

# Connected working spaces: modelling in the digital age

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## **Abstract:**

In mathematics education, many researchers consider modelling as a “translation between reality and mathematics” restricting the potential of modelling activities with regard to the diversity of approaches to a given reality, especially those allowed by technology, and the rich connections they can help students build between various fields of knowledge.

From epistemological studies, I stress that modelling is not merely mathematizing: for a given reality, there is a plurality of approaches and models, and mathematical work is done in close conjunction with work in other scientific experimental fields.

Considering a plurality of models of a given reality, each pertaining to a specific scientific field, I take advantage of the notion of working space in order to make sense of modelling activities. I give the example of 12th grade students modelling a suspension bridge. Students work on four models and make connections between the associated working spaces: a physical model (mock-up) with instruments and rules of physics, a geometrical model explored in paper/pencil, a dynamic simulation involving computer programming and a dynamic functional model with the help of computer algebra.