

1163-97-460

**Cody L Patterson\*** (codypatterson@txstate.edu), Department of Mathematics, Texas State University, 601 University Drive, San Marcos, TX 78666. *Looking inside the black box: Thinking about procedures for solving equations in a capstone course for secondary teachers.*

I will share some tasks that I have used in a capstone course for preservice secondary teachers to gain insight about how prospective teachers think about procedures commonly used to solve equations and systems. One goal of this part of the course is to help teachers better understand the conceptual underpinnings of these procedures, and equip them to explain structural features that often prove surprising or confusing for students, such as "setting each factor equal to zero" when solving a quadratic equation, "extraneous solutions" when solving a radical equation, and special cases for systems of linear equations. I will discuss some challenges that regularly occur when we delve into this topic, and share some new research that may provide insight into these challenges. (Received September 07, 2020)