



SMC
“SCIENTIA EDUCOLOGICA”

Symposium Partners



Šiauliai County
Povilas Višinskis
Public Library



5th International Baltic Symposium on Science and Technology Education BalticSTE2023

“SCIENCE AND TECHNOLOGY EDUCATION: NEW DEVELOPMENTS AND INNOVATIONS”

12-15 June 2023

SYMPOSIUM PROGRAMME



Šiauliai, Lithuania

Symposium Organizer

Scientific Methodical Center „Scientia Educologica“, Lithuania

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Dr. Uladzimir Slabin, *University of Oregon, USA*
Prof. Dr. Milan Turčani, *Constantine the Philosopher University, Slovakia*

Symposium Website & E-mail

<http://balticste.com> balticste@gmail.com

Sunday
11th June 2023

17.30 - 20.30

ICE-BREAKING
(Individual activity)

Monday
12th June 2023

8:00 - 9:30

REGISTRATION
(Second Floor, Šiauliai Public Library, Aušros av. 62)

9:30-10:00

OPENING CEREMONY
(Second Floor, Šiauliai Public Library, Aušros av. 62)

Musical Greeting "Festival of Beetles" by the ensemble of Šiauliai nursery-kindergarten "Three Dwarfs". The children were prepared by the art education teacher **Ernesta Saveikienė**.

Head of the Library **prof. dr. Bronius Maskuliūnas**

Acting Director of Šiauliai Technology Training Centre **Jolita Vengrė**

Symposium Chair **prof. dr. Vincentas Lamanauskas**

10:00-12:00

PLENARY MEETING 1
(Second Floor, Šiauliai Public Library, Aušros av. 62)
Chairmen: **Tiia Rüütmann, Vincentas Lamanauskas**

1. **Tiia Rüütmann.** Engineering pedagogy and teacher's competencies for effective teaching STE (Tallinn University of Technology, Estonia)
2. **Ching-Ching Cheng.** Implementing a national database on young children's learning: A longitudinal study to evaluate the quality of preschools (National Chiayi University, Taiwan)

12:00-14:00



LUNCH

14:00-15:00

PLENARY MEETING 2
(Second Floor, Šiauliai Public Library, Aušros av. 62, Šiauliai)
Chairmen: **Angela James, Boris Aberšek**

Jari Lavonen. Learning science through project-based learning: US-Finnish partnerships for international research and education (PIRE) (University of Helsinki, Finland)

15:00-15:30



COFFEE BREAK

15:30-17:00

SECTION 1

General S&T Education Issues

(Second Floor, Šiauliai Public Library, Aušros av. 62, Šiauliai)

Chairmen: **Andris Broks, Małgorzata Nodzyńska-Moroń**

1. **Angela James.** Learning, sharing and growing: Science in community engagement (*Kwazulu-Natal University, South Africa*)
2. **Małgorzata Nodzyńska-Moroń, Vladimír Sirotek.** The durability of formal knowledge and its restructuring during lifelong learning (*University of West Bohemia in Pilsen, Czech Republic*)
3. **Hyoung-Yong Park, Hae-Ae Seo.** The public's understanding of "Evolution" as seen through online spaces (*Gyeongin National University of Education, South Korea; Pusan National University, South Korea*)
4. **Boris Aberšek, Metka Kordigel Aberšek.** Transformation of education from dehumanization back to rehumanization (*University of Maribor, Slovenia*)
5. **Vincentas Lamanuskas, Rita Makarskaitė-Petkevičienė.** Environmental education in primary school: Meaning, themes and vision (*Vilnius University, Lithuania*)

15:30-17:00

SECTION 2

S&T Education Approaches and Praxis

(Second Floor, Šiauliai County Public Library, Aušros av. 62, Šiauliai)

