

July 17, 13:00–14:00

July 18, 13:30–14:30

Location: G1

For online participants, please go to <https://www.icme14.org/static/en/news/102.html?v=1625134718511>

*It is possible that some groups do not have posters

TSG 1 Mathematics Education at Preschool Level

Xiujie Yang (School of Psychology, China)

[Visual Processing Matters in Chinese Early Mathematics and Reading Acquisition](#)

Dan Kang (Hunan Normal University, China)

[Impact of Preschool Children's Spatial Skill on Their Block Building Construction Level-Mediating Role of Spatial Language](#)

TSG 2 Mathematics Education at Tertiary Level

Maria Sergeevna Artyukhina (National Research Lobachevsky State University, Russian Federation)

[Interactive Teaching of Mathematics for Humanitarian Students](#)

Janine Hechter (University of Pretoria, South Africa)

[The Relationship between Conceptual and Procedural Knowledge](#)

Sarah Dorothy Castle (Michigan State University, USA)

[Constructing Confidence: A Student's Perspective on Groupwork](#)

Claudio Fuentealba (Universidad Austral de Chile, Chile)

[Errors and Difficulties in the Resolution of Tasks on the Basic Calculus Concepts](#)

Seyed Hadi Afzali Borujeni (Bu-Ali Sina University, Iran)

[Meaning of Good Mathematics Teaching from the University Students Point of View](#)

Ciriaco Taroma Ragual (Mariano Marcos State University, The Philippines)

[College Readiness in Mathematics of Senior High School Graduating Students in Schools District of Paoay, Ilocos Norte, Philippines](#)

Ling Li (Shaoxing University, China)

[The Instructional Design of College Mathematics Curriculum](#)

Chao Dong Chen (Sichuan University, China)

[Study on the Influence of Class Size on the Teaching Effect of College Mathematics](#)

TSG 3 Mathematics Education for Gifted Students

Marianne Nolte (Faculty of Education, Germany)

[Questions about Identifying Students with High Mathematical Potential](#)

Philipp Guillaume Girard (WWU Muenster, Germany)

[‘LemaS’ - A Joint Initiative of Germanys Federal Government and Germanys Federal States to Foster High-Achieving and Potentially Gifted Pupils](#)

Patricia Edith Guillen Aparicio (Universidad De San Martn De Porres, Peru)

[Contenidos Tematicos Matemticos Y Las Habilidades Didacticas Para La Enseanza De La Matematica De Los Estudiantes De La Carrera De Educacion Primaria De La Universidad Catolica Sedes Sapientiae, Peru](#)

Mirela Vinerean Bernhoff (Karlstad University, Sweden)

[University Students Self-evaluation: Digital Solutions for Identifying Highly Motivated Students](#)

Chan Xiangrui (Northeast Yucai School, China)

[Discovering and Educating the Gifted Students with Excellent Problems](#)

Hideyo Makishita (Shibaura Institute of Technology, Japan)
[Study of Construction by Quadratic Curve Addition Method](#)

Yuwen Li (Mathematical Research Institute, Dezhou College, China)
[Experimental Study on Intellectual Development in Elementary School Students](#)

Yanchun Liu (Dezhou No.2 Experimental Primary School, China)
[Mathematical Culture and Teaching of Equation](#)

TSG 4 Mathematics Education for Students with Special Needs

Dake Zhang (Rutgers University, USA)
[Effects of Number Line Experiences on Students Negative Number Arithmetic Performance in Students with Varying Ability Levels](#)

Kehinde Emmanuel Adenegan (Adeyemi College of Education, Nigeria)
[Mathematics Education for Students with Special Needs: A Special Focus on Autism and Dysgraphia](#)

Liljana Vasilevska (Gorgi Sugarev Primary school, Republic of Macedonia (FYROM))
[Two Case Studies of Primary Students with Special Needs](#)

Irina Aryal (The Celebration Co-Ed, School, Nepal)
[An Initiation to Improve the Mathematics of the Slow Learning Students](#)

Fernanda Malinosky Coelho da Rosa (Mato Grosso do Sul Federal University, Brazil)
[The Formation of the Teacher Who Teaches Mathematics: Reflections and Challenges of Special Education in Brazil](#)

Laura Delgado-Martin (University of Salamanca, Spain)
[Teach Math through Manipulative Materials to Students with Autism Spectrum Disorder](#)

