



# Washington State University

## College of Education, Sport and Human Sciences

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Will defend their dissertation on

Date: June 10, 2026

Time: 9:30 A.M.

Tri-Cities Campus: Elson Floyd Building, Room 247

Title:

## **PRE-SERVICE TEACHERS' REAPPRAISALS OF MATHEMATICAL STRUGGLE AND CAPABILITY**

Co-Chairs: Judy Morrison and Ethan Smith

Abstract:

Pre-service teachers often enter mathematics methods courses with prior experiences of struggle, self-doubt, and fixed beliefs about mathematical capability. These experiences matter because they can shape how future teachers interpret their own mathematical learning and how they may later respond to students' struggles, mistakes, and help-seeking. This qualitative case study examined how undergraduate pre-service teachers in an elementary mathematics methods course responded to personal narratives of mathematical struggle and engaged with guided reflection and cognitive reappraisal strategies. Data sources included pre- and post-questionnaires, in-class worksheets, homework reflections, and transcripts from classroom discussions. Findings showed that the biggest impacts of personal narratives were that they validated and normalized struggles in mathematics, revealed the emotional impact of ability as defined by performance, and helped participants reflect on how mathematical self-concept can be protected in future teaching. Guided reflection and reappraisal activities supported participants to identify and interrupt negative self-talk, begin to regulate emotional responses to mathematical challenges, and reframe help-seeking as part of learning, rather than weakness. Participants also articulated mathematical capability in more growth-oriented terms, emphasizing effort, persistence, practice, support, and time rather than natural ability alone. The results also showed individual differences, with reappraisal facilitating observable changes in interpretation for some, but for others it reinforced existing beliefs, increased awareness, or was, to some extent, partial and emotionally incomplete. This study contributes to mathematics teacher education by showing how narrative-based reappraisal can be embedded within a mathematics methods course to support pre-service teachers' reflections on mathematical struggle and capability. Findings suggest that shared personal narratives and guided reappraisal activities can help pre-service teachers normalize struggle, recognize negative thought patterns, and reconsider struggle, mistakes, and help-seeking as part of learning.