Chapter 3
Recruiting Teachers of Mathematics
Lessons From an Alternative Route to Licensure

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ABSTRACT

Calls for recruitment and retention into teaching remain at all-time highs in math and science. Response initiatives may include alternative routes to licensure (ARL), streamlined curricula, financial incentives for participants, and intensive on-the-job training. While ARLs offer potential for innovation, challenges also exist when trying to maintain preparation quality and integrity. This project presents end-of-program findings from a five-year investigation into the factors that contribute to quality teacher preparation within an ARL framework. Summative outcomes document program dimensions where research-intensive preparation goals align with priorities for increasing the pool of future teachers. The roles of teacher mentors, curriculum impact, and classroom-based practica are highlighted.

INTRODUCTION

Calls for increased attention to the recruitment and retention of teachers remain persistent (Aragon, 2016; Ingersoll, 2011; Ingersoll & Perda, 2010; Papay, Bacher-Hicks, Page, & Marinell, 2017; Rich, 2015). While many recruiting efforts reside within the higher education settings, attached to a bachelor's or master's degree pathway, "alternative programs" have gained traction (e.g., Math for America, Teach for America, Utah State Board of Education, 2017). Programmatic characteristics often include

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streamlined curricula, limited courses, financial incentives for participation, and intensive on-the-job training opportunities.

While recruitment and retention efforts are expanding, preparation must also ensure quality varied credentialing experience (Desimone & Long, 2010; Foote, Brantlinger, Haydar, Smith, & González, 2011; Heilig & Jez, 2010; Walsh & Jacobs, 2007). The goal of quality preparation is particularly important because many responses to teacher shortages such as Alternative Routes to Licensure (ARL) have had mixed results to date, including variance in program experiences, retention outcomes among graduates, and impact on diverse communities (Heilig & Jez, 2010; Laczko-Kerr & Berliner, 2002; Sass, 2013). Moreover, higher education settings recognize that adequate preparation of teachers, prior to entering the field, is necessary particularly because first-year teachers who arrive to the classroom underprepared are less effective and less likely to remain in the field, over time (Clotfelter, Ladd, & Vigdor, 2010; Goldrick, Osta, Barlin, & Burn, 2012).

This study highlights a summative analysis from a five-year investigation into the nuanced factors that contributed to teacher preparation in one university-based ARL program. Where Year 1 included program development and a streamlined pilot year, outcomes from Years 2-5 document components of an ARL program including both the merits and the limitations of efforts to recruit teachers. These finding are particularly critical within the context of climate, which forces efficiencies to increase and strengthening the pool of future teachers in science and math. Data include outcomes from years two through five of our work.

Project results suggest several programmatic strengths including overall curriculum adaptations, dedicated field experiences, mentoring and relationship building, and ongoing professional development. Findings also include several areas identified as in need of improvement (e.g. curriculum nuances, practicum experiences with diverse students, and opportunities for work with families and communities).

BACKGROUND

Debates regarding teacher quality and what counts as quality preparation have increased over the past two decades. In an attempt to resolve these debates, policy mandates, such as No Child Left Behind Act (2002) outlined the qualifications of those working in schools and the standards by which they are deemed qualified. Attention to the linkages between content knowledge and pedagogy became central to examinations of preparation and program quality (National Mathematics Advisory Panel, 2008) and have remained central within national conversations. Moreover, quality indicators have expanded to more comprehensive evaluations that include teacher preparation programs and their impact on teaching and learning (Dillon & Silva, 2011; Eaton, 2011; National Council on Teacher Quality, 2014; 2017).

Beginning with the premise that teacher quality is a significant predictor of student outcomes, research continues to address program attributes that produce the "best" teachers (Coggshall, Rasmussen, Colton, Milton, & Jacques, 2012; Rice, 2003). A review of research on teacher preparation suggests several characteristics of exemplary programs. For example, evidence suggests that programs must include deliberate preparation dimensions that equip teacher candidates with the skills to deliver content areas in ways that students understand, while simultaneously aligning with curriculum standards (Ball & Forzani, 2010; Ball, Themes, & Phelps, 2008; Ingersoll & Strong, 2011; Ma, 1999).

The need for quality curricula and dedicated attention to pedagogy are commonplace within education communities and are identified as essential for excellence in teaching. Further, beyond the nuances of