TSG 5 Teaching and Learning of Number and Arithmetic

Neila Tonin Agranionih (Universidade Federal Do Parana, Brazil)
[Third Grade Elementary School Children's Resolution of Involving Fractions](#)

Miguel Diaz (Universidad Pedagogica Nacional, Mexico)
[Elementary Teacher's Understanding Mathematics in Mexico. Rate of Change](#)

Tionge Weddington Saka (Malawi Institute of Education, Malawi)
[The Teaching and Learning of Number in Early Grade Classes in Malawi](#)

Shuyuan Yu¹, Dan Kim¹, Ho-Chieh Lin¹, Clarissa A. Thompson², John E. Opfer¹ (¹The Ohio State University, United States; ²Kent State University, United States)
[Fraction Frequency in the Wild Helps Fraction Estimation](#)

Maria T. Sanz (Universidad De Valencia, Spain)
[A Teaching Model to Solve Additive Word Problems](#)

Maria Leticia Rodriguez Gonzalez (Cinvestav-Ipn, Cinvestav-Ipn)
[A Von Neumann-based Teaching Model to Observe the Difficulties of Learning Natural Numbers with Students 6-7 Years Old](#)

Katsunori Matsuoka (Naragakuen University, Japan)
[Development of "Theory-dependent Teaching" in Math Education](#)

TSG 6 Teaching and Learning of Algebra at Primary Level

Carlos Nicolas Gomez Marchant (Clemson University, USA)
[Elementary Students Strategies for Extending A Growth Pattern](#)

Yoshiki Nisawa (Bukkyo University, Japan)

Adam Ross Scharfenberger (The Ohio State University, USA)

[Elementary Patterning Problems: The Case of Miles TSG 6 Teaching and Learning of Algebra at Primary Level](#)

TSG 7 Teaching and Learning of Algebra at Secondary Level

Teck Hock Gan (Seameo Recsam, Malaysia)

[Making Sense of Algebraic Expression through Inquiry](#)

Zachary Anthony Stepp (University of Florida, USA)

[The Impact of an Online Learning Platform in Algebra](#)

TSG 9 Teaching and Learning of Geometry at Secondary Level

Luis Carlos Vargas Zambrano (Center for Research and Advanced Studies of NPI, Mexico)

[Conics: An Epistemological and Historical Study about Their Geometrization](#)

Emmanuel Nti-Asante (University of Cape Coast, Ghana)

["Geome-tree": PSMTS Working with Tree Trunks to Understand Circle Theorems](#)

Maiko Sawada (Gunma University, Japan)

[Effect of Drawing Solid Figures Based on Parallel Projection](#)

Preety Tripathi (State University of New York at Oswego, USA)

[Using Deductive Logic Embedded in Straightedge-and-compass Constructions to Promote Preservice Teachers Cognitive Skills](#)

Hak Ping Tam (Taiwan Normal University, Taiwan, China)

[Potential Conceptual Barriers to Junior High School Students in Learning Knot Theory](#)

Mohammad Bahrami (University of Texas, United States)

[Using Origami to Improve Spatial Thinking in a Rural Area of Tehran](#)

Shen Xinyuan (Shaoxing University, China)

[A Comparative Study on High School Mathematics Textbooks between Pep Edition and IBDP Edition: A Case-based Analysis on Vector](#)

Minjie Chen (Junior High School Affiliated Nanjing Normal University, China)

[Promoting Students Deep Learning by Focusing on Problems Design: An Explorative Study](#)

Zingiswa Mybert Jojo (University of South Africa, South Africa)

[Instructional Design in the Teaching of Geometry: Mathematics Teachers Reflections](#)

TSG 10 Teaching and Learning of Measurement

Lanjie Sun (Dongshahu Primary School of SIP, China)

[An Explorative Study of Using Picture Books to Support Students Learning of Measurement in Primary Education](#)

TSG 11 Teaching and Learning of Probability

Beatriz Adriana Rodriguez Gonzalez (Universidad Politecnica de Zacatecas, Mexico)

[Use of The Empirical Rule in the Course of Probability: An Application Proposed by Students](#)

Praveen Kumar Tripathi (Banasthali Vidyapith, Rajasthan, India, India)

[Understanding of Probability](#)

