

# TRAJECTORIES OF TEACHER EFFICACY AND ITS SOURCES

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Mathematics teaching and learning courses in teacher preparation programs provide the opportunities for preservice teachers to consolidate their knowledge of mathematics into mathematical knowledge for teaching (e.g., Ball, Hoover Thames, & Phelps, 2008). An important outcome of these courses is the changing of teachers' beliefs about what it means to teach so that others can learn. The purpose of this study was to inquire into secondary school preservice mathematics teachers' teacher efficacy (a teacher's belief in her or his capability to affect student outcomes) and the interactions of teacher efficacy with the sources of teacher efficacy (mastery experience, vicarious experience, verbal persuasion, and affective and physiological states) and teachers' concerns (Self, Task, and Impact – their perceived problems or worries of the teaching and learning of mathematics).

This mixed method study explored three complete teacher preparation program years with an aggregate of 100 preservice teacher participants. The Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001), and open response question data were collected four times each year. The TSES contains three subscales; instructional strategies (IS), student engagement (SE), and classroom management (CM). A combination of repeated-measures ANOVAs over time and constant comparative analysis were used in the analyses of the data for each year.

In all three program years, the findings indicate that teacher efficacy demonstrated significant increases, with details such as, SE decreased in the first quarter, IS was highest at the end, and CM was the lowest at the start. Throughout each program any combination of concerns with Impact was consistently least present. Additionally, Mastery Experiences appeared rarely at the beginning of the program but became a dominant source at the end. Conversely, the Affective/Physiological source was higher at the beginning with a large drop right away, ending low. Further details will be presented in the poster.

Inferences from these analyses suggest opportunities for the positioning of course and program aspects in relation to student readiness for learning new skills, and there may be improved benefits for inservice teacher learning with immediate and ongoing teacher professional learning in a programmatic and intentional manner.

## References

- Ball, D. L., Hoover Thames, M., & Phelps, G. C. (2008). Content knowledge for teaching. *Journal of Teacher Education*, 59(5), 389-407.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.