TeaM-SIM
Simulation-based learning in Teacher and Medical education to facilitate collaboration competences

E-CER founding date: 1st of January 2024

E-CER Scope:

This E-CER investigates effective professional collaboration. Collaboration competences are increasingly vital for professional practice, yet these competences are under-developed in many workplaces and in professional learning research. Their development requires purposeful learning. We know that intensive researcher-led interventions are effective in supporting this learning, but they are also resource-intensive. Research must identify effective, scalable interventions to facilitate learning to collaborate.

We uniquely focus on cross-fertilisation of research on teacher and doctor learning, explored in the recent Learning and Instruction Special Issue, and the utilisation of simulation-based learning (SBL). SBL, from low-tech to mixed and virtual reality 'approximations-of-practice' (Grossman et al., 2018), is an emerging innovative model of professional learning in medicine and teacher education. SBL is yet to be fully utilised in research on learning to collaborate. We will study simulation-based learning (SBL) as an innovative approach to professional learning, advancing the evidence base on effective scalable SBL-interventions to support the development of collaboration competences.

This Centre will establish the new interdisciplinary topic of research on facilitating professional collaboration skills learning with simulations in two exemplary fields, medical and teacher education and professional development. Through the multi-disciplinary team of participants, this E-CER aims to integrate research on SBL-design, learning and instruction, and workplace practices across education and medicine to create a framework connecting real-world relevant SBL-design with evidence-based professional learning mechanisms. This will inform the development of new rigorous practice-based research methods and tools to study collaboration competence development, while maintaining a focus on pertinent current and future challenges across education and medicine.

Impacting on research, we will develop a new and dynamic interdisciplinary research framework on collaborative competence, cross-cutting medical and teacher education, both rooted in and advancing research on learning and instruction. There will be focused opportunities for early career researchers to develop networks in this research area.

Impacting on education, the participants' networks across teacher, medical and professional education, and collaborations with healthcare providers in the UK, Germany, France, Switzerland, Netherlands, US and across Scandinavia will enable the testing and dissemination of findings into practice. The unique novel impact of this project will be the opportunity for teacher and medical education to directly learn from one another.

Working with policy makers, the E-CER will also address the need across the public sector to better understand how to facilitate effective collaboration at-scale.

E-CER Members:

1. **Riikka Hofmann**
   Riikka Hofmann is Professor of the Learning Sciences at Cambridge University, based at the Faculty of Education and the School of Clinical Medicine's Cambridge University Medical Education Group. She is Fellow of Hughes Hall, Cambridge and holds the title of Docent in Psychology of Education at Helsinki University. Her research investigates the mechanisms through which professional learning interventions in education and healthcare effect change in institutional practice to achieve more equitable outcomes. As expert advisor to the UK Government, the Department for Education and the National Health Service and the World Bank, she has significantly contributed to taking research into addressing real-world challenges.

2. **Frank Fischer**
   Frank Fischer is a full professor of Educational Science and Educational Psychology at the University of Munich. His research focuses on how people learn to engage in scientific reasoning and argumentation, as well as in diagnostic reasoning. With respect to pedagogy, he focuses on computer-supported collaborative learning and simulation-based learning environments. He is an Inaugural Fellow of the International Society of the Learning Sciences and a member of the Bavarian Academy of Sciences.

3. **Martin Fischer**
   More information will follow in due time.

4. **Jan Vermunt**
   Jan Vermunt is a Professor of Learning Sciences and Educational Innovation at Eindhoven University of Technology, Eindhoven School of Education. He has also worked at the universities of Tilburg, Leiden, Maastricht, Utrecht and Cambridge. His expertise area are the learning sciences, with a focus on teaching and student learning in higher education, and teachers' learning and professional development. From 2014 to 2018 he served as

Editor-in-Chief of EARLI's flagship journal, *Learning and Instruction*. In 2016 the University of Antwerp awarded him a honorary doctorate in Educational Sciences for his entire scientific work.

5. **Oskar Lindwall**
Oskar Lindwall is a Professor of Communication at the Department of Applied IT at the University of Gothenburg, Sweden. He has conducted studies on conversational agents, simulation-based training, and the teaching and learning of manual skills. Central research topics include the sequential organization of instruction, the sensitive nature of feedback, and the use of video for instruction and research. Most recently (2024), he co-edited the volume *Instructions and Instructed Action: The Situated Production, Reproduction, and Subversion of Social Order* (Routledge).

6. **Monika Nerland**
Monika Nerland is Professor in the Department of Education, University of Oslo. She conducts research on knowledge practices and learning in professional education and work, with a special interest in knowledge sharing in expert communities and changing demands to professional expertise. She has led several research projects that investigated these themes comparatively across professions, including teaching and nursing. Currently, she is leading the research project CORPUS, which investigates implications of digitalization for work and learning in health services in Norway.

7. **Katharina Maag Merki**
Katharina Maag Merki has been a full professor of educational science at the University of Zurich since 2009 with a focus on the theoretical and empirical research on educational processes in Schools. Professor Maag Merki's main research interests include research on school effectiveness and school development, educational governance, educational opportunity, and self-regulated learning. She is currently conducting a four-year quasi-experimental study to investigate the effects of an intervention on the regulation of teachers' collaboration routines in primary schools.

8. **Catherine Gabelica**
More information will follow in due time.

9. **Vitaliy Popov**
Vitaliy Popov is an Assistant Professor in the Department of Learning Health Sciences with a courtesy appointment at the U-M School of Information. He is also the Director of Learning Sciences and Technology for the Clinical Simulation Center for University of Michigan Medical School. His research focuses on understanding how team function can be optimized to lead to better learning gains, performance and healthcare outcomes. He is currently serving as a PI or Co-PI on several projects funded by the National Science Foundation ranging from applying multimodal learning analytics in teamwork in VR to understanding the mechanisms of joint visual attention in the operating room.

10. **Marja Kaijomaa**
More information will follow in due time.

11. Olga Chernikova

Olga Chernikova currently holds a PhD in Learning Sciences from Ludwig-Maximilian University (Munich, Germany). She is a research fellow at the chair of Educational Psychology and Educational Sciences at Ludwig-Maximilian University in Munich. Her research interests deal largely with use of digital media and instructional support in teacher education.