TSG 12 Teaching and Learning of Statistics

Ida Kukliansky (Ruppin Academic Center, Israel)

[Ogive's Interpretation by College Students](#)

Maren Hattebuhr (Karlsruhe Institute of Technology (KIT), Germany)

[Does Climate Change Really Exist? High School Students Discover Statistical Methods by Solving a Modeling Problem](#)

Hiroto Fukuda (Okayama University of Science, Japan)

[Do Students in Grade 10 Generate Ideas of Statistical Hypothesis Testing Spontaneously?](#)

Gregory Eugene Chamblee, Ha Ngoc Nguyen (Georgia Southern University, USA)

[Preservice Teachers' Conceptual Understanding of Mean and Median: Findings from a K-8 Statistics Course](#)

Miguel Andres Diaz Osorio (Universidad Antonio Narino, Colombia)

[Model Proposal to Promote the Construction of the Strong Meaning of Volatility](#)

Enriqueta Deguit Reston (University of San Carlos, The Philippines)

[Improving Statistical Pedagogy among K to 12 Mathematics Teachers in the Philippines](#)

Teresita Evelina Teran (National University of Rosario, Argentina)

[Analysis of the Most Frequent Errors in Practical Works on Tables and Graphs in Biostatistics](#)

Yuqi Li (Beihua University, China)

[Comparing the Statistical Content of Elementary School Mathematics Textbooks from Japan, India and China](#)

Zhemín Zhu (Beihua University, China)

[Comparing the Statistical Content of Elementary School Mathematics Textbooks from Japan, India, the United States, Singapore and China](#)

Naoki Ohta (Fukuyama City University, Japan)

[Aspects of Critical Thinking in Statistical Education-research Survey on Sixth-grade Elementary School](#)

TSG 13 Teaching and Learning of Calculus

Marcela Ferrari (Universidad Autonoma de Guerrero, Mexico)

[A Study of Logarithmic Covariation in Polar Coordinates: The Case of Logarithmic Spiral](#)

Lok Bahadur Basnet (Nepal Open University, Nepal)

[Use of Sine and Cosine Curves in Local Maxima and Minima](#)

Pheary Cheng (Single, Cambodia)

[Increasing the Effectiveness in Studying Mathematics through Educational Game](#)

Roque Aquino Batulan (Higher Colleges of Technology, Abu Dhabi, UAE, The Philippines)

[Integrating TPACK Framework in Teaching and Learning of Calculus at the Tertiary Level](#)

Jocelyn Noelle Rios (University of Arizona, USA)

[The Teaching Methods of Calculus Recitation Leaders](#)

Sakamoto. Kenji Sakamoto/Kenji (Seitoku University, Japan)

[Intuitive Understanding of Infinite Geometric Series Convergence Values for Student Support](#)

Xuefen Gao (Science School Zhejiang Sci-tech University, China)

[The Activity Design and Effect of Flipped Classroom in Teaching Calculus](#)

Tonghao Zhang (Liaoning Normal University, China)

[Research on Function Teaching Design of High School Based on STEAM Education Concept](#)

TSG 14 Teaching and Learning of Programming and Algorithms

Allyson Hallman-Thrasher (Ohio University, USA)

[Engaging Prospective Teachers and Students in Programming Activities](#)

Yevgeny Gayev (National Aviation University, Kyiv, Ukraine, Ukraine)

[MATLAB as a Tool for Experimental Mathematics](#)

TSG 15 Teaching and Learning of Discrete Mathematics

Anton Chukhnov (Saint-Petersburg Electrotechnical University, Russian Federation)

[Alternative Options for Introducing of Discrete Mathematics Ideas into the School Education: Olympiads and Tools](#)

Mickael Da Ronch (University of Grenoble, France)

[Learning of the Scientific Approach at University: The Case of Research Situations from Problems of Discrete Mathematics](#)

TSG 16 Reasoning, Argumentation and Proof in Mathematics Education

Betul Barut (Anadolu University, Turkey)

[The Last Decade of Proportional Reasoning: A Systematic Review](#)

Masanori Obayashi (Hyogo University of Teacher Education, Japan)

[The Transient Stages of Inductive and Deductive Reasoning](#)

Joyati Debnath (Winona State University, USA)

[The Game of Proof That Works in Foundation of Mathematics Course](#)

