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Mathematical situations of play and exploration as an empirical research instrument.

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Summary: Mathematical situations of play and exploration are used as an empirical research instrument in the long-term study early steps in mathematics learning (erStMaL) in the Individual Development and Adaptive Education of Children at Risk (IDeA) Research Center in Frankfurt am Main. In these mathematical conversation situations, impulses of the guiding adult and of the materials are the starting point of the interaction. In the area of tension between instruction and construction, spaces of experience and action emerge for children. A comparability of the situations in the research context is achieved by an especially developed description grid in the form of “design patterns of mathematical situations”. This manner of instruction offers the guiding adult, in addition to the clear structuring, freedom for the staging of the mathematical situations of play and exploration.

Classification: U61 U62 D31 D32 C31 C32

Keywords: long-term study; learning environment; mathematical culture; childlike world; exploration; children’s play; teaching aids

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