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Fostering Young children's spatial structuring ability.

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Summary: Insight into spatial structures (e.g., dice dot configurations or double structures) is important for learning numerical procedures such as determining, comparing and operating with quantities. Using design research, a hypothetical learning trajectory was developed and an instruction experiment was performed to gain a better understanding of how young children's (aged 4-6 years) spatial structuring ability may be fostered. In this paper we highlight the role of an overarching context in influencing the effectiveness of the instructional setting. The context that was designed for this instruction experiment created opportunities for the children and teacher to focus on spatial structuring in a sequence of instruction activities. The analyses suggest that children benefited from having participated in the instruction activities. In particular, the overarching context helped them to gain awareness of spatial structures and to learn to use spatial structuring strategies rather than unitary counting procedures. This emphasizes the importance of acknowledging spatial structure in early educational practice for cultivating young children's mathematical development.

Classification: C31 G21 F21
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