Chairmen: **Kuo-Hung Huang, Rita Birzina**

1. **Rita Birzina, Dagnija Cedere, Sandra Kalnina.** Learning skills acquired at school for STEM studies at the university (*University of Latvia, Latvia*)
2. **Martin Bilek.** The out-of-school science education in the international perspective: The project DOSLECTEP (*Charles University, Czech Republic*)
3. **Kalle Saastamoinen, Antti Rissanen, Arto Mutanen.** Intelligent learning in studying and planning courses – new opportunities and challenges for officers (*National Defence University, Finland*)
4. **Giovanni Scataglia Botelho Paz, Solange Wagner Locatelli.** The natural sciences curriculum of the city of São Paulo: Conceptions of teachers who teach natural sciences in the early years of elementary school (*Federal University of ABC, Brazil*)
5. **Stefan Ferner.** Can participatory project offerings in engineering education make an innovative contribution? (*University of Hamburg, Germany*)
6. **Peter Kortesi.** CEEPUS networking (*University of Miskolc, Hungary*)

POSTER PRESENTATIONS

(Second Floor, Hall, Šiauliai County Library, Aušros av. 62, Šiauliai)

1. **Jan Novotný.** How findings in cosmology affect and form attitudes towards environmental ethics (*Masaryk University, Czech Republic*)
2. **Uladzimir Slabin.** Mendeleev eponyms in the epoch of educational ethnocentrism (*University of Oregon, USA*)
3. **Anna Klim-Klimaszewska.** Reminiscences of teachers and schoolers after distance learning (*Siedlce University of Natural Sciences and Humanities, Poland*).
4. **Małgorzata Wisniewska.** STEAM in teachers' experiences in working with children with sensory integration disorders (*Siedlce University of Natural Sciences and Humanities, Poland*).
5. **Tamara Pigozne, Arturs Medveckis.** The effectiveness of using the greenhouse as a teaching strategy in natural sciences in the context of special education (*University of Latvia, Latvia; Liepāja University, Latvia*)
6. **Stanislava Olić Ninković, Jasna Adamov.** University students' opinions on the use of 3D holograms in learning organic chemistry (*University of Novi Sad, Republic of Serbia*)

7. **Itumeleng Phage.** Retention of learners in the STEM fields: School educator's perspectives and dilemmas (*Central University of Technology, South Africa*).
8. **Vincentas Lamanauskas.** Results of „Bridge2Teach“ project activities (*Vilnius University, Lithuania*)

Tuesday
13th June 2023

07:30 —
18:30/19.00



**OUTDOOR
WORKSHOP/EXCURSION**
Science & Technology EDUCATION

Wednesday
14th June 2023

08:30-10:00

PLENARY MEETING 3

(Second Floor, Šiauliai County Public Library, Aušros av. 62, Šiauliai)
Chairmen: **Metka Kordigel-Aberšek, Martin Bilek**

Predrag Pale. Which teachers need to be replaced by AI (*University of Zagreb, Croatia*)

Gabriel Gorghiu. Promoting science actions in nowadays education: An important issue related to open schooling (*Valahia University of Targoviste, Romania*)

10:00-10:30



COFFEE BREAK

10:30-12:00

SECTION 3

General S&T Education Issues

(Second Floor, Šiauliai County Public Library, Aušros av. 62, Šiauliai)
Chairmen: **Angela James, Tamara N. Rončević**

1. **Maja Kerneža.** Fundamental and basic cognitive skills required for teachers to effectively use Chatbots in education (*University of Maribor, Slovenia*)
2. **Dejan Zemljak.** Advanced tools for skill development: Learning preparations using ChatGPT (*University of Maribor, Slovenia*)
3. **Jelena Kosmaka, Ilva Cinite, Girts Barinovs.** Exploring interactive H5P video as an alternative to traditional lecturing at the physics practicum (*University of Latvia, Latvia*)
4. **Jovita Ponomariovienė.** Competency-based science education: the case of one Lithuanian school (*Vytautas Magnus University, Lithuania*)
5. **Jan Francisti, Zoltán Balogh, Milan Turčáni.** The use of internet of things technology in the pedagogical process (*Constantine the Philosopher University in Nitra, Slovakia*)

10:30-12:00

SECTION 4

S&T Education Approaches and Praxis

(Second Floor, Šiauliai County Public Library, Aušros av. 62, Šiauliai)

