**An Investigation of Preservice Elementary School Teachers' Understanding of Number Concepts.**


**Abstract**

*The purpose of this study is to investigate how preservice elementary school teachers' (PSTs) understanding of number develops. Preservice elementary school teachers (PSTs) have been shown to lack the understanding of multidigit whole numbers necessary to teach in ways that empower students mathematically. Building on a framework of PSTs' conceptions (Thanheiser, 2005) I designed activities to help PSTs develop a more sophisticated understanding of number. I engaged six PSTs in a one-week summer teaching experiment designed to help them develop a more sophisticated understanding. Preliminary results of pre- and post assessments show that all PSTs developed a more sophisticated understanding of number, however not all PSTs developed their understanding equally. In this study I aim to understand how each PST's understanding developed, identify critical moments for individual PSTs as well as for groups of PSTs, and trace each PST's (as well as the groups') understanding throughout the teaching sessions. This analysis will be applied to data collected in a whole class setting using the same tasks. Results of this study will aid in our knowledge of what makes understanding numbers so difficult for students and assist us in helping them develop more sophisticated understandings in our courses for preservice teachers.*