



Conference Programme

16 – 17 March 2023



Thursday 16 March

Room A 9:30 – 11:25
STEM Education

Coffee Break & Poster
11:25 - 11:45

Room A 11:45-13:25
Science Teaching Models

Lunch 13:25-14:15

Room A 14:15 – 15:55
Educational Strategies

Coffee Break & Poster
15:55 – 16:15

Room A 16:15 – 18:20
Studies on Science Education

Friday 17 March

Room A 9:45 – 11:00
Chemistry Education

Coffee Break & Poster
11:00 – 11:30

Room A 11:30 – 13:10
Chemistry Education

Lunch 13:10 – 14:15

Room A 14:30 – 16:20
Science and Environment

Coffee Break & Poster
16:20 – 16:40

Room A 16.40 – 17:30
Educational Strategies



Thursday 16 March 2023

Morning Session: 9:00 – 13:25

Room A 9:00 – 9:20

Introductory Speech and Practicalities

Room A: Opening Speech 09:20 – 09:45

Outreach-Conscious Science Teaching for STEM Advancement

Veronica McCauley, National University of Ireland Galway, Ireland onsite

Room A 9:45 – 11:25

STEM Education

Moderator: Martin Musumeci, University of Malta, Malta

About the Potential of Adapted Scientific Literature for Science Education

Hilko Aljets, Thomas Waitz, Georg-August-University Göttingen (Germany) onsite

Factor Composition of Mathematics Anxiety in Undergraduate Mathematics and Physics Students

Jamie Smith, Nikolaos Fotou, University of Lincoln (United Kingdom) onsite

Studies on Project Based Learning Approach in Medical and Engineer Higher Education in Bulgaria

Vasilka Kocheva, Sofia University "Saint Kliment Ohridski", Bulgaria onsite

Renaissance as An Entry for STEAM Education

Po-Hung Liu, National Chin-Yi University of Technology, Taiwan, Republic of China, onsite

Coffee Break 11:25 – 11:45

Room A 11:45 – 13:25

Science Teaching Models

Moderator: Jamie Smith, University of Lincoln United Kingdom

Changes in attitudes and beliefs regarding intercultural academic communication in nursing: assessing a collaborative online international learning (COIL) program between Japan and the USA

David Casenove, Chiba University, Japan online

Guidance on Finding Problems Systematically Based on Questions, Research Questions and Hypotheses

Reiko Kamimura, Nippon Sport Science University, Japan online

Making Sense with Visuals. An Integrated Instrument for Teaching Students and Researchers how to use various Visual Representations and Technologies

Luc Pauwels, University of Antwerp, Belgium onsite

Science Teachers' Perspectives About the Teaching of Astronomical phenomena Using 3D Models

Charles Bonello, University of Malta, Malta onsite

Lunch 13:25 – 14:15



Thursday 16 March 2023

Afternoon Session: 14:15 – 18:20

Room A 14:15 – 15:55

Educational Strategies

Moderator: György Kovács, Luleå University of Technology, Sweden

The State of Research on Effects of Gamification in the Context of Learning

Péter Tasi, Aston University, United Kingdom onsite

Creating and Utilizing Virtual Reality and Video Demonstrations to Support Student Learning and Understanding of Geoscience

Christopher Roemmele, West Chester University of Pennsylvania, United States online

Fostering Scientific Literacy with Self-evaluation: An Intervention Study with Chinese Fifth Graders

Yuan-Ke Sun, The Education University of Hong Kong, China onsite

Making it work: Practical work in tertiary Life Sciences

Marina Constantinou, Nikolaos Fotou, University of Lincoln, United Kingdom online

Coffee Break 15:55 – 16:15

Room A 16:15 – 18:20

Studies on Science Education

Moderator: Charles Bonello, University of Malta, Malta

“Yes, Biology is for me!”: Raising the Science Capital of Boys

Veronica McCauley, National University of Ireland Galway, Ireland onsite

ResBios - Responsible Biosciences: Fostering Science Education regarding RRI

Doris Elster, University of Bremen, Germany onsite

Developing Unfamiliar Scientific Practices in Singapore: A Case Study of a Lactose Intolerance Argumentation Activity for Middle-school learners

Yew-Jin Lee, National Institute of Education, Singapore onsite

Experiences from Implementing Teach-back in the Teaching of Artificial Intelligence

György Kovács, Luleå University of Technology, Sweden onsite

Exploring the Success of R&D BIOTECH Innovators in Higher Education Institutions: A Case Study of UPLB Agricultural Innovation

