

## Using A Naturalistic Paradigm and Ethnographic Methods for Research in Mathematics Education

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### Abstract

This session will provide an introduction to integrating a naturalistic paradigm and ethnographic methods into research in mathematics education. The session will address methodological issues specific to designing and conducting research in mathematics education that is framed by a naturalistic paradigm and uses ethnographic methods. The workshop will include a combination of lecture, small group discussions, and other activities to address the following questions:

- 1) What is a naturalistic paradigm? What principles guide research studies using a naturalistic paradigm? How can a naturalistic paradigm be combined with other research approaches to explore questions about mathematical thinking and learning?
- 2) What are ethnographic methods? What is the difference between doing “an ethnography” and using ethnographic methods? How can researchers use ethnographic methods to investigate aspects of mathematical thinking and learning? What are central methodological concepts related to ethnographic methods?
- 3) Why use ethnographic methods for research in mathematics education? How can researchers learn to use ethnographic methods for research in mathematics education?

A naturalistic paradigm is not the methods used or the place where data are collected but by a theoretical stance and a set of research principles (Moschkovich, 2019; Moschkovich & Brenner, 2000). The theoretical stance can be summarized as the assumption that meaning is socially constructed and negotiated in practice. The research principles include considering multiple viewpoints, studying cognition in context, and connecting theory generation and verification. These principles derive in large part from ethnography, a methodology (not a collection of methods) closely connected to the theoretical principles of anthropology, such as the centrality of the concept of culture (Spindler & Spindler, 1987). In the presentation part of the session, I will review the main principles for using a naturalistic paradigm, describe two studies framed by this paradigm that integrated ethnographic and cognitive methods, discuss important issues to consider when using ethnographic methods, describe how ethnographic methods can be integrated in complementary ways into research design, and examine what this integration can contribute to mathematics education research. The session will also include small group discussions grounded in a video clip and other activities.

### References

Moschkovich, J. N. (2019). A naturalistic paradigm: An introduction to using ethnographic methods for research in mathematics education. In G. Kaiser & N. Presmeg (Eds.) *Compendium for Early Career Researchers in Mathematics Education*. Dordrecht: Springer.

Moschkovich, J.N. and Brenner, M. (2000). Integrating a naturalistic paradigm into research on mathematics and science cognition and learning. In R. Lesh & A. Kelly (Eds.). *Handbook of Research Design in Mathematics & Science Education*. New Jersey: Lawrence Erlbaum Associates, Inc: New Jersey, 457-486.

Spindler, G. & Spindler, L. (1987). Ethnography: An anthropological view. In G. Spindler (Ed.), *Education and cultural process*, (pp. 151-156). Prospect Heights, IL: Waveland.