ICPE 2022 Special Issue (Part 5)

Special Issue Guest Editor:
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This collection of papers represents the fifth part of the collection from the International Conference on Physics Education, which was held in December 2022.

This collection addresses a range of topics in techniques for teaching physics and astronomy as well as how to measure student learning.

Two of the papers included in this issue focus on developing teaching tools to support physics and astronomy learning in a range of contexts. Fernandes et al describe an international project to develop an innovative approach to teaching astronomy to primary-aged children. They show that having students engage in scaffolded observations of the night sky can support students' learning and teachers' confidence in astronomy and provide an exemplar of translating resources for multiple cultural contexts. Jangia and Haverlíková demonstrate that adapting the card game Dixit for classroom use can encourage students to make connections across physics concepts in a fun and engaging way.

The other three papers in this collection focus on approaches to understanding student learning, including that of preservice teachers. Belíssimo and Nardi developed a longitudinal approach to understanding the impact of preservice teachers' education on their epistemology of science and their teaching identities. Intakaew and Wattanakasiwich explore how to use RapidMiner, a data mining tool, to identify patterns in students' answers to a concept inventory. Kota and colleagues detail their development of a survey tool to measure student engagement in science laboratories by examining motivations, emotions, and use of resources.

Taken together, these papers offer new insights into approaches for teaching and research approaches in physics and astronomy. I offer my thanks to all authors and reviewers for their work.