

ZMATH 2005d.01412

Rasmussen, Chris; Nemirovsky, Ricardo; Olszewski, Jennifer; Dost, Kevin; Johnson, James L.
On forms of knowing: The role of bodily activity and tools in mathematical learning.

Educ. Stud. Math. 57, No. 3, 313-316 (2004).

In this paper, the authors characterize how bodily activity and emerging tool fluency combine in mathematical learning and how this combination suggests an alternative view on the nature of knowing. In particular, they develop the idea of knowing-with, which characterizes aspects of meaning making as it relates to developing expertise with tools. The analysis examines a total of eight, 90-120 minute open-ended individual interviews with three undergraduate students. Each student had completed three semesters of calculus and had taken or was taking differential equations. In the interview students worked with a physical device called the "water wheel" that was first used in an earlier study with high school students to investigate their intuitive ideas of chaotic behavior.

Classification: C30 M50