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Nathan, Mitchell J.; Eilam, Billie; Kim, Suyeon

To disagree, we must also agree: How intersubjectivity structures and perpetuates discourse in a mathematics classroom.

J. Learn. Sci. 16, No. 4, 523-568 (2007).

Summary: Learning in a socially mediated context like a classroom places emphasis on the ability of learners to communicate their ideas to others, and for members of a class to achieve shared meaning or intersubjectivity (IS). We take a participatory view of IS, where both consensual agreement and disagreement are regarded as aspects of a common set of processes that mediate collective activity. Interlocutors need not demonstrate convergence toward a common idea or solution to exhibit IS and, indeed, they appear to need a shared understanding to express substantive disagreement through divergent views. Multilevel, multimodal analyses of videotape of a middle school mathematics classroom, including speech, gestures, drawing, and object use, reveal a discourse that is organized into recurrent sequences of event triads. The dynamics toward and away from convergent ideas appears to be instrumental in fostering sustained and engaging discourse and influencing the representations that students propose during problem solving. Participants frequently exhibited IS, but, as allowed for in the participatory view, the interactions did not seem to convert many students from their initial interpretations. Instead, disagreements and a desire to establish common understanding appeared to lead participants to express their divergent views in more refined and accessible ways. Advancement of our understanding of the role that IS serves in socially mediated learning has the potential to inform both educational theory and emerging areas in embodied cognition and cognitive neuroscience that addresses imitation and empathy, and thus help to bridge research between brain function and social cognition.

Classification: C60 C70 D40

Keywords: social cognition; brain; empathy; mathematics; imitation; interpersonal relationship; educational environment; problem solving; constructivism (learning); discourse analysis; interrater reliability; middle school students; lower secondary; research; sociocultural aspects; communication; student student interaction; cooperative learning; intersubjectivity; classroom conversation