Multimodal interaction for science learning in preschool: Conceptual development with external tools across a science project

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A Swedish preschool deparment consisting of 22 children.

## Implications For Educators About

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# Abstract

This paper studies the scaffolding of conceptual development for children aged 4–5 years old during a science project at a Swedish preschool. It specifically examines how bodily knowledge and language are used in interaction, and how conceptual knowledge can be scaffolded with the use of external tools and artefacts. The science project was tracked for seven weeks and the analytical focus is on situations where a computer and a projected screen are used. The study shows how interactions afforded by the set-up provide a virtual-physical setting where teachers and children can interact using both language and bodily modes. As such, it provided an interactional space where teachers can scaffold children’s tactile understandings towards conceptual knowledge by building on the children’s prior experiences, and knowledge is cumulated over time during the project. This is accomplished by focusing attention on the topic and through the use of tools in interaction. Possible implications and uses for early childhood education are discussed in the light of these results.

# Outcome

"The interactions involved in [the] scaffolding are shown to be complex as they blend the children’s playful and tacit knowledge about spinning with dialogues using more abstract concepts.... [P]reschool science discourse is as much about doing as talking....Digital tools can, together with other means of pedagogical interaction, provide experiences that are added to over the course of time, scaffolded, and further amassed to provide more conceptually conscious ways for children to view their world." (Author, 266, 268)