

# Teacher Residency as an Alternative Teacher Preparation Program: A Program Review

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## Abstract

Teacher residency programs have emerged as an alternative teacher preparation program that prepares teacher candidates; also known as residents, for high-need areas such as special education in the United States of America. The purpose of this study was to conduct a systematic review of the literature on teacher residency programs in the United States of America. Electronic databases were searched for articles examining teacher residency programs. Forty-five articles met the inclusion criteria. Results from the analysis of the articles and some selected teacher residency programs showed that the most common characteristic of teacher residency programs was a yearlong clinical residency experience. Residents also committed to teaching in a high-need school district upon completion of their programs. The most common goal was to increase teacher retention in high-need schools. Moreover, the programs offered induction support for residents upon completion of their programs. Limitations of teacher residency programs and directions for future research were provided.

**Key Words:** High-need areas, special education, teacher preparation, teacher residency

## Introduction

Traditional teacher preparation programs have historically been comprised of coursework where teacher candidates study abstract concepts through lectures in university classrooms. In addition to coursework, traditional teacher preparation programs typically also require teacher candidates to complete a semester or more of student teaching component in a mentor teacher's classroom. Teacher candidates gradually take responsibility for instruction under the guidance of mentor teachers in these classrooms. This traditional teacher preparation approach has been under scrutiny in the United States of America (USA) for three main reasons. First, traditional teacher preparation programs do not proactively address teacher shortages in the subject areas such as special education, science, and math that schools need (Cowan, Goldhaber, Hayes, & Theobald, 2016; King, Kan, & Aldeman, 2016). Second, traditional teacher preparation program graduates do not reflect the diversity of the student population they serve (LiBetti & Trinidad, 2018). Graduates from traditional programs are primarily White, while the students they serve are only 51% White (United States Census Bureau, 2019). Third, traditional preparation programs cannot assure that teachers will be effective in classrooms (Constantine et al., 2009; Harris & Sass, 2011). Thus, traditional teacher preparation programs in the USA fail to produce high-quality and diverse teachers with expertise in the right subject areas to meet the needs of local schools

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(LiBetti & Trinidad, 2018).

Over the past two decades, the existing landscape of teacher preparation has been changing in the USA. Both universities and independent organizations have been shifting toward a clinical model in teacher preparation to address the limitations of traditional teacher preparation programs. One of these clinical models in teacher preparation is the teacher residency program. The teacher residency programs are a new and developing alternative to traditional teacher preparation programs in the USA (Silva et al., 2014). The first teacher residency models were developed and implemented in Boston, Chicago, and Denver in the early 2000's (LiBetti & Trinidad, 2018; Papay, West, Fullerton, & Kane, 2012). Teacher residency programs have increased in number during the past two decades. Simultaneously, a growing number of publications have been produced about teacher residency programs. The purpose of this study was to review the literature on teacher residency programs in the USA. This review will document existing articles on teacher residency programs as well as assist teacher education programs wishing to develop, adapt, modify, or extend existing characteristics of teacher residency programs.

### **Theoretical Framework and Literature Review**

Traditional university-based teacher preparation programs have been preparing teacher candidates for decades. The existence of these programs is important to produce a sustainable workforce in the education system. Nonetheless, the effectiveness of traditional teacher preparation programs has been debated for decades in the USA. Debates have mainly focused on the effectiveness of traditional programs, on the quality of mentorship provided for teacher candidates, and their ability to produce diverse and effective teachers who will work in high-need schools and areas such as special education, math, and science. Mentorship has been defined as an essential component of teacher preparation programs (Akiba, 2011; Cherian, 2007; Clarke, Triggs, & Nielsen, 2014). However, the quality of mentorship in traditional teacher preparation programs has been criticized because these programs have been less likely to make an attempt to match their teacher candidates with experienced mentor teachers. To illustrate, according to a report from the National Council on Teacher Quality (Cochran-Smith, Keefe, Chang, & Carney, 2018), only about six percent of traditional teacher preparation programs matched their preservice teachers with experienced mentor teachers who could provide an adequate number of observations and feedback. Moreover, many traditional teacher preparation programs did not actively play a role with local school districts in selecting the most appropriate mentor teachers (Cochran-Smith et al., 2018).

Decades-long debates on the effectiveness of traditional teacher preparation programs in preparing high quality teachers has led to the development of alternative teacher preparation programs in the USA. One type of alternative preparation program is

the teacher residency program, which aims to offer a clinically rich teaching experience for teacher candidates. Teacher residency programs are established via partnerships between local school districts and higher education institutions or independent organizations (LiBetti & Trinidad, 2018). They strategically plan on recruiting teacher candidates who already have a bachelor's degree and preparing them to meet the teacher shortages in local school districts (Silva et al., 2014). Teacher candidates receive financial, coaching, mentoring, and induction support in teacher residency programs (LiBetti & Trinidad, 2018). Therefore, teacher residency programs are different from internship or coteaching experiences that are required in traditional teacher preparation programs.

The need for clinically rich teaching experience has been indicated in several reports in the USA. For example, the American Association of Colleges for Teacher Education and the National Council for Accreditation of Teacher Education have issued reports highly emphasizing restructuring university-based teacher education around clinically rich preparation combined with coursework and close partnerships with local school districts (Drake, Moran, Sachs, Angelov, & Wheeler, 2011). The Department of Education funded Teacher Quality Partnership Grants to develop 30 urban teacher residencies in the USA (Silva et al., 2014). Approximately \$300 million was spent to fund the development of urban teacher residencies (Gardiner, 2011). With all this attention from researchers and policy makers, teacher residencies are expected to fill an important gap in teacher preparation. Since their launch in the early 2000's, several teacher residency programs have been developed across the USA. However, a detailed examination of the existing literature is still needed for this topic.

Teacher residencies serve as an important third space in teacher preparation. Teacher residencies carefully screen and hire recent college graduates from education and non-education backgrounds. Individuals who are admitted into programs are also known as residents. These programs follow the medical school training model in which a medical school graduate receives training in a specialized medicine field under supervision as well as diagnosing, managing, and treating different health conditions. They gain direct experience and work under the mentorship of experienced doctors in a chosen field. The term residency is adopted from the medical residency model and "is a reference to the situated learning that is intended to occur in these programs as a result of their apprenticeship structure and preparation of candidates in cohorts" (Beck, 2016, p. 52). Similar to a medical residency model, teacher candidates receive weekly guidance from an experienced mentor teacher, work with an induction coach, have regular meetings with their cohorts for professional development, and are supported by administrators for choosing right teaching environments in teacher residency programs (LiBetti & Trinidad, 2018).

