

International Seminar for STEAM Doctoral Students

Helsinki, Faculty of Educational Sciences, Siltavuorenpenger 5

August 25th – 26th 2022, + workshops and personal consulting August 24th

The seminar and workshops are free and open for doctoral students in Finland, Estonia and Israel and are part of the Horizon 2020 SciCar project.

August 23th

Tuesday 23th August, voluntary based small group visits to downtown museums will be organised. Please select the museum from the list below. The Finnish students come to Töölö Tower at 3 PM (15:00) (Pohjoinen Hesperiankatu 23 a, 00260 Helsinki, <https://unihome.fi/en/properties/toolo-towers>) and pick up the students and supervisors, who are willing to participate this event. No pre-registration is needed, the groups are formed before the visits. The visit is organised by own cost.

The museums and student guides are following (the emails of Finnish students' e-mails are `firstname.lastname@helsinki.fi`):

1. Design Museum (<https://www.designmuseum.fi/en/>)
Salla Veijonaho and Inka Ronkainen
2. Natural Science Museum (<https://www.luomus.fi/en/natural-history-museum>)
Anna Lager
3. The Finnish National Museum (<https://www.kansallismuseo.fi/en/kansallismuseo>)
Miikka Turkkila

There is also possibility to visit Heureka Science Center by own cost and own time (<https://www.heureka.fi/exhibition/katastrofienkeskella/?lang=en>)

After the museum visits on August 23rd, there will be a joint social event at about 6 PM in **Töölö Tower A Building** on the 11th-floor terrace. Pizzas and drinks available. Please, select your pizza from the web page <https://elomake.helsinki.fi/lomakkeet/118900/lomake.html> , before August 22nd.

August 24th Location University of Helsinki, faculty of Educational Sciences

August 24th Workshop-day, Minerva, Seminar room K113

Workshop I, Minerva, Seminar room K113, Chaired by Professor Kalle Juuti

9.00 – 12.00 Dr. Irene Neuman, IPN, Kiel, Germany: Design of a cognitive test: validity and reliability issues related to the test.

12.30 - 13.30 Lunch, Cafeteria Olivia (ground floor)

Workshop II, Minerva, Seminar room K113, Chaired by Professor Miia Rannikmae

13.30 – 17.00 Prof. Joseph Krajcik, Michigan State University, USA. Research based design of teaching/learning modules: Examples of the modules, designed during the PIRE project.

17.00 - 17.30 Reflection

17.30 – 19.00 Reception by the Faculty of Educational Sciences, Vice-Dean Arto Kallioniemi, Faculty building, Cafeteria Olivia (ground floor), Siltavuorenpenger 5

August 25th Location Minerva-tori K226 University of Helsinki, faculty of Educational Sciences

9.00 Opening Jari Lavonen & Miia Rannikame

Session I Chaired by Jari Lavonen,

- 9.10 - 10.00 Plenary 1: Prof. Barbara Schneider, Michigan State University, USA:
Investigating Optimal learning moments
- 10.00 - 10.30 Plenary 2: Dr. Yael Feldman-Maggor, Weizman Institute, Israel:
Organizing learning and teaching in online information-rich environment: Higher education chemistry courses for teachers and students
- 10.30 - 11.00 Coffee break
- 11.00 - 11.45 Doctoral student presentations, Parallel sessions

Place: Minerva tori K226

Chair: Ron Blonder

Itsik Aroch, Weizmann
institute of Science, Israel:

Revealing new modes of
integrating technology in
chemistry teaching based on
teachers' experiences

Place: Minerva tori K222C

Chair: Yael Feldman-Maggor

Lauri Kõlamets, University of
Tartu, Estonia:

Lower Secondary School
Science Syllabus Energy
Concept Learning Outcome
Analysis in Estonia

Place: Minerva tori K222B

Chair: Shelley Rap

Doris Kristina Raave,
University of Tartu, Estonia:

Teachers' practices
regarding classroom digital
technology integration

11.45 - 12.30 Doctoral student presentations, Parallel sessions

Place: Minerva tori K226

Chair: Shelley Rap

Opponent:

Ella Yonai, Weizmann
institute of Science, Israel:

Uncovering the Emotional
Dimensions In a SEM
Learning Environment

Place: Minerva tori K222C

Chair: Katrin Vaino

Tapio Rasa, University of

Opponent: Doris Raave

Helsinki, Finland:

Agency and transformative
potential of technology in
upper-secondary students'
images of the future: Role of
futures thinking in scientific
literacy

12.30 - 13.30 Lunch, Cafeteria Olivia (ground floor) (during the lunch discussions with the presenters and the opponnets, chaired by the session chair)

Session II

13.30 - 14.15 Doctoral student presentations, Parallel sessions

Place: Minerva tori K226

Chair: Regina Soobard

Opponent:

Ehud Aviran, Weizmann

Place: Minerva tori K222C

Chair: Rachel Mamlok-Naaman

Eric Roldan Roa, University of

Tartu, Estonia:

Place: Minerva tori K222B

Chair: Anne Laius

Tapashi Binte Mahmud

Chowdhury, University of

Institute of Science, Israel: How the experience of learning chemistry with a personalized online environment effected students' outcomes	Using animated pedagogical agent to assist teachers in delivering formative assessment at a classroom level	Tartu, Estonia: Establishing trans- contextual science education in promoting active informed citizenry for societal development
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14.15.- 15.00 Doctoral student presentations, Parallel sessions

Place: Minerva tori K226 Chair: Jack Holbrook Inga Ploomipuu, University of Tartu, Estonia: Developing and Piloting a Remedial Course for Promoting Health- care Students' Scientific Literacy	Place: Minerva tori K222C Chair: Shelley Rap Triin Rosin, University of Tartu, Estonia: Understanding teacher beliefs about teaching and assessment in the context of Estonian national science e-testing and scientific competences highlighted by the test
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15.00 - 15.30 Coffee break (during the coffee discussions with the presenters and the opponnets, chaired by the session cahir)

15.30 - 16.00 Plenary 3, Minerva tori K226, Chaired by Jari Lavonen:
 Dr. Anni Loukomies:
 Becoming familiar with science careers through industry site-visit

16.00 - 17.00 Poster session and reflections, Minerva tori K226, Chair: Jack Holbrook

Ayshi, Sindiani- Bsoul, Weizmann Institute of Science, Israel: Attitudes and behavior of science students regarding SDG: An intervention study Tal Hirsh Sameach, Weizmann Institute of Science, Israel: The impact of personalized context through different careers on students' interest in chemistry Rauno Neito, University of Tartu, Estonia: Situational interest and engagement in meaningful learning Janina Taurinen, INAR, University of Helsinki, Finland: Climate competencies of the Finnish youth Erika Perttuli-Borobio, Finland: Fostering the Development of Computational Thinking Skills in STEAM Education Through a Reflective Portfolio Process Aleksi Markkanen, Kulosaari secondary school, Finland: Fostering the Development of Computational Thinking Skills in STEAM Education Through a Reflective Portfolio Process
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16.30 – 18.00 Light Reception, Minerva tori K226, (sandwiches, wine, ..) while looking at the posters, offered by the SciCar project, Faculty building, Siltavuorenpenger 5

August 26th Location Minerva-tori K226 University of Helsinki, faculty of Educational Sciences

Session III Chaired by Rachel Mamlok-Naaman

- 9.00 - 9.30 Plenary 4: Associate Professor Regina Soobaard, Tartu University:
Determining levels of scientific competence using context-based test instrument
- 9.30 - 10.00 Plenary 5: Associate Professor Mirac AYDIN, Trabzon University:
Use of augmented reality in science education
- 10.00 - 10.30 Coffee break
- 10.30 - 11.15 Doctoral student presentations, Parallel sessions
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| Place: Minerva tori K226 | Place: Minerva tori K222C |
| Chair: Heili Kasuk | Chair: Yael Feldman-Maggor |
| Anna Lager, University of Helsinki:
Using scientific practices in a digital
learning environment: contexts of
perceived challenges | Moonika Teppo, University of Tartu,
Estonia:
Lower secondary school students' intrinsic
motivation in science learning: student
differences between science subjects and
grade levels |
- 11.15 - 12.00 Doctoral student presentations, Parallel sessions
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| Place: Minerva tori K226 | Place: Minerva tori K222C |
| Chair: Rachel Mamlok-Naaman | Chair: Kaido Reivelt |
| Ergi Bufasi, University of Latvia, Latvia
A preliminary study on spatial ability for
primary school teachers' professional
development | Helen Semilarski, University of Tartu,
Estonia:
Student-led Expansion of Disciplinary and
Interdisciplinary Core Idea Maps to
Promote Student Perceived Self-efficacy in
Science |
- 12.00 - 13.00 Lunch, Cafeteria Olivia (ground floor) (during the lunch discussions with the presenters and the opponnets, chaired by the session chair)
- Session IV** Chaired by Jack Holbrook
- 13.00 - 13.30 Plenary 6: Post Doctoral Reseracher YURDAGÜL BOĞAR, University of Helsinki, Finland: Computational thinking in the context of STEM education
- 13.30 - 14.15 Doctoral student presentations, Parallel sessions
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| Place: Minerva tori K226 | Place: Minerva tori K222C |
| Chair: Regina Soobard | Chair: Heili Kasuk |
| Miikka Turkkila, University of Helsinki, Finland:
Roles and importance of
human and non-human
actors during active
knowledge construction | Helin Semilarski, University of Tartu, Estonia:
Content analysis of grade 12
students' conceptual
understanding of core
concepts in biology |
- 14.15 – 14.45 Summing up and closing, coffee and Karelia pie. (+ discussions with the presenters and the opponnets, chaired by the session chair)