An Overview of Current Mathematics Education Research in Group Theory

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Abstract: In this talk, I present a survey of current work related to three strands of mathematics education research in modern algebra: curriculum design, student understanding, and the teaching of modern algebra. I will spend some time introducing the Teaching Abstract Algebra for Understanding (TAAFU) curriculum, a research-based curriculum aiming to have students reinvent key ideas in group theory. I will then discuss current research about students and teaching in modern algebra in terms of what exists, what is currently being done, and where we might go next as a field. We have a number of open questions about the teaching and learning of this subject, and I hope to promote discussion around avenues for further inquiry.

Dr. Melhuish is an assistant professor at Texas State University specializing in mathematics education. She completed her PhD at Portland State University. She spent the last year working as postdoctoral research fellow with a professional development organization, Teachers Development Group. Her current research interests include: teacher conceptions around mathematical reasoning forms, evaluating the efficacy of professional development, and measuring conceptual understanding in abstract algebra.