Teacher residencies have a brief history in the field of teacher education. Thus, some researchers argue whether teacher residencies, as a third space teacher prepara-

tion, are improvisational or utopian (Beck, 2016; Klein et al., 2013). To these researchers, teacher residencies may introduce problems for coherence in teacher education due to the involvement of individuals who come from non-education backgrounds in the process. On the other hand, there are growing numbers of studies reporting the potential positive impact of these programs on teacher and student outcomes. For example, Papay, West, Fullerton, and Kane (2012) examined the effectiveness of Boston Teacher Residency (BTR) graduates by comparing these graduates to their peers teaching in Boston Public Schools. The researchers found no statistically significant difference between BTR and non-BTR graduates in the content area of English Languages Arts. BTR graduates had lower performance compared to their non-BTR counterparts in math. However, BTR graduates outperformed their non-BTR counterparts after four-five years of their teaching. The researchers concluded that the impact of teacher residency programs could take years to be noticeable. In another study, Mentzer, Czerniak, and Duckett (2019) compared the effectiveness of two alternative approaches to quality Science Technology Engineering Mathematics teacher preparation programs: Fast-track licensure and embedded residency programs. The researchers found that residents were more confident in their ability to provide quality instruction, preferred inquiry-based instruction more often, and were better prepared for high-needs classrooms. Also, Williamson, Apedoe, and Thomas (2016) found that a teacher residency program was successful in helping residents to develop context-knowledge that allowed them to gain an asset-based perspective toward historically underserved schools and communities in San Francisco.

### **The Purpose and Research Questions**

Urban school districts experience shortages in finding and recruiting teachers for high-need schools in the USA (Ingersoll, 2001). Teachers tend to leave schools serving a high percentage of students from low-income families and minority backgrounds (Scafidi, Sjoquist, & Stinebrickner, 2007). It was estimated that 300,000 new teachers would be needed by 2020 and annual teacher shortages would rise to over 100,000 teachers in the USA (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). Teacher shortages and high attrition rates challenge local school districts in providing the best educational opportunities for students. The needs of school districts vary, and sometimes traditional teacher preparation programs may be limited in addressing local school districts' growing needs, particularly in attracting candidates who will work in high-need areas such as special education, math, and science. Alternative teacher preparation programs have emerged as a response to this growing need and interest, including teacher residency programs. The purpose of this study was to systematically review the literature and some selected teacher residency programs in the USA. This review was intended to examine several aspects of teacher residency programs including their (a) common characteristics, (b) indicators used to measure success of teach-

her residency programs, (c) recruitment and selection processes, (d) financial support for residents, (e) post residency requirements (f), induction supports, and (g) program limitations. The following research questions were answered in this literature review:

Research Question 1: What are common characteristics of teacher residency programs?

Research Question 2: What are the indicators used to measure success of teacher residency programs?

Research Question 3: How do recruitment and selection processes look like?

Research Question 4: How do residency programs financially support their residents?

Research Question 5: What are post-residency requirements for residents?

Research Question 6: What kind of induction support do residencies provide?

Research Question 7: What are commonly noted limitations of teacher residency programs?

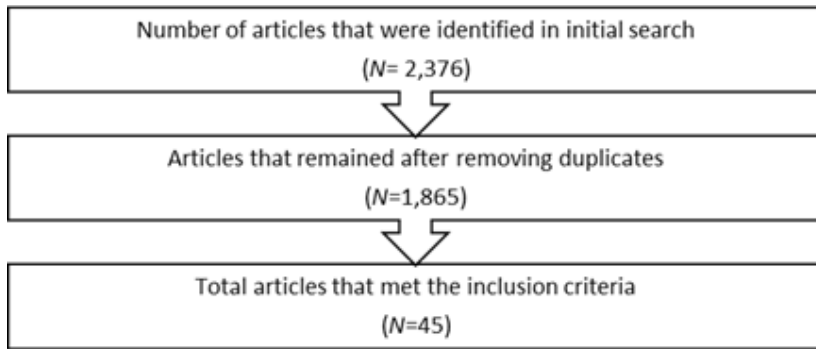
## **Methodology**

### **Article selection criteria**

Prior to the literature search, five criteria were established to identify relevant articles in the literature. Articles were included in the review if they met the following criteria: (a) published in academic journals or published as education policy briefs or reports; (b) written in English; (c) published in the USA; (d) employed quantitative, qualitative, mixed, or descriptive research methods; and (e) focused on teacher residency programs. The review was not restricted to a specific date range. Additionally, all possible studies published in the USA literature were included in the review.

### **Search procedure**

Four different electronic databases were used to search for peer-reviewed articles: Education Research Complete, ERIC, PsychINFO, and Google Scholar. These databases were chosen because they are commonly used databases for conducting literature reviews (Pan, 2016). Databases were searched simultaneously using the following key words at three levels of each database: (Level 1) Teacher residency OR teacher pathway OR teacher preparation pathway; (Level 2) Teacher education OR teacher preparation OR teacher development; (Level 3) Program\* OR model\* OR policy. This initial search resulted in a total of 2,376 articles. Of those, 511 were duplicates. After removing the duplicates, the titles and abstracts of the resulting articles were reviewed, and the inclusion criteria were applied. This process resulted in 45 peer-reviewed articles that fit the inclusion criteria. Full texts of the final articles were obtained for answering the literature review questions. Also, reference list searches of the articles that met inclusion criteria were reviewed.



*Figure 1.* Article search process

The reference list search and the content reviews of 45 articles yielded 10 common teacher residency programs in the USA: Academy for Urban School Leadership, Apple Tree Early Learning Teacher Residency, Aspire Teacher Residency, Boettcher Teacher Residency, Boston Teacher Residency, Newark Montclair Urban Teacher Residency, Denver Teacher Residency, The San Francisco Teacher Residency, Seattle Teacher Residency, and Nashville Teacher Residency (Beck, 2016; LiBetti & Trinidad, 2018; Cochran-Smith et al., 2018; Papay et al., 2012; Williamson et al., 2016). Onwuegbuzie, Leech, and Collins (2012) suggested that literature review sources could be expanded by using different source types such as research articles, books, internet websites, talks, observations, videos, or documents. To provide a comprehensive review, additional information about these 10 teacher residency programs were collected from online sources such as newspapers, partner universities' websites, and policy documents. The review of 10 teacher residency programs and online media sources supplemented the information obtained from the peer-reviewed articles in this study.