Chairmen: **Gabriel Gorghiu, Solange Locatelli**

1. **Young-Joon Shin, Hyunju Park, Hae-Ae Seo.** The influence of a project-based club program on middle school students' action competency in responding to climate change (*Gyeongin National University of Education, South Korea; The War Memorial of Korea, South Korea; Pusan National University, South Korea*)
2. **Gabriel Gorghiu, Mihai Bîzoi, Laura Monica Gorghiu, Claudia Lavinia Buruleanu.** Students' perceptions and attitudes regarding science following the implementation of the "Rewilding" science action (*Valahia University of Targoviste, Romania*)
3. **Sabina Wieruszewska-Duraj.** The effectiveness of ecological education of children in the research concept of Celestyn Freinet (*University of Natural Sciences and Humanities, Poland*)
4. **Radu Lucian Olteanu, Gabriel Gorghiu.** Increasing the students' interest in science by implementing a science action dedicated to plastics biodegradability (*Valahia University of Targoviste, Romania*)
5. **Solange Locatelli.** Drawings to learn chemistry: Limits and possibilities (*Federal University of ABC, Brazil*)

12:00-14:00



LUNCH

14:00-15:30

PLENARY MEETING 4

(Second Floor, Šiauliai County Public Library, Aušros av. 62, Šiauliai)

Chairmen: **Metka Kordigel-Aberšek, Martin Bilek**

Paolo Bussotti. Introducing the concept of energy: Educational and conceptual considerations (*University of Udine, Italy*)

Ilva Cinite. Student-centered education implementation in undergraduate physics courses of natural sciences at the University of Latvia: Successes and challenges (*University of Latvia, Latvia*)

15:30-16:00



COFFEE BREAK

16:00 -17:00

SECTION 5

General S&T Education Issues

(Second Floor, Šiauliai County Public Library, Aušros av. 62, Šiauliai)

Chairmen: **Solange Locatelli, Malgorzata Nodzyska**

1. **Saša A. Horvat , Tamara N. Rončević, Ivana Z. Bogdanović, Dušica D. Rodić.** Differences in graphic illustrations in the contents of natural sciences in regular textbooks and textbooks for students with special educational needs in the Republic of Serbia (*University of Novi Sad, Republic of Serbia*)
2. **Marcella Seika Shimada, Solange Wagner Locatelli.** Students' perception of an inquiry-based metavisual activity about concepts of chemical kinetics (*Federal University of ABC, Brazil*)
3. **Agneš R. Sedlar, Tamara N. Rončević, Saša A. Horvat.** The application of interactive learning tasks made by using digital hybrid illustrations in the topic "Hydrocarbons" in eighth-grade organic chemistry classes (*University of Novi Sad, Republic of Serbia*)
4. **Tamara N. Rončević, Saša A. Horvat, Dušica D. Rodić, Ivana Z. Bogdanović.** Secondary school students' perception of biochemistry concepts by using word association test (*University of Novi Sad, Republic of Serbia*)
5. **Carla Patricia Araujo Florentino, Marcella Seika Shimada, Solange Wagner Locatelli.** Prior knowledge about science from drawings by a group of deaf students (*Federal University of ABC, Brazil*)

Discussion

18:00-21.00



SYMPOSIUM DINNER (Naisiai Village)

Thursday

15th June 2023

08:30-10:00

INTERACTIVE PLENARY

(Šiauliai Technology Training Center, Vilniaus Street 27, Šiauliai)

*Moderator: **Malgorzata Nodzyska-Moron, Boris Aberšek***

Andris Broks. Human, life, universe: Human's life within the universe *(University of Latvia, Latvia)*

Reviews to the theme:

Tamara Rončević, Republic of Serbia

Angela James, South Africa

Solange Locatelli, Brazil

Gabriel Gorghiu, Romania

Paolo Bussotti, Italy

Predrag Pale, Croatia

Tiia Ruutmann, Estonia

Discussion

10:00-10:30



COFFEE BREAK

10:30-12:30

WORKSHOP I

Floristic educational activities

(Šiauliai Technology Training Center, Vilniaus Street 27, Šiauliai)

*Chairmen: **Vincentas Lamanauskas, Reda Valiukienė***



WORKSHOP II

Photography educational activities

(Šiauliai Technology Training Center, Vilniaus Street 27, Šiauliai)

*Chairmen: **Vincentas Lamanauskas, Reda Valiukienė***

Discussion

12:30-13:00

SYMPOSIUM CLOSING

(Šiauliai Technology Training Center, Vilniaus Street 27, Šiauliai)

What Do We Do NEXT?

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