

Supporting inquiry and modeling with interactive drawings

Creating models is at the heart of any scientific endeavor and therefore should have a place in science curricula. However, creating computer-based models faces resistance in early science education because of the difficulty to create the formal representations required by computational systems. In this keynote I will present SimSketch, an approach to integrate the creation of drawing into the process of inquiry and modeling. In SimSketch, drawings are used by learners to represent their ideas about phenomena they investigate. Assisted by the learner, SimSketch converts these drawings to computational models, that generate animations that behave according to the learner's specification. Children in age ranging from 8 until 15 have used SimSketch in several domains: astronomy, traffic and biology. I will report on the results of these studies in terms of the effect on domain knowledge as well as scientific skills and attitudes.

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