### **Data analysis**

All sources were analyzed using the classical content analysis technique (Onwuegbuzie et al., 2012). In this analysis technique, all sources are systematically reduced to codes inductively or deductively, then the number of codes is counted (Onwuegbuzie et al., 2012). The following coding categories were established in an excel file to compare the information extracted from articles and additional sources: (a) common characteristics, (b) indicators used to measure success of teacher residency programs, (c) recruitment and selection processes, (d) financial support for residents, (e) post residency requirements, (f) induction supports, and (g) program limitations.

### **Reliability**

A second coder who is an expert in the USA teacher education programs established reliability in this study. This second coder reviewed all selection criteria, search

procedures, and coding categories and provided regular feedback on the review process. The second coder and the author held weekly meetings to go over the search process and findings over three months. The second coder checked each step, with 100% agreement achieved on the literature review search process as well as the categorization of findings. Below, findings from the literature review are presented.

## **Findings**

### **Research question 1: Common characteristics of teacher residency programs**

The review of 45 articles, 10 teacher residency programs, and policy documents (e.g., Silva et al., 2014) revealed seven defining characteristics of teacher residency programs. First, teacher residency programs combined theory and practice in a year-long clinical experience (e.g., Beck, 2016; Boston Teacher Residency; Denver Teacher Residency; Gardiner & Salmon, 2014; Garza & Werner, 2014; Jagla, 2009; Klein, Taylor, Onore, Strom, & Abrams, 2013; Nivens, 2013; Reagan, Roegman, & Goodwin, 2016; Tindle, 2011; Wasburn-Moses, 2017). Residents spent one year in experienced mentor teachers' classrooms.

Second, residents received intensive mentoring support from experienced mentors during their residency year (e.g., Beck, 2016; Boston Teacher Residency; Denver Teacher Residency; Gardiner & Lorch, 2015; Gardiner & Salmon, 2014; Klein et al., 2013; Leon, 2014; Solomon, 2009). Third, residents were accepted into teacher residency programs as cohorts in a given year (e.g., Beck, 2016; Boston Teacher Residency; Denver Teacher Residency; Garza & Harter, 2016; Garza & Werner, 2014; Kretchmar, White, Hofkamp, & Kramer, 2018). They took courses, attended workshops and meetings as a group by supporting and learning from one another.

Fourth, residents received financial support (e.g., stipend) during their residency year (e.g., Apple Tree Early Learning Teacher Residency; Aspire Teacher Residency; Boston Teacher Residency; Denver Teacher Residency; Garza & Werner, 2014; Newark Montclair Urban Teacher Residency; Wasburn-Moses, 2017). Fifth, residents enrolled in master's degree programs in partner universities (e.g., Aspire Teacher Residency; Beck, 2016; Boston Teacher Residency; Denver Teacher Residency; Garza & Werner, 2014; Wasburn-Moses, 2017). Partner universities offered master's level programs to residents with reduced tuition.

Sixth, residents received induction support after graduation (e.g., Apple Tree Teacher Residency; Boettcher Teacher Residency; Boston Teacher Residency; Gardiner, 2012; Jagla, 2009; Nelson, Duke, Hutchens, & Machell, 2014; Newark Montclair Urban Teacher Residency). Residents committed to teaching in a high-need school district for three to five years. Lastly, residents received ongoing support and coaching during two to three years following the completion of their programs (e.g., Boston Teacher Residency; Denver Teacher Residency; Garza & Harter, 2016). Table 1 summarizes characteristics of teacher residency programs.

**Table 1.***Common Characteristics of Teacher Residency Programs*

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1. A yearlong clinical experience
  2. Mentoring
  3. Cohort model
  4. Financial support for residents
  5. Master's degree
  6. Induction support
  7. Ongoing support and coaching after graduation
- 

**Research question 2: Indicators used to measure success of teacher residency programs**

The authors/programs described several indicators used to measure success of teacher residency programs. The most common indicator was retention of residents in their programs (e.g., Academy for Urban School Leadership; Apple Tree Teacher Residency; Aspire Teacher Residency; Boston Teacher Residency; Newark Montclair Urban Teacher Residency; Denver Teacher Residency). The authors followed residents to measure whether they were still employed/teaching over the last three to five years. The second most common indicator was employment/hiring of residents following graduation from the residency programs (e.g., Academy for Urban School Leadership; Aspire Teacher Residency; Boettcher Teacher Residency; Nelson et al., 2014; Solomon, 2009). The third common indicator was principal ratings or evaluations of resident performances during and after residency year (e.g., Clewell & Villegas, 1999; Nelson et al., 2014; Solomon, 2009). The fourth common indicator was ethnic diversity of participants in teacher residency programs (e.g., Papay et al., 2012; Solomon, 2009; Villegas & Clewell, 1998). Table 2 presents the indicators used to measure success of teacher residency programs.

**Table 2.***Indicators Used to Measure Success of Teacher Residency Programs*

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1. Retention in the program
  2. Employment immediately following graduation
  3. Principal ratings/evaluations
  4. Diversity of residents in the program
  5. Student achievement
  6. Program completion rate
  7. State evaluation ratings
  8. Attrition rate
  9. University supervisor and/or mentor ratings
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The authors/programs described several features of teacher residency programs



that have been associated with success (see Table 3). For example, (1) resident preparation including coursework that is designed based on the needs of local school districts and residents, engaging curriculum, and a yearlong clinical experience (e.g., Boston Teacher Residency; Denver Teacher Residency); (2) recruiting committed residents, mentors, and faculty members (e.g., Aspire Teacher Residency; Drake et al., 2011); (3) effective partnerships among universities, local schools, and state education agencies (e.g., Beck, 2016; Nelson et al., 2014); (4) recruiting residents from local communities (e.g., Aspire Teacher Residency; Nashville Teacher Residency); and (5) extensive support programs for residents such as financial, social, and emotional support (e.g., Aspire Teacher Residency; Clewell & Villegas, 1999) have been reported to be associated with the success of teacher residency programs. Additionally, the authors/programs listed the following features as successful components of teacher residency programs: (6) cohort program (e.g., Kretchmar et al., 2018), (7) community and family engagement (e.g., San Francisco Teacher Residency), (8) culturally responsive and social justice focus (e.g., Beck, 2016; Reagan et al., 2016; San Francisco Teacher Residency), (9) incentives for faculty (e.g., recognizing the work of faculty members in the promotion and tenure process; Drake et al., 2011), and (10) education rounds (e.g., residents joined cohort members in the same content area and grade level in other schools within a school district; Reagan, Roegman, & Goodwin, 2017; Williamson & Hodder, 2015).