Jeffrey David Pair (California State University Long Beach, USA)

[Perceptions of the Two-column Proof](#)

Flavia Marcatto (Universidade Federal de Itajuba, Brazil)

[Developing the Mathematic Reasoning Capacity of Future Teachers in Brazilian Teaching Initiation Programs](#)

Heng Limalin (New Generation Pedagogy Center, Cambodia)

[The Effective of Emplimenting High-order Thinking in Teaching Mathematics: Case in Hun Sen KPC Secondary School](#)

TSG 17 Problem Posing and Solving in Mathematics Education

Nicolina Antonia Malara (Fim Depatment University of Modena 6 Reggio Emilia, Italy)

[Innovations about the Teaching of Verbal Problems: The Intertwining of Problem Solving and Problem Posing](#)

Kristina Bulkova (Constantine The Philosopher University in Nitra, Slovakia)

[Identification of Crucial Skills in Solving Complex Problem in Probability within the Mathematical Contest in Teams](#)

Joanna Mamona-Downs (University of Patras, Greece)

[Instances of Problem Posing](#)

Angelina Matinde Bijura (Inspire Secondary School, Tanzania)

[When Problem Posing Challenges Problem Solving: A Case of One Secondary School in Kibaha, Tanzania](#)

Muhui Li (East China Normal University, China)

[Students' Mathematical Problem Posing Ability in China: From History to Reality](#)

Nielce Meneguelo Lobo Da Costa (Universidade Anhanguera De Sao Paulo, Brazil)

[Functions and Interplays between Different Settings in Problem Solving](#)

Yanhui Xu (Wenzhou University, China)

[How Do Teachers Pose Problems by Transformations in Classroom from Proof to Investigation](#)

Sicheng Xie (East China Normal University, China)

[The Effect of the Use of Concept-Mapping on Students Problem-posing Ability: An Exploratory Study](#)

Li Meijuan (Beijing Academy of Educational Sciences, China)

The Effect of Teaching Strategies on Mathematical Problem Solving: A Longitudinal Experimental Study

Yeliz Gunal Aggul (Bogazici University, Turkey)

Eliciting the Metaphors for Problem-solving: A Critical Review of Mathematical Problem-solving Research

Adriano Alves Da Silveira (UEPB, Brazil)

Problem Posing and Combinatory Analysis: Classroom Vignettes

Mingyu Su (Tianjin Normal University, China)

The Change of Student Identity: From Problem Solver to Problem Proposer

TSG 18 Students' Identity, Motivation and Attitudes towards Mathematics and Its Study

Pauline Wong Wing Man Kohlhoff (University of Technology Sydney)

Applying the Theory of Planned Behaviour to 2012 Australian PISA data

Tomoaki Shinobu (Sakata First Junior High School, Japan)

A Case Study of Mathematical Research Presentation in a Public Junior High School; Focus on the Relationship of Assumption of Others and the Quality of Learning

Huiyan Ye (East China Normal University, China)

Case Study: Children's Attitudes Development to Mathematics between Formal and Informal Mathematics Learning

Jingjing Liang (Hunan Normal University, China)

Effect of Mathematics Anxiety on Probabilistic Reasoning among Junior Middle School Students: A Moderated Mediation Model

Meng GUO (The University of Hong Kong, Hong Kong SAR, China)

Classroom Goal Structures, Chinese Students Goal Orientations and Mathematics Achievement

Zhi-Cheng (Yen-Ting) Chen (Department of Mathematics Education, Taiwan, China)

The Action Research of 'Math Table Game' in Teaching and Learning

TSG 19 Mathematical Literacy, Numeracy and Competency in Mathematics Education

Qiuchan Li (Guangwai Meizhou Experimental School, China)

A Survey on Primary School Mathematics Teachers Conceptions of Mathematics Core Literacy in the Context of Chinese Curriculum Reform

TSG 20 Learning and Cognition in Mathematics (Including the Learning Sciences)

Yuka Oyama (Shimane University Japan, Japan)

Research on the State of Interaction in the Formation of the Concept of Quantity Fraction in Elementary Mathematics

TSG 21 Neuroscience and mathematics education / Cognitive Science

Daniela Escobar Magarino (Havana University, China)

Training the Number Sense through "The Number Race" in Preschoolers and School-aged Cuban Children

