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Modelling dynamic systems in chemistry: the design and evaluation of a teaching module about laundry cleaning. (Modelleren von dynamische systemen in de scheikunde: Ontwerp en evaluatie van een onderwijsmodule over wassen van textiel.)

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In the last phase of secondary school students are not only expected to understand some scientific models used in chemistry, but also to have insight in the development and function of models. To reach this kind of fundamental understanding it is desirable that students themselves participate actively in the process of model development. For this purpose computer models of dynamic systems seem to offer more opportunities than models of atoms and molecules which are widely used in chemistry education. We developed education in which students construct and evaluate models of chemical processes with use of a graphical modeling tool. This article describes the ability of different chemical processes. This comparison resulted in the 'Washing of Textiles' as most promising. We tested the developed education in the classroom and investigated to what extent the development and function of models were brought into practice by students. The developed education appeared practically realizable in the classroom. Further improvement is needed on the reflection on the development and function of models. This can be achieved by providing students a content specific motive to construct a model, a deeper student understanding of the used graphical modeling tool and a teacher able to support the modeling processes of students.

Classification: M64