**Table 3.**

*Features of Teacher Residency Programs Associated with Success*

- 
1. Resident preparation/ coursework/ curriculum/clinical placement
  2. Matching residents to high-performing mentors
  3. Partnership/Network
  4. Recruitment from local community
  5. Extensive support programs for residents (e.g., financial, social, emotional)
  6. Cohort Program
  7. Community engagement
  8. Culturally responsive and social justice focus
  9. Incentives for faculty and mentors
  10. Education rounds
- 

Teacher residency programs established partnerships among multiple partners. A list of partners included universities, school districts, non-profit agencies, education associations, and department of education. Universities usually offer 12-14 months master's degree programs for residents. Residents can earn a master's degree in the following areas: M.A. in Teaching, Special Education (K-12, mild/moderate disabilities), Elementary Education, Middle/Secondary Education, Early Childhood, Multiple Subject, Single Subject (e.g., English, Math, Science, Social Studies). University

Master's Degree programs usually start in June with pre-residency coursework and continue through June or August (next year). Credits required for completing master's programs varied across different universities. Most universities offered 30+ credits programs. The University of Denver required the highest credits for program completion with 52 credits in Elementary/Secondary Math and Secondary Science. Residents attended classes during one full day, nights, and weekends due to their required intensive work in schools.

### **Research question 3: Recruitment and selection process**

Recruitment and selection of residents involved traditional and non-traditional requirements. The four common resident selection requirements were (1) a bachelor's degree, (2) minimum 3.0 GPA, (3) passing test scores from Praxis Exams, and (4) the USA citizenship or permanent residency in the USA. Candidates had to follow an application process that involved the following common stages: (1) an online application; (2) an online/phone interview; (3) a selection day that includes a group-problem solving activity, teaching a mini lesson, an individual interview, a writing event, and one-on-one conversation with a content expert; (4) an essay explaining why candidates should be accepted into the program; (5) university admittance, and (6) recommendations from professional or academic references. Methods followed to reach out to possible candidates included program flyers, university websites, Google ads, print ads, newspapers, college recruitment fairs, job fairs, and referrals from current and former residents.

Teacher residency programs' target population included candidates from various fields and backgrounds. Teacher residency programs targeted the following groups of candidates:

- a) Recent graduates with bachelor's degree (e.g., Academy for Urban School Leadership, Boston Teacher Residency, Denver Teacher Residency),
- b) Career changers from other professions (e.g., Aspire Teacher Residency, Boettcher Teacher Residency, Boston Teacher Residency, Denver Teacher Residency),
- c) Candidates from ethnically diverse backgrounds (e.g., Apple Tree Early Learning Teacher Residency, Nashville Teacher Residency),
- d) Candidates who are committed to social justice (e.g., Apple Tree Teacher Residency, The San Francisco Teacher Residency, Seattle Teacher Residency),
- e) Paraprofessionals, uncertified teachers, or substitute teachers (e.g., Clewell & Villegas, 1999; Lau, Dandy, & Hoffman, 2007; Villegas & Clewell, 1998).

The most common mentor selection criterion was principal nominations (e.g., Boettcher Teacher Residency, Newark Montclair Urban Teacher Residency, Denver Teacher Residency, Seattle Teacher Residency). Then, mentors applied to programs and

submitted a statement of interest to be a mentor in a teacher residency program (e.g., Denver Teacher Residency, Newark Montclair Urban Teacher Residency). The program faculty/staff observed mentors in classrooms and conducted one-on-one interviews (e.g., Boston Teacher Residency, Nashville Teacher Residency, Newark Montclair Urban Teacher Residency). Some programs required mentors to perform in the top 30% of their school and district teacher evaluations (e.g., Aspire Teacher Residency, Denver Teacher Residency). Programs also required mentors to have prior teaching or mentoring experience (e.g., The San Francisco Teacher Residency, Academy for Urban School Leadership). Mentors received stipends for their work. For example, The Teaching Residency Program for Critical Shortage Areas pays an annual \$3,400 for mentoring for the residency program (Garza, Reynosa, Werner, Duchaine, & Harter, 2018). The Aspire Teacher Residency Program pays mentors an annual \$3,000 stipend plus \$500 to be used for professional development. The San Francisco Teacher Residency Program pays \$2,500 stipend for mentors.

#### **Research question 4: Strategies used to support residents in their tuition**

Teacher residency programs can be costly because residents are required to enroll and pay tuition in graduate level programs and complete a yearlong intensive teaching experience that does not leave enough time for them to sustain their current jobs. Teacher residency programs pay living stipends to help residents afford their rents, daily expenditures, and other financial needs. It is necessary to provide residents with financial supports in order to increase their participation and interest in the programs. Thus, one of the important aspects of these programs is to develop strategies to support residents financially. The living stipends paid to residents ranged from \$5,000 to \$36,000. Teacher residency programs also supported residents in their tuition. For example, the Apple Tree Early Learning Teacher Residency Program and the Newark Montclair Urban Teacher Residency provide a tuition waiver covering 2/3 of the master's degree tuition cost. In the Aspire Teacher Residency Program, residents can receive up to \$18,000 in federal financial aid to pay tuition for the University of Pacific in California and up to \$3,250 in federal financial aid to pay tuition for the Relay Graduate School of Education. Boettcher Teacher Residency Program pays residents' \$3,500 Master's degree program tuition cost directly. The Denver Teacher Residency provides residents with up to 80% of tuition reimbursement upon fulfillment of five-year contract. The San Francisco Teacher Residency Program offers 40% tuition remission at the University of San Francisco. Other teacher residency programs such as Chicago, Boston, and Nashville offer discounted tuition through their partner universities. Teacher residency programs were financially supported by national as well as local funding agencies. The most common funding agency was the USA Department of Education Teacher Quality Partnership Grant Program. Another funding agency was the National Center for Teacher Residencies Partner Program. Other funding agencies included the

Boston Plan for Excellence, the Golden Apple Foundation, Apple Tree Institute, Boettcher Foundation, Woodrow Wilson Foundation, The Ford Foundation, and DeWitt Wallace-Reader's Digest Fund.

