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**Uncovering algebra: sense making and property noticing.**

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Summary: This paper articulates a perspective on learning to discuss ways in which students develop personal sense and negotiate meaning in a middle school algebra context. Building on a sociocultural perspective that incorporates mental objects, learning is described as a mutually dependent process involving personal sense making and the public negotiation of meaning. Analysis of student problem solving is focused on the development of taken-as-shared meaning through an individual and collaborative analysis of the properties of various conceptual entities. The results suggest that functional properties inherent in linear relationships were more supportive in eliciting meaning making exchanges than were algebraic properties associated with generalized arithmetic, although the contextual nature of the linear tasks may have also supported the meaning making activity.

*Classification:* C30 D40 D50

*Keywords:* problem solving; pair work; interviews; empirical investigations; research; elementary algebra; functions; grade 7; grade 8; collaborative learning