

A DEVELOPMENTAL MODEL OF ARITHMETIC COMPETENCIES IN AGE 4–8

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A common theme of conceptualizing competence and developmental models is to find hierarchical structures of abilities, which can be interpreted as developmental lines. Such a developmental sequence based on when certain concepts are usually understood and how they are based on each other, would allow to describe and understand the arithmetical development of children. It would allow age cohort comparison and would thus help to find out whether children are accelerated, normal or retarded. In the following is an effort of doing such modeling and its empirical coverage concerning arithmetical learning for children aged 4 to 8 years. A main question was to find out which concepts are basal for the understanding of mathematics. Based on literature and empirical results concerning arithmetical learning a five level model was created (*Fritz & Ricken, 2008*). This first talk shall introduce the theoretical foundation of this model and the empirical findings for cross-sectional and longitudinal studies. In consequent talks, Antje Ehlert and Petra Langhorst will present the diagnostic procedures and the training program, which are based on the model.

Fritz, A. & Ricken, G. (2008): *Rechenschwäche*. München, Basel: Reinhardt.

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