

# PROGRAM 2024

KEYNOTES VIA ZOOM



IFS-Virtual Keynote Series

The Center for Research on Education and School Development (IFS) at the TU Dortmund University organizes the fourth IFS Virtual Keynote Series. Two keynotes will be held per date. A five-minute introduction is followed by the 45-minute keynotes. After each keynote will be 15 minutes time for moderated questions and answers. The Virtual Keynote Series will end with a final moderated discussion (20 minutes).

22<sup>ND</sup>  
JANUARY

## CHALLENGES AND POTENTIALS OF ARTIFICIAL INTELLIGENCE IN EDUCATION RESEARCH AND IN THE CLASSROOM

3.00–4.00 p.m.

SANNA JÄRVELÄ, University of Oulu, Finland

*Advancing socially shared regulation in collaborative learning with AI*

4.30–5.30 p.m.

PHIL WINNE, Simon Fraser University, Canada

*How can AI help self-regulated learners learn?*

5:30–5.50 p.m.

FINAL MODERATED DISCUSSION

29<sup>TH</sup>  
JANUARY

## CHALLENGES AND POTENTIALS OF ARTIFICIAL INTELLIGENCE IN EDUCATION RESEARCH AND IN THE CLASSROOM

3.00–4.00 p.m.

MAR PÉREZ-SANAGUSTÍN, Université de Toulouse, France

*Hybrid intelligence: a new research paradigm for educational research*

4.30–5.30 p.m.

JEFF GREENE, University of North Carolina, USA

*Artificial intelligence, real learning*

5:30–5.50 p.m.

FINAL MODERATED DISCUSSION

## REGISTRATION INFORMATION

The conference is free of charge and you may register here: <https://ifs.ep.tu-dortmund.de/ifs-virtual-keynote-series/>.

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## CHALLENGES AND POTENTIALS OF ARTIFICIAL INTELLIGENCE IN EDUCATION RESEARCH AND IN THE CLASSROOM

Advancing socially shared regulation in collaborative learning with AI  
**Sanna Järvelä (University of Oulu, Finland)**

There is global consensus that a new set of uniquely human skills and competencies will be necessary to succeed in a rapidly changing world, especially those that machines cannot match or replicate. These skills and competencies are central to research on regulation of learning in collaborative contexts, namely socially shared regulation of learning (SSRL). I introduce SSRL and how multimodal analytics and AI-based methods have helped us to progress in that research. I stress that systematic understanding of human learning process is needed to leverage full potential of data to help learners and AI to collaborate and learn together, which is called hybrid intelligence.

How can AI help self-regulated learners learn?

**Phil Winne (Simon Fraser University, Canada)**

When students attend a lecture on campus, study a chapter at home, or listen to a podcast on the bus, I propose all the information available to them falls into four bins: what they already know (and believe), information that should be added to knowledge or changes to knowledge relative to what they already know, how to add and change knowledge, and why it is worthwhile to make those changes that way. For brevity, I label these knowledge, goals, processes, and motivations. In every instructional setting and any medium, I theorize learners choose goals they pursue, decide which processes they use to operate on information, and select motivations to animate their work. They self-regulate learning. Because learners self-regulate learning, instruction does not cause learning. It guides self-regulating learning. From this background and given today's excitement and anticipations about AI, I explore this question: How can AI help self-regulated learners learn? Here is the gist of my answer. AI has potential to design better instruction than instructors but AI cannot boost learning beyond what self-regulating learners can achieve. So, while AI might augment and, in some situations, perhaps replace human-engineered instruction, the most effective role for AI is helping learners self-regulate learning more productively. I sketch what this might look like and factors I predict need attention if we follow that path.

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Hybrid intelligence: a new research paradigm for educational research

Mar Pérez-Sanagustín (Université de Toulouse, France)

Generative Artificial Intelligence (Gen AI) tools, and in particular those based on Large Language Models (LLMs) such as the popular ChatGPT, have been rapidly adopted by university students (Kuhail et al., 2023). Our students are already using ChatGPT to write their essays or solve programming exercises. But is this tool actually supporting learning? This question has sparked debate, and we still do not know the answer. However, for better or for worse, Gen AI is here to stay, and its usage across domains is inevitable. For me, the adoption of AI LLMs is accelerating the shift toward a new learning paradigm in which learners hybridize with AI. Learning is the process of acquiring new knowledge, skills and abilities from experience and practice. In these hybrid scenarios, I view AI not merely as a tool for humans but as a partner to collaborate with in their learning journey. Together, the learner, teacher, and AI constitute the entities of a unique integrated Hybrid Intelligence System, wherein the individual competencies of each are amplified. How can we leverage these systems to enhance learning and advance our research in educational sciences? These are among the questions I will address in my talk.

Artificial intelligence, real learning

Jeff Greene (University of North Carolina, USA)

Many have been understandably excited about the capacities of ChatGPT and other artificial intelligence-driven technologies. Machine learning techniques drive artificial intelligence, and those techniques have been driving innovation in learning analytics for many years prior to current chat-based technologies. In this keynote, I will discuss how artificial intelligence techniques can be used to understand and promote real learning outcomes, via learning analytics. I will also discuss learning analytics' strengths, limitations, and ethical concerns, as well as how they relate to ChatGPT and other artificial intelligence technologies.