

DYNAMIC SYSTEMS AND THEIR IMPORTANCE IN COMPETENCE ASSESSMENT OF PROBLEM SOLVING

Joachim Funke, Samuel Greiff
Department of Psychology, University of Heidelberg

Keywords: problem solving; assessment

In PISA 2012, dynamic problem solving will take special attention for at least three reasons: (a) It is an additional option for countries (46 out of 68 voted for it), (b) it is for the first time computer-based, and (c) problem solving is understood as Interactive Problem Solving and uses dynamic systems. In our presentation, we focus on the dynamic systems approach for competence assessment. Interactive problem solving requires from participants to explore and control minimal complex systems like remote control, mobile phone, or home appliances. To model such systems, we use the formalisms of structural equation systems and finite state automata. With both approaches, a psychometrically sound assessment of the three theoretically derived competencies „information search”, „model building”, and „forecasting” is possible and useful for the description of interactive problem solving.