Articulation of spatial and geometrical knowledge in problem solving with technology at primary school.

Summary: Our paper focuses on the relationship between spatial and geometrical knowledge in problem solving situations at primary school. We have created tasks that involve three different spaces: physical space, graphical space and geometrical space. We aim to study the specific role of graphical space as a bridge between the other two spaces using paper and pencil and digital technology. We resort to the idea of dimensional deconstruction to design the tasks and to characterize the geometrical reasoning in pupils’ problem solving processes. We organized a class-based intervention with 7-year-old pupils to experiment a spatial problem involving the use of a grid and Cabri Elem e-book.

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Keywords: geometrical knowledge; spatial knowledge; problem solving; digital technology; paper and pencil tasks

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