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Educational diagnosis of mental models: assessment problems and technology-based solutions.

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This article focuses on central problems of the educational diagnosis of the learning-dependent progression of mental models. Thus, its main purpose is to describe assessment problems concerning the diagnosis of mental model progression in dependence on changing situations of teaching; to describe related problems of controlling the reliability and validity of ‘measurements of change’ as they are involved necessarily in the diagnosis of mental model progression; and to elucidate the appropriateness of causal diagrams as a method to measure ‘subjective causal models’ (discussed in terms of mental models) and their learning-dependent changes. Accordingly, causal diagrams are discussed with regard to the assessment of knowledge transitions and to their validation through structure equation models. Following a short description of procedures to control reliability and validity of causal diagrams, several problems to be still solved are sketched with regard to the educational diagnosis of subjective causal models with the help of causal diagrams.

Classification: D60