Classroom Teaching Research for All Students (CTRAS)

The 2023 CTRAS Conference
Addressing Challenges and Possible Solutions in Mathematics Classroom Teaching and Research During the Pandemic and AI Era

June 14, 2023

Zoom Meeting Link:
https://csulb.zoom.us/meeting/register/tZclduihqzwjG9Kbc3e1dodnqKzP4_XPkdxf
Meeting ID: 838 1195 7916

Pacific Standard Time (PST)

Time: 6:00-7:00 am   Whole Group Session, Moderator: Hayley Cody
Keynote Talk: **Teaching in the Era of Disruption: Leveraging Technology for Student Success**
Randy Kollset, Coordinator of Educational Technology, Orange Unified School District, United States
Keynote Talk: **From the Physical to the Digital: The Case for Virtual Manipulatives in K12 Classrooms**
Patricia Dickenson, Sanford College of Education, National University, United States

7:00-7:15 am   General Business Meeting
Brief History of CTRAS
Shuhua An, California State University, Long Beach, United States
Discussion and Voting on M-CTRAS Bylaws
Edel Reilly, Indiana University of Pennsylvania, United States

7:20-9:30 am   Topic Session 1: **Mathematics Classroom Teaching and Learning**

Session Chair: Thomas E. Ricks & Zhiling Wang

1. **Re-Examining Our Mathematics Education Mantra Mathematics for All**
   Thomas E. Ricks, *Lousiana State University, United States*
2. **The Development of 6th Graders' Mathematical Communicative Reasoning Ability in Medium Gradient Cities in China in AI Era: Status and Bottleneck**
   Zhiling Wang , *Hangzhou Normal University, China*
3. **Cultivating Mathematics: Exploring integrating mathematics in school gardens**
   Julian Marcado, *University of British Columbia, Canada*
4. **An Empirical Research on the Mathematical Cultural Connotation of Mathematical Writing**
   Qingchun YU, *East China Normal University, China*
5. **Development and Validation of the LIFT Approach in Teaching Geometry**

Lilicate Andrecio, Merjory S. Claud, Hannah Joy G. Fabello, Jovito P. Nazareno, *Romblon State University, Philippines*

6. **A Series of Geometric Shapes for Mathematics Teaching and Leisure Activities**
   Xiao-Gang Zhao, *Beijing Academy of Educational Sciences, China*
7. **Luksong Mathinik: Effect on Kindergarten's Achievement in Adding and Subtracting Numbers**
   Christine Flores & Jaynes Flores, *Tungonan Elementary School SDO Romblon, Philippines*
8. **Project-Based Learning in Junior High School Mathematics Based on Deep Learning**
   Xinyi Wei, Wu Hua, *Liaoning Normal University, China*

7:20-9:30 am   Topic Session 2: **Assessment and Equity in Mathematics Education**

Session Chair: Andrea Honal & Timothy Sibbald

1. **Education Policy Issues Beyond the Results of the NAEP**
   Zhonghe Wu, *National University, United States*
2. **The Broad Scope of Issues in Math Education**
   Timothy Sibbald, *Schulich School of Education, Nipissing University, Canada*
3. **Three Decades of Research on Teachers' Professional Quality in China: Hot Spots, Weak Points and Future Directions-Based on Knowledge Mapping Analysis By CiteSpace**
   Yunfei Ji, Zhiling Wang, Lin Ma, & Shuang Wu, *Hangzhou Normal University, China*
4. **Specialized Educational Programs to Enhance MINT/Math Students' Well-Being and Soft Skills in Germany**
   Andrea Honal, *DHBW Manheim, Germany*
5. **Exploring a Quasi-flipped Precalculus Course using ALEKS: A Case Study**
   Patrick John Fernandez, Angela Fatima Guzon, Jude C. Buot, Ateneo de Manila University, *Philippines*
6. **How Creativity-Directed Conjecturing Teaching Enhancing Equity**
   Kun Chuan Lin, Pi-Jen Lin, *National Tsing-Hua University, Taiwan*
7. **Investigating the Relationship between Mathematics Teacher's Teaching Expertise and Overlap between Initial Education and Teaching the Modal Grade**
   Jiayin Ye, University of Michigan, Ann Arbor, *United States*
8. **School From Home: Challenges and Possibilities**
   Rasha Abadir, *Rutgers University;* Suzanna Schmeelk, *Saint John University*, *United States*

7:20-9:30 am   Topic Session 3: **Teacher Education and Professional Development**

