

# "The Coat Traps All Your Body Heat": Heterogeneity as Fundamental to Learning

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—(2010) *The Journal of the Learning Sciences*, 19:3, 322 - 357.

## Summary

This article explores heterogeneity as fundamental to learning. Inspired by Bakhtin's notion of heteroglossia, a design team consisting of an experienced classroom teacher and 2 researchers investigated how a class of 3rd and 4th graders came to understand disciplinary points of view on heat, heat transfer, and the particulate nature of matter. Through a series of planned and unplanned encounters, official versions of the Second Law of Thermodynamics and the particulate view of matter were juxtaposed with varied domains of experience of heat transfer and phase change in water. We analyze the children's discourse to examine how they populated these phenomena with meaning and what they learned in the process. We conclude by describing key principles and a conundrum that emerged from this research.

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