Marivilla Lydia Bulan Aggarao, IKI-SEA-Bangkok University (Thailand) online

End of Conference Day One



Friday 17 March 2023

Morning Session: 9:45 – 13:10

Room A 9:45 – 11:00

Chemistry Education

Moderator: Thomas Waitz Georg-August-University Göttingen, Germany

Digital and difficulty-differentiated Learning Modules in a Student Laboratory Context: a Pilot Study

Nicolai ter Horst, Friedrich Schiller University Jena, Chemistry Education Department, Germany onsite

Calculation Tasks' E-learning Methodology Creation and Application for Lower Chemistry Secondary Education

Andrejs Zaichenko, Charles University, Czech Republic online

From Current Research to Chemistry Education: Preparation of Polysaccharide-based Nanoparticles by Dialysis

Antonia Fruntke, Friedrich Schiller University Jena, Germany onsite

Coffee Break 11:00 - 11:30

Room A 11:30 – 13:10

Chemistry Education

Moderator: Timm Wilke, Friedrich Schiller University Jena, Germany

Course-Based Undergraduate Research Experience For Biochemistry Majors in Physical Chemistry

Eduardo Méndez, Universidad de la República, Uruguay onsite

Low-Cost Tracking of a Nanoscopically Compartmentalized Photo-Catalytic System - An Experiment for High School Students

Malte Petersen, Friedrich Schiller University Jena, Germany onsite

On Assessing Effectivity and Design of Multimedia Learning Environments

Christoph Bley, Friedrich Schiller University Jena, Germany onsite

Teaching Smart Textiles to Future Textile and Clothing Engineers in a Hands-On And Gamified Way - An Insight into the Development of A New Learning Setting with Design Thinking And EMPAMOS

Manuela Bräuning, Albstadt-Sigmaringen University, Germany online

Lunch 13:10 – 14:15



Friday 17 March 2023

Afternoon Session: 14:15 – 17:50

Room A 14:15 – 16:10

Science Teacher Professional Development

Moderator: Elisabetta Delle Donne, Pixel, Italy

Future Perspectives in European Cooperation for the Promotion of Science Education

Elisabetta Delle Donne, Pixel, Italy onsite

Science Education Teacher Leadership

Arthur Eisenkraft, University of Massachusetts Boston, United States onsite

The Gap between Science Teachers' Interest and Practice Of Teaching Competencies for Improving Students' Core Competencies

Jee-Young Park, Nan Sook Yu, Chonnam National University and Korea University, Republic of Korea onsite

Investigating Secondary Teachers' Perceptions toward Mobile Learning

Kalliopi Kanaki, Michail Kalogiannakis, University of Crete, Greece online

Coffee Break 16:10 – 16:40

Room A 16:40 – 17:30

Educational Strategies

Moderator: Elisabetta Delle Donne, Pixel, Italy

Utilizing the Cross Cutting Concepts to Design Effective Science Sensemaking Experiences and Scaffolding Scientific Knowledge

Christopher Roemmele, West Chester University of Pennsylvania, United States online

A Data-Driven Gamification Approach to Monitor and Predict the Students' Academic Performance

Sherif Abdelhamid, Virginia Military Institute, United States online

Room A: Closing Speech 17:30 – 17:50

The forest and beyond - Where to further science education?