Session Chair: Margarida Rodrigues & Benedetto Di Paola

1. **Teaching/Learning Mathematics in Pre and Post Covid-19 Times: Insights from a Study with Italian Teachers and Families**
   Benedetto Di Paola, Erica Falcone, *University of Palermo, Italy*
2. **Investigating Pre-service Teachers' Perceptions on Cooperative Learning Through a Semi-structured Questionnaire**
   Jia Pang & Suanrong Chen, *Yangzhou University, China*
3. **Practices Teaching of Mathematics Prospective Teacher in Online Learning Environments**
   Margarida Maria Amaro Teixeira Rodrigues & Neusa Cristina Vicente Branco, *Instituto Politécnico de Lisboa, Portugal*
4. **Exploring Pre-Service Teachers' STEM Knowledge and TPACK Competencies Through a Mathematics Education Course**
   Ipek Saralar-Aras, Didem Akyüz, *Middle East Technical University, Turkey*
5. **Analysis of GT & Math Integration: Challenges and Solutions of Interdisciplinary Teaching in Fieldwork by Pre-Service Teachers in K-8 Diverse Classrooms**
   Shuhua An, Claudine Maloles, & Joshua Ortega, *California State University, Long Beach, United States*
6. **Problem Posing in Mathematical Science: A Real Evidence**
   Guoqiang Dang, *Beijing Normal University, China   Teaching*
7. **Barriers and Challenges Faced by Mathematics Teachers During ICT Integration in India**
   Balpreet Kaur, *University of British Columbia, Canada*
8. **PCTO Project within an Inclusive Mathematics Background**
   Carola Manolino, *University of Valle D'Acosta, Italy*

7:20-9:30 am   Topic Session 4: **Technology and AI in Mathematics Education**

Session Chair: Renata Carvalho & Giuseppe Bianco

1. **Exploring mathematical concepts in digital environments: an experience of a professional development course for elementary school teachers**
   Renata Carvalho, *School of Education, Polytechnic University of Lisbon, Portugal*
2. **Teaching study on developing higher-order thinking in mathematics based on interdisciplinary teaching**
   Wu Liu, *Liaoning Normal University*, *China*
3. **Using Mobile Devices as Translator Tools During Mathematics Classroom Practice**
   Giuseppe Bianco, *University of Palermo, Italy;* Giovanni Giuseppe Nicosia, *ISGEm, RSDDM, I.I.S. Aldini Valeriani, Italy*
4. **The Impact of Technology in Mathematics Education**
   Jingya Huang, *Calgary Board of Education, University of British Columbia*
5. **Geospatial Technology Integration into Data Science Research**
   Hayley Cody, *Orange Unified,* Shuhua An & Joshua Ortega, *California State*

  University Long Beach, United States

6. **Mathematical Constructivism Education Perspective in the Context of Artificial Intelligence**
   Maodong Tian & Lei Ye, Huanggang Normal University, *China*

7. **Engaging Students in Deep Learning During the Pandemic and AI Era: Challenges, Practices and Strategies in Mathematics Classroom Research**
   Sisi Wang, Yuxia Xin, Wang Cui, *The High School Affiliated to Renmin University of China;* Xiang Gong, *Princeton International School of Mathematics and Science, United States*

8. **Artificial Intelligence Makes Difference Research in School Mathematics More Relevant**
   Allan Tarp, Olive Chapman, *MATHeCADEMY.net, Denmark*

9. **Online Math Opens for a Communicative Turn in Number Language Education**
   Allan Tarp, *MATHeCADEMY.net, Denmark*

  7:20-9:30 am Topic Session 5: **STEM and Innovative Curriculum**

Session Chair: Kim Koh & Kim Powers

1. **Developing Virtual-Reality Classroom STEM Assessment to Promote Equity-Deserving Students'**
   Kim Koh & Olive Chapman, *University of Calgary, Canada*

2. **Exploring Strategies for Building Resilient and Equitable Education Systems for Girls in Rural Areas of Pakistan: A Focus on STEM Education**
   Rabia Khuram, *University of British Columbia, Canada*

3. **Using Metric Self-evaluation Survey on Learning Objectives: A Study on the Relationship of G11 STEM Students' Self-evaluation and their Motivation of Learning Statistics and Probability**
   Shienna Marie Amorio, Kirk Angelo Manuel Galarrita, Romeo Joaquin Zuluaga, Cyril Maghilum, Marlon Boro, Amiel F. Enterina, & Julius Name
   Math/ICT Department Teacher, Xavier Ateneo Senior High School, Philippines

4. **High School Mathematical Modeling Teaching from the Perspective of STSE**
   Su Juan Liu, Yiwu Middle School, *China*

5. **Challenges and Successes in Interdisciplinary Teaching: Using Math and Health Children's Books to Support Diverse K-8 Children's Math Learning in Urban Classrooms**
   Julianna De Joya, Shuhua An, & Joshua Ortega, *California State University, Long Beach, United States*

6. **A-level Mathematics Curriculum Design for Cultivating Top Innovators**
   Dingyuan Xu, *Beijing RCF Experimental School;*
   Xiang Gong, *Princeton International School of Mathematics and Science, United States*

7. **A Study of Examples and Exercises in Based on Integrity**
   Sheng Haocan, *Capital Normal University, China*

8. **A Case Study of Visual Design of Teaching Information in Primary and Secondary Mathematics Classrooms**
   Xue Mei Chen, *Hebei Normal University, China*