The Model of Educational Reconstruction
A Framework for improving teaching and learning science

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Abstract. *The Model of Educational Reconstruction (MER) provides a frame for research of subject related learning and teaching. By closely linking theory and practice the model aims at the development of learning and teaching sequences. Within the framework of the model three central tasks of science education are investigated: firstly, the clarification and analysis of science subject matter (e.g. in the field of evolution, energy or combustion), secondly, the investigation into students' perspectives with regard to phenomena related to the chosen subject (e.g. conceptions, skills or interests), thirdly, the design of learning environments (e.g. instructional materials, learning activities, lessons or learning sequences). The investigations are carried out empirically and thus are structured by research questions, methods, and findings. But there is no way of solving these three modes of investigation as single tasks one by one. Each of the investigations depends on the findings of the other two; all of the tasks are interrelated and have to be linked closely. The Model of Educational Reconstruction also guides the creative designing process and leads to empirically based proposals for teaching designs and promises for learning about science topics.*
The major features of the MER will be outlined by referring to examples of educational reconstruction of the energy concept, of modelling in science, and of non-linear systems. In addition participants will work on their own examples in small groups. The most recent overview article on the model as well as the Powerpointpresentation used will be available for the participants as data files also.

Keywords. Cconstructivist view, Instructional planning and design; Teaching and learning science, Educational reconstruction

Reinders Duit (2010). **The Model of Educational Reconstruction A Framework for improving teaching and learning science** M. Kalogiannakis, D. Stavrou & P. Michaelidis (Eds.) *Proceedings of the 7th International Conference on Hands-on Science.* 25-31 July 2010, Rethymno-Crete, pp. 42 **http://www.clab.edc.uoc.gr/HSci2010**