Li Wang (Peoples Education Press, China)

Relation between Approximate Number System Acuity and Mathematical Achievement: The Influence of Fluency

TSG 22 Mathematical Applications and Modelling in Mathematics Education

Sanskar Dhakal (SOS Hermann Gmeiner School, Madhyapur Thimi, Nepal)

[STEAM Project: Engagement in Higher Secondary Level](#)

Tomas Nakakuwa (Rhodes University, Namibia)

[Using GeoGebra as a Dynamic Mathematics Software Tool for Mathematical Modelling in School Mathematics](#)

Jeannette Galleguillos (Universidad de Valparaiso, Chile)

[Modeling Activities in the Primary School: Healthy Eating and Awareness of the Garbage Produced](#)

Anju Saini (Graphic Era (Deemed to be University), India)

[Mathematical Modelling in Mathematics Education](#)

Gaston Perez (Fa. M. A. F, Argentina)

[Future Mathematics Teachers Engaged in Mathematical Modeling Process: Models, Challenges and Learning](#)

Roque Aquino Batulan (Higher Colleges of Technology, Abu Dhabi Mens Coll, The Philippines)

[Modeling and Computing of World Population](#)

Hao Chen (East China Normal University, China)

[China as a Beginner in Teaching and Learning Mathematical Modelling in Elementary Education](#)

TSG 23 Visualization in the Teaching and Learning of Mathematics

Abongile Happy Ngwabe (Rhodes University, South Africa)

[Exploring How Geogebra Software Can Be Used as a Visual Mediator between Preservice Teachers Mathematical Pedagogical Content Knowledge and Their Teaching Practice](#)

Tadashi Nomachi (Tsuda University, Japan)

[Enjoyable Lessons](#)

Lemmy Kangwa (Chalimbana University, Zambia)

[The Incorporation of GeoGebra as a Visualisation tool to teach Calculus in Teacher Education Institutions: The Zambian Case](#)

Zsuzsanna Dardai (Poly-Universe Ltd, India)

[PUSE \(Poly-universe in School Education\) Methodology - Visual Experience Based Mathematics Education 2019](#)

Toshimasa USUI (Ishibashi High School, Japan)

[Concrete Models for Promoting Students Understanding of High School Mathematics](#)

Shereen Abd El Halim El Bedewy (Johannes Kepler University Linz, Egypt)

[Physical and Digital Transformation Using Augmented Reality and 3D Printing](#)

Maria Elisa Galvao (Universidade de Sao Paulo, Brazil)

[Revisiting Perspective Techniques in a Dynamical Environment For High School Students](#)

Zhiqiang Yuan (Hunan Normal University, China)

[A Study on Improving Preservice Mathematics Teachers Knowledge of Technology-integrated Instructional Representation through GeoGebra Summer Camp](#)

Wanqiu Tang (Hunan Normal University, China)

[Mathematics Learning Visualization: Embodied Cognition Theory or Socio-cultural Theory?](#)

Meiling Zheng (Hunan Normal University, China)

[The Influence of Graphic Representation on Bayesian Reasoning for Junior Middle School Students: The Role of Problem Context and Space Ability](#)

Jonatan Muzangwa (Great Zimbabwe University, Zimbabwe)

[A Mixed Methods Case Study Exploring Visual Thinking in Proving Theorems in Mathematical Analysis. The Case of Mean Value Theorem for Derivatives.](#)

TSG 24 The Role and the Use of Technology in the Teaching and Learning of Mathematics at Primary Level

Juei-Hsin Wang (National Chiayi University, Taiwan, China)

[The Case Study of Math Remedial Teaching Policy and Technology Application in Elementary School](#)

Heather Sherwood (Education Development Center, USA)

[Building Computational Thinking \(CT\) Readiness: A Self-assessment Framework and Tools for Integrating CT in Primary Math Classrooms](#)

Oi-Lam Ng (The Chinese University of Hong Kong, Hong Kong SAR, China)

[The Integration of Programming into Mathematics Education: A Pilot Study on Problem Solving through Digital Making](#)

An-Sheng Jhang (Stoneware Technology, Taiwan, China)

[GOBOT: A Flexible and Tangible Programming Instrument for Early Mathematical Education](#)

Qian Liu (University of Cambridge, China)

