 1st to 3rd grade

-Maria Grove Christensen

Mathematical learning difficulties: How to understand, investigate and identify suitable instruction measures

-Irina Jensø and Jeanette Lindhart Bauer

Pre-school mathematics: Pilot study on a course for mathematics leaders

-Margrét Björnsdóttir and Valdís Ingimarsdóttir

Symposium 3

11:25 – 12:55

Disability and inclusive equity in light of old and new frontiers of mathematics assessment

Chair: Paulo Tan

Paper 1: Participation as both a discursive/positional and narrative/lived issue of shifting frontiers

-Anette Bagger

Paper 2: Universal design for assessment in mathematics: Offering students access to... what?

-Rachel Lambert

Paper 3: The new frontiers of mathematics assessment as sentipensante relationality: Exploring relevant links between disability justice and epistemologies of the global south

-Alexis Padilla

Paper 4: Assessments of functional mathematics educational ecologies for disabled students of color
-**Paolo Tan**

Symposium 4

11:25 – 12:55

Access in mathematics education

Chair: Helena Roos

Paper 1: What is special about special educational needs in mathematics?

-**Helena Roos**

Paper 2: Meaning and operationalization of equity in municipality mathematical action plans

-**Åsa Maria Johansson, Cecilia Lindegren-Österholm and Helena Roos**

Paper 3: Access to displaying knowledge during assessment – a matter of sustainability

-**Anette Bagger**

Paper 4: Relational aspects on teachers' mathematical competencies – a design research study

-**Malin Gardesten**

Keynote Lecture III

Friday 13:10 – 14:20

HOW CAN WE PREPARE OUR TEACHERS TO PROVIDE EQUAL ACCESS FOR ALL LEARNERS TO
QUALITY MATHEMATICS EDUCATION?

-**Edda Óskarsdóttir**, PhD, Assistant Professor at the School of Education,
University of Iceland