

Investigating the Dimensions of the Scientific Modeling Competence: Practices, Products, and Metamodeling Knowledge

Scientific Modeling is among the main authentic practices carried out by scientists. Students and teachers are expected to engage in models and modeling, and to do so they need to develop their modeling competence. Theoretical conceptualizations structure the modeling competence into three dimensions: meta-modeling knowledge, modeling practice, and modeling products. While each of these dimensions is well researched on its own and the three dimensions are commonly expected to be highly positively related, studies investigating their specific relationships are widely lacking. In this presentation, I will present several of my latest studies aiming to explore these relationships in order to provide researchers and educators better understanding of the modeling competence and means to support students and teachers in developing the modeling competence.