

# ATTRIBUTES OF GOOD MATHEMATICS TEACHING: WHEN ARE THEY LEARNED?

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*Perhaps deep content knowledge did not come during required mathematics courses in a preparation program.*

*Perhaps completing written assignments and videotape analyses had little to do with learning reflection.*

*Perhaps leading a classroom discussion had little to do with techniques from a particular teacher or course.*

*Perhaps four years of learning theories and methods had little to do with the ability to implement them.*

## Research Questions

- 1) To what factors or experiences would beginning secondary mathematics teachers from an undergraduate program and an alternative certification program attribute the success of their first year teaching?
- 2) To what degree were these significant attributes or experiences learned pre-program, during program, or post-program?

## Two Populations

*Alternative Certification program from LAUSD (Los Angeles, California)*

The organization of this program was four weeks of classes during the summer, plus meetings throughout the first year teaching; the field experience time was ~15 days; beginning teachers were typically graduates and career changers; preparation for teaching in LAUSD, Title I schools

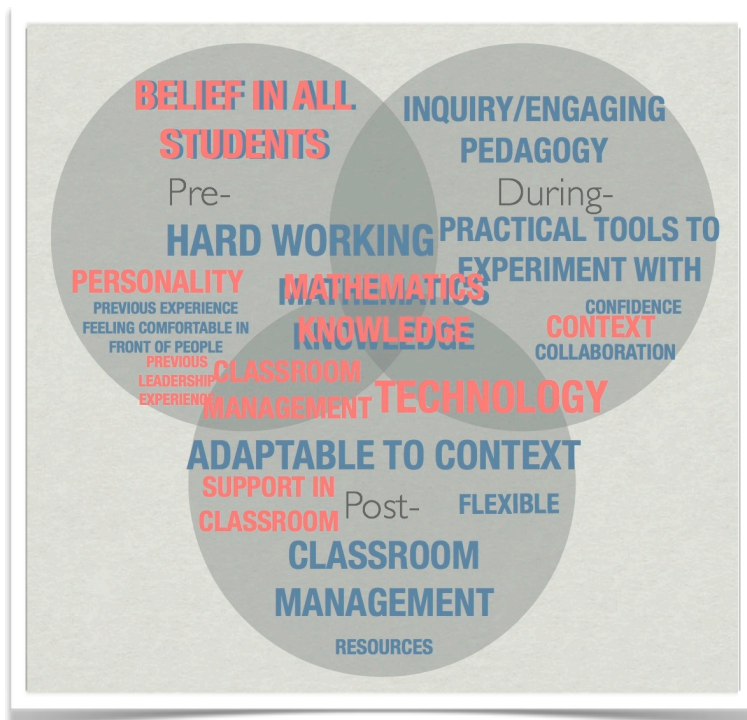
*Undergraduate program in Texas*

The organization of this program was throughout a four year undergraduate degree, majoring in math with eight education courses; the field experiences throughout the program were ~115 days; beginning teachers were typically recent graduates; preparation for teaching at any school

*Interview Selection Criteria*

- 1) Nominations from knowledgeable teacher educators;
- 2) High mathematics GPA
- 3) Previous leadership experience

## Summary of Findings



Blue: Undergraduate program (TX); Red: Alternative program (CA)

## Summary of Main Discussion Points

- Both populations of beginning secondary mathematics teachers, despite different teacher preparation programs, reported similar factors as “most important” for beginning success
  - These indicators concerned the internal day-to-day work of teaching, such as engaging students, managing a classroom, and desiring to grow professionally, as opposed to external feedback, such as students’ performance on standardized tests
  - This result reiterates Fuller and Brown’s (1975) four stages of development for beginning teachers
- Both populations contributed to an understanding of what can be achieved during teacher preparation
  - From the undergraduate program, teachers can learn effective pedagogy, practical tools for the classroom, confidence in teaching, and collaboration
  - From the alternative certification, teachers can learn to contextualize their teaching
- Both populations inform that characteristics such as believing in all students’ abilities to learn and being hard-working were attributes beginning teachers valued for overcoming the challenges associated with the transition to classroom teaching
- Both populations discussed that their development of the mathematical content knowledge for teaching developed not just pre- and during a program, but also post-program, while teaching in the classroom. In particular, they gained different types of content knowledge (each important) during the three time periods.