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The role of gestures in making connections between space and shape aspects and their verbal representations in the early years: findings from a case study.

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Summary: In recent educational research, it is well acknowledged that gestures are an important source of developing abstract thinking in early childhood and can serve as an additional window to the mind of the developing child. The present paper reports on a case study which explores the function of gestures in a geometrical activity at kindergarten level. In the study, the spontaneous gestures of the child are investigated, as well as the influence of the teacher's gestures on the child's gestures. In the first part of the activity, the child under study transforms a spatial array of blocks she has constructed by herself into a verbal description, so that another person, i.e., the teacher, who cannot see what the child has built, makes the same construction. Next, the teacher builds a new construction and describes it so that the child can build it. Hereafter, it is again the turn of the child to build another construction and describe it to the teacher. The child was found to spontaneously use iconic and deictic gestures throughout the whole activity. These gestures, and primarily the iconic ones, helped her make apparent different space and shape aspects of the constructions. Along with her speech, gestures acted as semiotic means of objectification to successfully accomplish the task. The teacher's gestures were found to influence the child's gestures when describing aspects of shapes and spatial relationships between shapes. This influence results in either mimicking or extending the teacher's gestures. These findings are discussed and implications for further research are drawn.

Classification: C51 G21

Keywords: kindergartner; spatial concepts; shape concepts; gestures; verbal descriptions; microgenetic analysis

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