

ZMATH 2001a.00648

Slavit, David

Learning as sense-making and property-noticing.

Dossey, John A. et al., Proceedings of the nineteenth annual meeting: Psychology of mathematics education (PME-NA XIX). Vol. 2. ,. 649-656 (1997).

This paper outlines a framework for studying student learning and understanding. Building on a sociocultural perspective of learning that incorporates an alternative to the theory of reification, learning is described as a mutually dependent process involving personal sense making and the public negotiation of meaning, mediated by the acts of reflection and communication. The development of taken-as-shared meaning is, in part, a process of building knowledge structures through the establishment of understandings of properties of various conceptual entities. The latter understandings are a result of personal reflection and the negotiation of meaning through the act of communication. Hence, sense making and meaning making occur collectively and dependently. Results from a study discuss the kinds of algebraic thought present in the different solution strategies of 7th and 8th grade students. Analysis centered on the development of functional reasoning and the ability to abstract computation to an algebraic mode. Specifically, the analysis focused on the kinds of mathematical objects and ideas that arose during student-student talk, with particular attention to the personal and taken-as-shared nature of the properties that helped to define these objects. These data are used to provide empirical support for the framework. (Abstract)

Classification: H23