

# TRANSFORMING MATHEMATICS TEACHER EDUCATION

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What is critical for mathematics teaching and teacher education in our current, assessment-driven environment? Recently public education has come to the forefront of political decision-making, particularly with regard to preparation of teachers. In this session, we explore how to align mathematics teacher education programs with a consistent message that incorporates all *voices* (e.g., political, research, and school). Specifically, we will initiate dialogue around conceptual underpinnings of a developing framework grounded in previous work in teacher education (e.g., Zeichner, 1983), as well as our research. Although research suggests educational strategies and approaches, it fails to provide a well-developed theoretical basis for mathematics teacher education (Grouws & Schultz, 1996). As part of this discussion, we will share the complexities that emerged from our longitudinal research. We aim to contribute to what is understood about how to conceptualize a *coherent whole* experience that focuses on mathematical understanding (for the novice teachers, as well as students) and reform-aligned practice, yet also addresses conflicting voices.

As mathematics teacher educators and researchers we strive to create an experience that is viewed as a process and encompasses the whole student through their beliefs, rationales, context and knowledge (Holt-Reynolds, 1991). Our research is integral to our teaching and continual program redesign. Our research-based secondary programs provide opportunities for prospective teachers to synthesize theory, practice, and a multiplicity of voices, thus allowing them to expand their ways of knowing mathematics and visions of mathematics teaching and learning. Their actions within the disparate cultures of their university classrooms, early field experiences, and first years of teaching experiences highlight the complex and highly individualized nature of the transformative process of becoming a mathematics teacher.

Findings presented will provide direction for further study. They move us toward a theoretical perspective that will not only further our understanding of psychological aspects inherent in the process, but will also lead to improvements in mathematics teacher education that will impact students' mathematical understanding.

## References

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