Péter Tasi, Aston University, United Kingdom onsite

End of the Conference



Virtual Presentations

A Study On Changes in the Consciousness of Teachers Who Participated in Taste Education Training <i>Mika Tsuyukubo, Toyo University, Japan</i>	Secondary Students' Emotions and Inquiry Performances During Their First Learning Experience in the Chemistry Laboratory <i>Leticia González-Rodríguez, Universida de de Santiago de Compostela, Spain</i>
Curriculum Development Based on " Period of Integrated Studies " to Cultivate "STEAM Educational Skills" and Construction of a Hybrid Validation System <i>Kenichi Goto, Toyo University, Japan</i>	Teaching Practice of Using the Mutual Evaluation Chart in the Observation of Somatic Cell Division <i>Yoriko Ikuta, Nara Prefectural Seisho Junior and Senior High School, Japan</i>
Directions for Inquiry-Based Teaching in China's New Educational Era. <i>Jiamin He, Toyo University, Japan</i>	The "Human Library" method and perspectives <i>Tania Todorova, State University of Library Studies and Information Technologies (SULSIT), Bulgaria</i>
Educating Preschool and Primary School Teachers In the STEAM Approach: Presentation of the Auresel Online Course of the NGSS Project <i>Michail Kalogiannakis, University of Crete, Greece</i>	The Influence of Learning to Incorporate Instruction on Formulation of Consideration Description Under Peer Evaluation Activity on Awareness of Consideration <i>Shinya Yamauchi, Aojima Lower Secondary School, Japan</i>
Investigating Secondary Teachers' Perceptions toward Mobile Learning <i>Michail Kalogiannakis, University of Crete, Greece</i>	We are Landing on Mars! - a Case Study into Key Competences Synergizing to Promote Learners' Engagement <i>Silvia Matthies, HEOL Bilbao, Spain</i>
Problem-Solving Skills: Some Post-Pandemic Effects <i>Patricia Morales Bueno, Universidad Católica del Perú PUCP, Peru</i>	What Are the Necessary Elements for a Group of Teachers Who Continue to Learn Proactively? <i>Yorikazu Nouchi, National Institute for Educational Policy Research, Japan</i>
Engaging English Learners in the Sciences <i>Melissa Caspary, Georgia Gwinnett College & Diane Boothe, Boise State University, United States</i>	Arts or Science? Arts + Science: a project to visualise interdisciplinary approaches to knowledge in primary and secondary schools <i>Esther Nieto Moreno de Diezmas, University of Castilla-La Mancha, Spain</i>
Educational Potential of E-resources in Distance Learning in the Subject of Fine Arts <i>Valentina Radeva, "Angel Kanchev" University of Rus, Bulgaria</i>	

Onsite and Online Poster Presentations

Chemistry in the village: an analysis of the Indigenous Brazilian profile on instagram as a perspective for the teaching of decolonial sciences <i>Kezia Ribeiro Gonzaga, Instituto Federal da Bahia, Brazil</i>	Students Prior Knowledge about Sustainable Design Perspectives of Solar Cells <i>Philipp Lanfermann, Georg-August-Universität, Germany</i>
Designing Open Metaverse Platform for Immersive Exhibition and Education <i>Choonsung Shin, Graduate School of Culture, Chonnam National University, Korea, Republic of</i>	Tales and haiku as pedagogical strategies to enhance empathy for living beings and care for nature of future early childhood educators <i>Hugo Torres-Contreras, Universidad de Chile, Chile</i>
Electrosynthesis of Bromocresol Green – Colorful Experiments for Teaching (not only) Green Chemistry <i>Christoph Weidmann, Georg-August-University, Germany</i>	Teaching Elementary School Pupils How to Code – Design and Delivery of a Programming Course <i>Tibi Moanes, Beit Berl College, Israel</i>
IUPAC Top Ten Emerging Technologies in Chemistry Education <i>Edwin Bogdan, Georg-August-University, Germany</i>	A Longitudinal Study of Students' Conceptions of Nature of Science in Alternative Teacher Certification Programs <i>Ruby Olivares-Donoso, Pontificia Universidad Católica de Chile, Chile</i>
LabPi-Web – A low-cost and Cloud Based Measuring System <i>Manuel Wejner, Gwenthwyfar Heissner, Friedrich Schiller University Jena, Germany</i>	Why do Japanese Students Have Difficulties in Astronomical and Meteorological Fields?: Reform of teaching methods based on comprehension surveys of university and high school students <i>Tetsuhide Shigeno, Ryukoku University, Japan</i>
Setting Chemistry in Motion: Medical Aspects of Bones and Movement in Chemistry Education <i>Timm Wilke, Friedrich Schiller University Jena, Germany</i>	Stem Graduates Employment: Perspectives from Kazakhstan <i>Aliya Kuzhabekova, Nazarbayev University, Kazakhstan online</i>
Stitch by Stitch: Medical Aspects of Polymers in Surgical Suture Materials for Chemistry Education <i>Elisabeth Dietel, Friedrich Schiller University Jena, Germany</i>	Digital Interactive Botany to Promote Learning by Doing Bioscience <i>Marina Minoli, National Biologists Order, High School Marconi, Royal Society of Biology, Italy online</i>
Encouraging science corners from the Primary Education pre-service teachers <i>Jose Manuel Hierrezuelo Osorio, University of Málaga, Spain</i>	Arguments expressed by university students according to their scientific background on the banning of single-use plastics <i>María-José Cano-Iglesias, Universidad de Málaga, Spain online</i>

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