### **Research question 5: Post-residency requirements**

Residents commit to teaching for three-to-five years in a high-need school district after graduation. For example, Boston, Newark, and San Francisco Teacher Residency Programs require three years of commitment to teaching after graduation. Papay et al. (2012) found that 80% of teachers who graduated from Boston teacher residency program remained in their teaching positions after three years compared to 63% of teachers who graduated from other teacher preparation programs. LiBetti and Trinidad (2018) reported that the five-year retention rate for teacher residency graduates was 80% compared to 50% of nonresident teachers in San Francisco. The commitment is four years in the Chicago Teacher Residency and the Aspire Teacher Residency. Berry, Montgomery, and Snyder (2008) reported that the three-year retention rate was 95% for the Chicago Teacher Residency graduates. The commitment is five years in the Seattle Teacher Residency and the Denver Teacher Residency. If residents are unable to meet their commitment, they are required to repay all or a portion of the scholarship they received during their training year.

### **Research question 6: Induction support for residents**

Residents receive coaching and feedback support from mentor teachers, instructional coaches, principals, and the residency team during the first years of their work as teachers. In terms of induction support for new teachers in Chicago, principals observe residents in classrooms and select new teachers for their schools every spring semester. The Aspire Teacher Residency partners with 10 K-12 campuses in California and Tennessee. Residents choose schools based on their location of interest. The Boston Teacher Residency program has a full-time director of alumni relations and placement who facilitates the placement process for all residents. The program partners closely with the Boston Public School Office of Human Capital to ensure that each cohort of residents matches the projected hiring needs of the district (Solomon, 2009). The San Francisco Teacher Residency provides residents with a guaranteed teaching job upon successful program completion in a high-need school district (Williamson et al., 2016). The Seattle Teacher Residency convenes an alumni board that organizes engagement opportunities, collaborates with district induction programming, and offers additional induction support to graduates. The program collaborates with the Seattle Public Schools and residents who successfully complete the program and internship may receive an initial contingency contract and may be invited to participate in Phase I of the interview process for new teachers. The Nashville Teacher Residency provides residents with a job opportunity in their residency year. Most residents continue their

work as full-time teachers in a partner school where they complete their residency. If there is not a job available in residents' subject area at their school, they are guaranteed a teaching job opportunity at a different partner school.

### **Research question 7: Limitations of teacher residency programs**

Limitations of teacher residency programs can be grouped into four main categories. The first limitation is program cost and budgeting (Beck, 2016; Drake et al., 2011; Klein et al., 2013; Nelson et al., 2014; Ross & Lignugaris-Kraft, 2015). The authors indicated that it was expensive to prepare residents for teaching. Financial sustainability was a major concern for these programs. The second limitation is the impact of state accountability system on teacher residency programs. For example, this limitation included (a) teachers' unwillingness to accept residents due to high pressure on state testing or teacher evaluation (Drake et al., 2011) and (b) reduced learning time for residents in a system where standardized tests have high-stakes implications (Gardiner, 2011; Hammerness & Craig, 2016; Nelson et al., 2014). Third limitation is difficulty in finding appropriate residents who can fit into the program description and teachers who can effectively mentor them (Beck, 2016; Klein et al., 2013; Kretchmar et al., 2018). For example, Beck (2016) stated that it was difficult for the program to find candidates who had social justice orientation. Klein et al. (2013) indicated recruitment challenges for both residents and mentors. They reported that half of the residents could not pass the Praxis Exam on math and science. Also, finding high quality constructivist math and science mentors was a challenge for the program. Fourth limitation is institutional procedures such as determining credit weights, grading policy (e.g., Pass/Fail vs. A-F) and faculty workload (Drake et al., 2011; Klein et al., 2013). Other factors listed as limitations included institutional differences between universities and school districts and dual admission processes (Beck, 2016), generalization of knowledge gained in a teacher residency program to other school districts (Williamson & Hodder, 2015), and curriculum development and/or adaptation for a teacher residency program (Garza & Werner, 2014; Klein et al., 2013).

### **Discussion**

Teacher residency programs have emerged as an alternative program to prepare teacher candidates for high-need schools. The purpose of this study was to systematically review the literature on teacher residency programs in the USA. The review highlights that teacher residencies share some common characteristics that can be replicated by local school districts. However, the review also revealed that the success and sustainability of teacher residency programs relied on several factors such as regular funding and personnel who are committed to their programs. Below, findings from the literature review are discussed. Limitations and directions for future research were provided.

### **Teacher residencies as an alternative teacher preparation program**

Some characteristics of traditional teacher preparation programs have been criticized in the USA. Particularly, these programs have been found to be inadequate in providing high quality mentoring and producing effective and diverse teachers who will work in schools (LiBetti & Trinidad, 2018). To address these limitations, this review revealed that clinically rich teaching experience has been found to be the most defining characteristic of teacher residency programs. Residents were placed into experienced mentors' classrooms over one year. Mentors were not randomly selected; rather, they were selected based on some pre-established criteria such as principal nominations or school and district teacher evaluations. Residents observe experienced mentors, practice teaching, and gradually receive more teaching responsibility during their residency year. In this aspect, residents have more direct experience than their counterparts in traditional teacher preparation programs (Cochran-Smith et al., 2018). The literature review showed that teacher residency programs address the clinically rich teaching experience need in teacher preparation (Drake et al., 2011). Once residents become teachers of record, they will already have skills and knowledge necessary to better respond to their students' needs.

An important feature of teacher residency programs associated with success was high retention rates in the program (Solomon, 2009). Local school districts face challenges in finding and recruiting highly qualified and well-prepared special education teachers who can address the needs of students with disabilities, particularly in rural areas in the USA (Collins, 2007). Special education teachers may leave their positions for economic, work-related, or personal reasons. However, results from this review revealed that residents made commitment to teaching in a high-need school district for certain years in teacher residency programs. Residents' commitments usually ranged from three to five years of working in a high-need school. This aspect of teacher residency programs is likely to eliminate unexpected movement of teachers from a high-need school district to another district. Moreover, educational services can be sustained as residents keep their commitments with the program.