[Exploring the Use of Digital Platforms in Supporting Dialogue in Primary Mathematics Classrooms](#)

TSG 25 The Role and the Use of Technology in the Teaching and Learning of Mathematics at Lower Secondary Level

Hoi Kei Melody Wong (Good Hope School, Hong Kong SAR, China)

[Students Mathematics Experience of the Technology Self-directed Learning \(TSDL\) Pedagogy](#)

Satoru Sakanashi (Tokyo Metropolitan Minato Municipal Odaiba Gakuen Koyo Junior High School, Japan)

[Possibilities and Potentiality of Teaching-materials Cooperation of a Function Which Are Taught in an Elementary School and a Junior High School](#)

Simon Plangg (Pdagogische Hochschule Salzburg, Austria)

[A Pedagogical-constructionistic Approach to Mathematical Ideas with Digital Expressive Media](#)

Alejandro Miguel Rosas Mendoza (Instituto Politecnico Nacional, Mexico)

[Technology in Classroom: A Report of 3 Researches](#)

Simon Barlovits (Goethe University Frankfurt, Germany)

[The MathCityMap App: Improving Students Motivation](#)

Carlos Eduardo Leon (La Gran Colombia University, Colombia)

[The Mathema Kids Research Seed: A GeoGebra Youth Club That Tells Stories](#)

Santosh Paudel (Adarsha Secondary School, Layaku Thimi Bhaktapur, Nepal)

[Role of ICT To Enhance Mathematics Teaching](#)

Erin Herz (University of Witwatersrand, South Africa)

[Perspectives on the Use of ICT in the High School Mathematics Classrooms](#)

Siller Hans-Stefan (Faculty of Mathematics and Computer Science, Germany)

[EVA: An Educational Tool to Simulate Evacuations of Buildings](#)

Meiling Zheng (Instituto Federal Do Piaui, Brazil)

[Application of GeoGebra in the Function Study: The Use of ICT in Teaching Mathematics](#)

TSG 26 The Role and the Use of Technology in the Teaching and Learning of Mathematics at Upper Secondary Level

Hua Wu (Liaoning Normal University, China)

[The Study of Mathematic Classroom Teaching Integrated Information Technology and Mathematic Multi-representations](#)

Paul Georges Igodt (KU Leuven, Belgium)

[A Blended Approach to Support Aspiring Engineering Students](#)

Na Han (Liaoning Normal University, China)

[The Study of Mathematical Multi-representations and Teaching Scaffolding in the Smart-classroom Environment](#)

My-Lhassan Riouch (Education Minister-Inspector Training, Morocco)

[Integration of ICT in Modeling and Experimentation of Interdisciplinary Problems](#)

Daysi Julissa Garcia Cuellar (Pontifical Catholic University of Peru (IREM-PUCP), Peru)

[Instrumentation of the Symbolic Artifact Quadratic Function](#)

Xue Huang (Northeast Yucai School, China)

[Application of GeoGebra Based on AR/VR Technology in High School Solid Geometry Teaching](#)

Gerald Cristobal Apostol (Central Luzon State University / Department of Science and Technology / FEU Institute of Technology, Nepal)

[Students Self-regulated Learning Strategies, Perceptions and Mathematics Performance in a Mobile Technology-integrated Mathematics Classroom](#)

Leangsim Im (National Institute of Education, Cambodia)

[The Effective Strategies of Teaching Trigonometry Function Using ICT Applications: GeoGebra and Wolfram](#)

Xiayan Shao (Shanghai Jin Yuan High School, China)

[Practical Research on the Application of Information Technology in Function Reviewing Lectures](#)

Huishi YE (Foshan Foreign Language School, China)

[A Case Study on TPACK Performance of Chinese Middle School Mathematics Teachers](#)

TSG 27 The Role of the History of Mathematics in Mathematics Education

Deepak Basyal (University of Wisconsin-Milwaukee, Nepal)

[Three Books of Mathematical Poetry](#)

Slim Mrabet (Carthage University, Tunisia)

[The Development of Thales Theorem throughout History](#)

Ying An (Beijing Normal University, China)

[Research on HPM Classroom Teaching Action Oriented by Core Literacy](#)

Mary Flagg (University of St. Thomas, USA)

[Using Original Chinese Sources to Teach Gaussian Elimination](#)

