



CONTEMPORARY  
MATHEMATICS  
EDUCATION



## CME'21 Virtual event

Critical thinking in mathematics: Perspectives and challenges

University of Rzeszow, Rzeszow, POLAND

28-29 JUNE 2021

### CONFERENCE PROGRAM

Date/Hour	<b>Monday 28.06</b>	<b>Tuesday 29.06</b>
9.00 - 9.15	Opening session	Panel discussion
9.15 - 10.45	Plenary João Pedro da Ponte	
10.45 - 11.00	Break	Break
11.00 - 13.00	Working Seminars	Research Reports
13.00 - 14.00	Lunch break	Lunch break
14.00 - 16.00	Research Reports	Research Reports
		Closing session
16.00 - 16.30	Break	
16.30 - 18.00	Plenary Ivona Grzegorzczuk	

# DETAILED CONFERENCE PROGRAM

**Monday, 28.06. 2021**

9:00 – 9:15	<b>Opening session</b>		
9:15 – 10:45	<b>Plenary lecture:</b> <b>João Pedro da Ponte, Portugal</b> Learning to reason mathematically with meaning (chairperson: Božena Maj-Tatsis)		
10:45 – 11:00	Break		
11:00 – 13:00	Working seminars		
	<b>WS 1</b> kindergarten and primary school <b>(3–9-year-olds)</b> , Leader: <b>Marianna Tzekaki</b> <b>Greece</b>	<b>WS 2</b> primary school <b>(10–13-year-olds)</b> , Leader: <b>Antonín Jančařík, Czech</b> <b>Republic</b>	<b>WS 3</b> secondary and upper- secondary school <b>(14–18-year-olds)</b> , Leaders: <b>Lambrecht Spijkerboer,</b> <b>The Netherlands &amp; Edyta</b> <b>Juskowiak, Poland</b>
13:00 – 14:00	Lunch break		
14:00 – 16:00	Research reports		
	<b>Session A</b> (chairperson: Konstantinos Tatsis)  <b>Pessia Tsamir, Esther S. Levenson, Dina</b> <b>Tirosh, Ruthi Barkai</b> Adults' knowledge of children's numerical competencies  <b>Mirosława Sajka</b> Intuition and reasoning - analysing secondary school students' critical thinking based on paradoxes and sophisms  <b>Sabine Vietz, Tobias Huhmann</b> Diagnostic teaching and educational support in preservice teacher training  <b>Eva Nováková</b> Word problems developing critical thinking of pupils as seen by primary school prospective teachers	<b>Session B</b> (chairperson: Christof Schreiber)  <b>Rachel Filo, Iris Schreiber</b> Knowledge and Self-Efficacy of Mathematics Teachers in special education classes for Learning-Disabled students: the differences between multiplication and division  <b>Edyta Juskowiak</b> Manifestations of critical thinking in the process of solving tasks by seventh graders  <b>Zoltán Kovács, Eszter Kónya</b> Antinomies of problem posing	
16:00 – 16:30	Break		
16:30 – 18:00	<b>Plenary lecture:</b> <b>Ivona Grzegorzcyk, USA</b> Using Modern Mathematics to Change Learning into Magic (chairperson: Ewa Swoboda)		

**Tuesday, 29.06.2021**

9:00 – 10:30	<p align="center"><b>Panel discussion:</b>  <b>Jenni Back, UK</b>  <b>Eszter Kónya, Hungary</b>  <b>Konstantinos Tatsis, Greece</b>  Responses to the pandemic:  Teaching, learning, and researching mathematics in 2020-2021  <b>Moderator: Miroslawa Sajka, Poland</b></p>	
10:30 – 11:00	Break	
11:00 – 13:00	Research reports	
	<p align="center"><b>Session A</b>  (chairperson: Eva Nováková)</p> <p><b>Huey Lei</b>  Tool-task dialectic in mathematics classrooms</p> <p><b><u>Tobias Huhmann, Ellen Komm</u></b>  Encouraging discovery in substantial learning environments: designing play and docu rooms</p> <p><b>Emőke Báró</b>  Teaching strategies for developing critical thinking skills</p> <p><b><u>Barbara Pieronkiewicz, Małgorzata Zambrowska</u></b>  Comparative analysis of textbooks as a way to develop critical thinking in mathematics teachers</p>	<p align="center"><b>Session B</b>  (chairperson: Jenni Back)</p> <p><b>Iris Schreiber</b>  Mathematics in the kindergarten: continuing and completing a repeating pattern</p> <p><b><u>Jens Krummenauer, Sebastian Kuntze</u></b>  The role of critical thinking in data-based argumentation – empirical findings from studies with primary students</p> <p><b><u>Márton Kiss, Eszter Kónya</u></b>  Do students analyze and evaluate the result of their problem solving activity?</p> <p><b><u>Michail Zorzos, Evgenios Avgerinos</u></b>  Probability knowledge effect on critical thinking in young ages</p>
13:00 – 14:00	Lunch break	
14:00 – 15:30	Research reports	
	<p align="center"><b>Session A</b>  (chairperson: Lambrecht Spijkerboer)</p> <p><b>Linda Devi Fitriana</b>  Problem solving: how do students with different personality types show their critical thinking when solving a mathematical problem?</p> <p><b>Anna Pyzara</b>  Critical thinking of students in the process of generalization</p> <p><b>Ivona Grzegorzcyk</b>  Development of abstract thinking through hands-on activities and algebraic models</p>	<p align="center"><b>Session B</b>  (chairperson: Eszter Kónya)</p> <p><b><u>Esperanza López Centella, Jana Slezáková, Darina Jirotková</u></b>  Does this equation describe this situation? Exploring the algebraic thinking of elementary students</p> <p><b>Marta Pytlak</b>  Students' creative thinking during solving algebraic tasks</p>
15:30 – 15:45	Closing session	