Teacher residency programs challenge the traditional paradigm in teacher preparation. Typically, universities prepare teachers for school districts without considering their immediate needs and interests. However, teacher residencies offer a third space for teacher preparation. They can be innovation sites in which universities partner with local school districts and other partners in teacher preparation. Partners can cross boundaries and develop locally meaningful innovations to better address local schools' needs and interests. School districts are not considered as pure consumers of teacher preparation (Solomon, 2009). Rather, they take an active role in preparing and hiring their own teachers (Beck, 2016). For example, this review showed that teacher residencies may choose to recruit candidates who have been living in a particular school district (e.g., *Aspire Teacher Residency*; *Nashville Teacher Residency*) or they may

have a strong emphasis on culturally responsive and social justice issues in education (e.g., Beck, 2016; Reagan et al., 2016). Thus, the flexible nature of teacher residency programs in preparing teacher candidates presents an important opportunity for school districts.

Like all other alternative programs, teacher residencies also have responsibilities for demonstrating success on several teacher and student outcomes. Teacher residency programs have been successful in keeping residents in the program. A higher percentage of residents remained in their teaching positions over time. Though a growing number of peer-reviewed articles have been written about teacher residency programs, very few of them have empirically tested their effectiveness on student outcomes (e.g., Papay et al., 2012). This finding suggests that more empirical studies are needed for showing the effectiveness of teacher residencies on multiple student outcomes. The existing empirical work (i.e., Papay et al., 2012) suggests that teacher residencies do not result in immediate impact on student outcomes. However, the long-term effect of these programs has been reported on students' math test scores (Papay et al., 2012). Since there is a lack of empirical studies on teacher residencies, limited conclusions can be drawn about the effectiveness of these programs on student outcomes.

Teacher residencies admit candidates from various backgrounds including recent graduates with bachelor's degrees, career changers from other professions, candidates from ethnically diverse backgrounds, paraprofessionals, uncertified teachers, and substitute teachers. However, some authors argued that involvement of individuals from non-education backgrounds could introduce challenges for coherence in teacher preparation (Beck, 2016; Klein et al., 2013). In contrast, teacher residencies may present opportunities for individuals who are concerned about the education of students in US schools. Teachers of color are still underrepresented in schools where a high percentage of minority students are enrolled. Thus, teacher residencies may strategically target residents of color who are committed to teaching in high-need schools and areas. For example, the Boston Teacher Residency cohorts included at least %51 residents of color (Solomon, 2009). The Nashville Teacher Residency cohorts were comprised of %75 residents of color (LiBetti & Trinidad, 2018). Similarly, the Apple Tree Teacher Residency cohort included 84% residents of color (LiBetti & Trinidad, 2018). By this way, teacher residencies may be effective alternatives to traditional programs that may be limited in preparing teachers of color for high-need schools.

Results from this review also revealed that teacher residencies moved beyond traditional teacher preparation and utilized induction and ongoing support plans for graduates (Solomon, 2009). The programs strategically partnered with local school districts to place residents in high-need schools upon their graduation. Importantly, partners ensured that residents had adequate support from university programs and school districts during their teacher of record years. Induction and ongoing support plans were highly critical for keeping residents in teaching positions over time. Tradi-

tional teacher preparation programs often do not have induction and ongoing support plans for their graduates. However, teacher residencies offered an effective pipeline from teacher preparation to induction. Successful teacher residencies can inform traditional teacher preparation programs in developing and implementing effective preparation, induction, and ongoing support plans for graduates.

Teacher residencies seem to be a promising alternative teacher preparation program in the USA. Yet, sustainability of these programs over time is a big question as almost all programs relied on federal funding. The programs paid residents living stipends ranging from \$5,000 to \$36,000 annually. Federal funding was provided for a limited duration of time (e.g., 5 years). There is a possibility that teacher residencies cannot accept new cohorts of residents because they do not have enough funding to support new residents. Thus, teacher preparation can be interrupted due to lack of financial support. This situation is likely to have a negative impact on the motivation and ongoing strategic work of committed personnel, universities, and school districts. Therefore, it is important for local partners to discuss and develop alternative solutions in case of lack of funding to support residency programs over time.

### **Limitations and directions for future research**

Teacher residencies are relatively new programs in the USA. Thus, there have been very few empirical works published to date. Future studies are needed in empirically testing the effectiveness of these programs on multiple teacher and student outcomes. As more empirical studies are conducted, better comparisons across multiple studies (e.g., calculation of effect sizes) can be done to calculate the cumulative impact of teacher residencies on teacher and student outcomes. Alternatively, programs may choose to utilize locally meaningful measures of success such as closing achievement gaps in reading and math in a school district. Also, this study focused on identifying all relevant articles on teacher residencies. Thus, inclusion of all qualitative, quantitative, and descriptive studies in the review contributed to an overall understanding of these programs. However, future reviews can focus on one specific methodology and provide a detailed examination for the effectiveness of these programs.

### **Conclusion**

Experts and researchers in teacher education still debate how best to prepare teachers for high-need schools. This review provided an examination of several characteristics of teacher residency programs in the USA. The review suggests that teacher residencies offer a promising alternative model for teacher preparation. However, the review also draws attention to the necessity of conducting more empirical research on teacher residencies to demonstrate their effectiveness on several teacher and student outcomes. It is important to prepare teachers in high quality and sustainable teacher education programs that can address local school districts' immediate needs.