TSG 28 Preservice Mathematical Teacher Education at Primary Level

Cristina Cerda Runnalls (California State Polytechnic University, Pomona, USA)

[Examining PSTs' Responses to Students' Area and Volume Misconceptions](#)

Laurent Vivier (Universit de Paris, France)

[The Measurement of Quantities in the Decimal System for Primary Teacher Training](#)

Yutaka OHARA (Kanto-Gakuin University, Japan)

[Using Case Method on Prospective Arithmetic Teachers' View for Social Construction of Mathematics](#)

Heather Howell (Educational Testing Service, USA)

[Unnatural Teaching: Simulated Teaching in Teacher Education](#)

Wellington Lima Cedro (Universidade Federal De Goias, Brazil)

[Action Sharing and Math Teachers Learning in Groups](#)

Younes Farid Aberkane (University of Cergy-Pontoise, France)

[Mathematics and Living Together in Peace in the Classroom, in the Society and across the Borders: Some Examples of Primary Classroom Practices of Preservice Teachers](#)

Azimehsadat Khakbaz (Bu-Ali Sina University, Iran)

[The Role of Teachers Mathematical Knowledge in Primary Teacher Education Curriculum in Iran](#)

Penina Adhiambo Kamina (SUNY Oneonta, USA)

[Investigation of Preservice Teachers Conceptual Understanding via Creation and Development of Mathematical Kits](#)

Cheng-Yao Lin (Southern Illinois University, USA)

[Preservice Teachers Formal and Informal Strategy Use](#)

Beth Anne Lilly Gregory (Graceland University, USA)

[Making Math Meaningful for Pre-service Teachers through Collaboration](#)

Roger Evans Howe (Texas A&M University, USA)

[Helping Pre-service Teachers to Develop a Structural Perspective in Understanding and Solving Arithmetic Word Problems](#)

Anna Wan (The University of Southern Mississippi, USA)

[Integrating Specialized Experiences to Facilitate Preservice Teachers TPACK](#)

Huan Yu (Capital Normal University, China)

[A Deep Perspective of Teachers' Distinguish Errors Based on Embolism](#)

Maria Teresa Bixiro Neto (University of Aveiro, Portugal)

[Augmented Reality in Outdoor Games as a New Teaching Approach Experienced by Future Teachers in Training](#)

TSG 29 Preservice Mathematical Teacher Education at Secondary Level

Jayaluxmi Naidoo (University of KwaZulu-Natal, South Africa)

[Encouraging Student Success: Exploring the Use of Technology Based Pedagogic Strategies within Mathematics Higher Education Milieus.](#)

Tipparat Noparit (Chiang Mai University, Thailand)

[Assessment Processes for Summarizing and Connecting Students Ideas in an Open Approach Classroom](#)

Osvaldo Jesus Rojas Velazquez (Universidad Antonio Narino, Colombia)

[A Didactic Model to Favor the Positive Use of Error in the Initial Teacher Training](#)

Jennifer Oloff-Lewis (California State University, Chico, USA)

[Longitudinal Study of a Co-teaching Residency as a Model of Field Experience for Secondary Preserve Mathematics Teachers](#)

Sheunghyun Yeo (University of Missouri, South Korea)

[Difference between Microteaching and Classroom Teaching](#)

Kristi Renea Martin (Sam Houston State University, USA)

[Pre-service Teachers Problem Solving in Trigonometry](#)

Xiaofeng Lan (Guangxi Normal University, China)

[Common Construction of Pre-service Mathematics Teachers Practical Capacity](#)

Maria Slavickova (Comenius University in Bratislava, Slovakia)
[Development of TPACK of Preservice Secondary Mathematics Teachers](#)

Peijie Jiang (East China Normal University, China)
[Online Live Teaching of Mathematics Methodology Course with Tencent Classroom](#)

Hongyu Su (South China Normal University, China)
[Developing Pre-service Mathematics Teachers' Lesson Evaluation Skills through Online Lesson Study](#)

TSG 30 In-Service Mathematical Teacher Education and Mathematical Teacher Professional Development at Primary Level

Laura Andrea-Marion Abt (University of Education Schwaebisch Gmuend, Germany)
[Online Tutorials in Mathematics Teacher Training](#)

