

Contexts and Representations in a Digital Mathematics Environment

Sietske Tacoma

Freudenthal Institute for Science and Mathematics Education

Utrecht University

The Netherlands

The Freudenthal Institute's Digital Mathematics Environment (DME) offers a wide variety of digital applets and instructional sequences for use in mathematics classrooms, and includes many secondary mathematics topics. This environment contains a learner management system, which allows for saving and reviewing student work. Moreover, it contains a powerful authoring tool, in which contexts, representations and tools (i.e. graphing tool, diagrams) can be customized and combined into instructional sequences (i.e., modules) which can offer students meaningful problem situations to develop mathematical understanding. These modules can be used for exploration, instruction, training and assessment. Currently, we are investigating ways to expand the DME to other topics, such as chemistry and physics. This hands-on interactive session will provide an overview of the Digital Mathematics Environment and the ways it is being used in schools. Participants will be given the opportunity to experience several modules in the DME and the first version of the chemistry expansion. In these modules many examples can be found of the possibilities that technology offers for combining contexts, representations, tools and feedback options, to support mathematical and scientific reasoning.