## References

- \*Studies selected for the literature review are identified with an asterisk.
- Academy for Urban School Leadership (2019, April 25). Retrieved June 1, 2019, from <http://auslchicago.org/>
- Akiba, M. (2011). Identifying program characteristics for preparing pre-service teachers for diversity. *Teachers College Record, 113*(3), 658-697.
- Apple Tree Early Learning Teacher Residency (2019, April 25). Retrieved June 1, 2019, from <https://www.appletreeinstitute.org/>
- Aspire Teacher Residency (2019, April 25). Retrieved June 1, 2019, from <https://aspirepublicschools.org/join/aldergse/>
- \*Beck, J. S. (2016). The complexities of a third-space partnership in an urban teacher residency. *Teacher Education Quarterly, 43*(1), 51-70.
- Berry, B., Montgomery, D., & Snyder, J. (2008). *Urban teacher residency models and institutes of higher education: Implications for teacher preparation*. Center for Teaching Quality.
- Boettcher Teacher Residency (2019, April 25). Retrieved June 1, 2019, from <https://www.pebc.org/boettcher-teacher-residency/>
- Boston Teacher Residency (2019, April 25). Retrieved June 1, 2019, from <https://www.bpe.org/boston-teacher-residency/>
- Cherian, F. (2007). Learning to teach: Teacher candidates reflect on the relational, conceptual, and contextual influences of responsive mentorship. *Canadian Journal of Education, 30*(1) 25-46.
- Clarke, A., Triggs, V., & Nielsen, W. (2014). Cooperating teacher participation in teacher education: A review of the literature. *Review of Educational Research, 84*(2), 163-202. doi: 10.3102/0034654313499618
- \*Clewell, B. C., & Villegas, A. M. (1999). Creating a nontraditional pipeline for urban teachers: The pathways to teaching careers model. *The Journal of Negro Education, 68*(3), 306-317.
- Cochran-Smith, M., Keefe, E.S., Chang, W.C., & Carney, M.C. (2018). NEPC Review: “2018 Teacher Prep Review .” Boulder, CO: National Education Policy Center. Retrieved [April 2019] from <http://nepc.colorado.edu/thinktank/review-teacher-prep-2018>.
- Denver Teacher Residency (2019, April 25). Retrieved June 1, 2019, From <http://morg-ridge.du.edu/wpcontent/uploads/2017/08/C9-2017-2018-DTR-Handbook.pdf>
- \*Drake, J., Moran, K., Sachs, D., Angelov, A. D. S., & Wheeler, L. (2011). The University of Indianapolis Woodrow Wilson Indiana Teaching Fellowship Program: Reviewing the policy implications of university-based urban clinical residency programs in stem teacher preparation. *Planning and Changing, 42*(3-4), 316-333.
- \*Fisher-Ari, T. R., Martin, A. E., Burgess, A., Cox, V., & Ejike, J. (2018). PDS teach-

her residents: Storied journeys with implications for partnerships and teacher recruitment, development, and retention. *School-University Partnerships*, 11(2), 62-72.

- \*Gardiner, W. (2011). Mentoring in an urban teacher residency: Mentors' perceptions of yearlong placements. *The New Educator*, 7(2), 153-171. doi:10.1080/1547688X.2011.574591
- \*Gardiner, W. (2012). Coaches' and new urban teachers' perceptions of induction coaching: Time, trust, and accelerated learning curves. *The Teacher Educator*, 47(3), 195-215. doi: 10.1080/08878730.2012.685797
- \*Gardiner, W., & Lorch, J. (2015). From "outsider" to "bridge": The changing role of university supervision in an urban teacher residency program. *Action in Teacher Education*, 37(2), 172-189. doi: 10.1080/01626620.2015.1004601
- \*Gardiner, W., & Salmon, D. (2014). Bridging the theory-practice gap in an urban teacher residency: Two interventions and a cautionary note. *Journal of Urban Learning, Teaching, and Research*, 10, 87-100.
- \*Garza, R., & Harter, R. A. (2016). Perspectives from pre-service mathematics and science teachers in an urban residency program: Characteristics of effective mentors. *Education and Urban Society*, 48(4), 403-420. doi: 10.1177/0013124514533989
- \*Garza, R., Reynosa, R., Werner, P., Duchaine, E. L., & Harter, R. (2018). Characterizing mentoring capital in a residency program through mentor's voices. *Mentoring & Tutoring: Partnership in Learning*, 26(2), 226-244. doi: 10.1080/13611267.2018.1472590
- \*Garza, R., & Werner, P. (2014). Preparing mathematics and science teacher through a residency program: perceptions and reflections. *Teaching Education*, 25(2), 202-216. doi: 10.1080/10476210.2012.762352
- \*Goodwin, A. L., Roegman, R., & Reagan, E. M. (2016). Is experience the best teacher? Extensive clinical practice and mentor teachers' perspectives on effective teaching. *Urban Education*, 51(10), 1198-1225. doi: 10.1177/0042085915618720
- \*Hammerness, K., & Craig, E. (2016). "Context-specific" teacher preparation for New York City: An exploration of the content of context in Bard College's urban teacher residency program. *Urban Education*, 51(10), 1226-1258. doi: 10.1177/0042085915618722
- \*Hammerness, K., Williamson, P., & Kosnick, C. (2016). Introduction to the special issue on urban teacher residencies: The trouble with "generic" teacher education. *Urban Education*, 51(10), 1155-1169. doi: 10.1177/0042085915618723
- \*Henning-Smith, J. (2018). Best practices article: Gradually increasing individuality: Suggestions for improving alternative teacher education programs. *Journal of*

- the National Association for Alternative Certification*, 13(1), 15-25.
- Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3), 499-534.  
doi: 10.3102/00028312038003499
- \*Jagla, V. (2009). Transforming urban schools: Lessons for America from an urban teacher residency program. *International Journal of Learning*, 16(9), 41-48.
- \*Jones, A. H., & Barnes, C. P. (1984). The California Consortium: A case study on seeking change in teacher education. *Journal of Teacher Education*, 35(6), 5-10.  
doi: 10.1177/002248718403500603
- \*Kee, A. N. (2012). Feelings of preparedness among alternatively certified teachers: What is the role of program features?. *Journal of Teacher Education*, 63(1), 23-38. doi: 10.1177/0022487111421933
- \*Klein, E. J., Taylor, M., Monteiro, K., Romney, W., Scipio, M., Diaz, A., ... & Poole, S. (2015). Making the leap to teacher: Pre-service residents, faculty, and school mentors taking on action research together in an urban teacher residency program. *Networks: An Online Journal for Teacher Research*, 17(1), 547-547.
- \*Klein, E. J., Taylor, M., Onore, C., Strom, K., & Abrams, L. (2013). Finding a third space in teacher education: Creating an urban teacher residency. *Teaching Education*, 24(1), 27-57. doi: 10.1080/10476210.2012.711305
- \*Klein, E. J., Taylor, M., Onore, C., Strom, K., & Abrams, L. (2016). Exploring inquiry in the third space: Case studies of a year in an urban teacher residency program. *The New Educator*, 12(3), 243-268. doi: 10.1080/1547688X.2016.1187980
- \*Kolman, J. S., Roegman, R., & Goodwin, A. L. (2016). Context as mediator: Teaching residents' opportunity and learning in high-need urban schools. *Teaching Education*, 27(2), 173-193. doi: 10.1080/10476210.2015.1062979
- \*Kretchmar, K., White, K., Hofkamp, K., & Kramer, K. (2018). Research, design, and implementation of an inclusive teacher residency model. *National Teacher Education Journal*, 11(3), 8-16.
- \*Lau, K. F., Dandy, E. B., & Hoffman, L. (2007). The pathways program: A model for increasing the number of teachers of color. *Teacher Education Quarterly*, 34(4), 27-40.
- \*Lee, R. E., Eckrich, L. L., Lackey, C., & Showalter, B. D. (2010). Pre-service teacher pathways to urban teaching: A partnership model for nurturing community based urban teacher preparation. *Teacher Education Quarterly*, 37(3), 101-122.
- \*Leon, M. R. (2014). Distributed mentoring: Preparing preservice resident teachers for high needs urban high schools. *Journal of Urban Learning, Teaching, and Research*, 10, 101-117.
- LiBetti, A., & Trinidad, J. (2018). Trading coursework for classroom: Realizing the potential of teacher residencies. Bellwether Educational Partners.