Rumiati Rumiati (PPPPTK Matematika, Indonesia)
[Indonesian In-service Primary Teachers Ability to Solve Mathematical Problems](#)

Leonor Santos
[Mathematical Reasoning and Teacher Education](#)

Youngyoul Oh (Seoul National University of Education, South Korea)
[Rethinking Teachers Professional Development of Mathematics: From the Practical Perspective](#)

Maria Madalena Dullius (Univates, Brazil)
[Continuing Education and Integrated School Context to Qualify Mathematic Teaching in Early Years](#)

TSG 31 In-service Mathematical Teacher Education and Mathematical Teacher Professional Development at Secondary Level (Focus on Scaling Up)

Colleen McLean Eddy (University of North Texas, USA)
[Model for Scaffolding the Scale Up of a Mathematical Functions Professional Development Program Utilizing Lesson Study](#)

Minji Park (Chonnam National University, South Korea)
[A Study on Self-study Practice Activities: Focusing on a Case of First Grade Function Instruction in Middle School](#)

Johann Orn Sigurjonsson (University of Iceland, Iceland)
[Improving Quality of Teaching with Video Review Group Sessions](#)

Danyang Li (East China Normal University, China)
[Partnerships in Teacher Training through the Lens of Teacher Noticing](#)

Diwash Shakya (Glacier International School and College, Nepal)
[Challenges of Managing Mathematics Instruction in Nepal](#)

Lin Miao (Shanghai Hongkou Experimental School, China)
[Research on the Training of Mathematical Modeling Teachers from the Perspective of Emergence Generation Theory](#)

Zhigui Duan (Yancheng Teachers University, China)
[Professional Development of Novice Mathematics Teachers: Present Situation and Guidance a Case Study of 8 Mathematics Teachers](#)

Wen Yang (Chengdu Qizhong Yucai Middle School Sichuan, China)
[Design and Experiment of Research-based Teacher Cultivation Model from the Perspective of Teacher Professional Learning Community](#)

TSG 32 Knowledge in/for Teaching Mathematics at Primary Level

Huey Lei (University of Saint Joseph, Macao SAR, China)

[Developing Analytical Models of Pedagogical Content Knowledge: A Case Study of Mathematics Teachers in Macao](#)

Sheila Oyeila Amuko (Kenyatta University, Kenya)

[Teacher Knowledge on Students Thinking towards Learning Mathematical Concepts of Area in Primary Schools in Kiambu, County, Ruiru Sub-county.](#)

Yury Marcela Cano Murillo (Secretaria De Educacion De Medellin, Colombia)

[Mathematics Curriculum in the Context of Didactic Knowledge: The Case of the Elementary Teacher](#)

Aleksandra Kaplon-Schilis (Durham Academy, USA)

[Unpacking Performance Indicators in the TPACK \(Technological Pedagogical Content Knowledge\) Levels Rubric to Examine Differences in the TPACK Levels for Teaching Mathematics in Primary Schools](#)

TSG 33 Knowledge in/for Teaching Mathematics at Secondary Level

Lay Hoon Goo (Ministry of Education, Singapore, Singapore)

[Solving Different Problem Types on Simultaneous Equations](#)

Mihyun Jeon (Indiana University, USA)

[The Validation of An Assessment Instrument for Measuring Mathematical Knowledge for Teaching \(MKT\)](#)

Jenny Patricia Acevedo-Rincon (Universidad del Norte, Colombia)

[The Specialized Knowledge of a New Generation of Mathematics Teachers Under STEM Training](#)

Ruifang Zhao (Liaoning Normal University, China)

[A Case Study on MPCK of Junior Middle School Mathematics Teachers with Different Characteristics](#)

TSG 34 Affect, Beliefs, and Identity of Mathematics Teachers

Paola del Carmen Quinones (PUCV, Chile)

[STEM, a Proposal from an Emerging Interdisciplinary Look in a Relational Dynamics](#)

Steven Kamaluddin Khan (University of Alberta, Canada)

[Curating to Promote Flourishing Elementary Pre-service Mathematics Teacher Identities](#)

Juan Gabriel Molina Zavaleta (INSTITUTO POLITECNICO NACIONAL, Mexico)

[Beliefs and Conceptions of Math Teachers, and about Math Teachers](#)

Damjan Kobal (University of Ljubljana, FMF, Slovenia)

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