- \*Mentzer, G. A., Czerniak, C. M., & Duckett, T. R. (2019). Comparison of two alternative approaches to quality STEM teacher preparation: Fast track licensure and embedded residency programs. *School Science and Mathematics, 119*(1), 35-48. doi: 10.1111/ssm.12314
- Nashville Teacher Residency (2019, April 25). Retrieved June 1, 2019, from <http://nashvilleteacherresidency.org/>
- \*Nelson, R. M., Duke, B. L., Hutchens, K., & Machell, J. (2014). Urban teacher preparation academy: Preparing urban teachers through a collaborative partnership. *Metropolitan Universities, 25*(2), 42-55.
- Newark Montclair Urban Teacher Residency (2019, April 25). Retrieved June 1, 2019, from <https://www.montclair.edu/ecele/academic-programs/newark-montclair-urban-teacher-residency-program/>
- \*Nivens, R. A. (2013). Ready2Teach: Shifts in teacher preparation through residency and situated learning. *Southeastern Regional Association of Teacher Education Journal, 23*(1), 13-17.
- Onwuegbuzie, A. J., Leech, N. L., & Collins, K. M. (2012). Qualitative analysis techniques for the review of the literature. *Qualitative Report, 17*, 1-28.
- Pan, M. L. (2016). Preparing literature reviews: Qualitative and quantitative approaches (5th ed.). Taylor & Francis.
- \*Papay, J. P., West, M. R., Fullerton, J. B., & Kane, T. J. (2012). Does an urban teacher residency increase student achievement? Early evidence from Boston. *Educational Evaluation and Policy Analysis, 34*(4), 413-434. doi: 10.3102/0162373712454328
- \*Reagan, E. M., Chen, C., & Vernikoff, L. (2016). "Teachers are works in progress": A mixed methods study of teaching residents' beliefs and articulations of teaching for social justice. *Teaching and Teacher Education, 59*, 213-227. doi: 10.1016/j.tate.2016.05.011
- \*Reagan, E. M., Roegman, R., & Goodwin, A. L. (2017). Inquiry in the round? Education rounds in a teacher residency program. *Action in Teacher Education, 39*(3), 239-254. doi: 10.1080/01626620.2017.1317299
- \*Reynolds, H. M., Wagle, A. T., Mahar, D., Yannuzzi, L., Tramonte, B., & King, J. (2016). Changes in residents' self-efficacy beliefs in a clinically rich graduate teacher education program. *Action in Teacher Education, 38*(2), 137-155. doi: 10.1080/01626620.2016.1155096
- \*Roegman, R., Goodwin, A. L., Reed, R., & Scott-McLaughlin, R. M. (2016). Unpacking the data: an analysis of the use of Danielson's (2007) Framework for Professional Practice in a teaching residency program. *Educational Assessment, Evaluation and Accountability, 28*(2), 111-137.
- \*Roegman, R., Pratt, S., Goodwin, A. L., & Akin, S. (2017). Curriculum, social justice, and inquiry in the field: Investigating retention in an urban teacher residency. *Action in Teacher Education, 39*(4), 432-452. doi: 10.1080/01626620.2017.1300956

- \*Ross, S. W., & Lignugaris-Kraft, B. (2015). Multi-tiered systems of support preservice residency: A pilot undergraduate teacher preparation model. *Journal of the National Association for Alternative Certification*, *10*(1), 3-20.
- Scafidi, B., Sjoquist, D. L., & Stinebrickner, T. R. (2007). Race, poverty, and teacher mobility. *Economics of Education Review*, *26*(2), 145-159. doi: 10.1016/j.econedurev.2005.08.006
- \*Schulte, A. K. (2017). The impacts of preservice action research in a rural teaching residency. *Journal of Inquiry and Action in Education*, *9*(1), 69-76.
- Seattle Teacher Residency (2019, April 25). Retrieved June 1, 2019, from <http://www.seattleteacherresidency.org/>
- Silva, T., McKie, A., Knechtel, V., Gleason, P., & Makowsky, L. (2014). Teaching residency programs: A multisite look at a new model to prepare teachers for high-need schools (NCEE 2015-4002). Washington, DC: National Center for Education Evaluation and Regional Assistance, *Institute of Education Sciences*, U.S. Department of Education.
- \*Solomon, J. (2009). The Boston teacher residency: District-based teacher education. *Journal of Teacher Education*, *60*(5), 478-488. doi: 10.1177/0022487109349915
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). A coming crisis in teaching? *Teacher supply, demand, and shortages in the U.S.*. Palo Alto, CA: Learning Policy Institute.
- The San Francisco Teacher Residency Program (2019, April 25). Retrieved June 1, 2019, from <http://www.sfteacherresidency.org/>
- \*Tindle, K., Freund, M., Belknap, B., Green, C., & Shotel, J. (2011). The urban teacher residency program: A recursive process to develop professional dispositions, knowledge, and skills of candidates to teach diverse students. *Educational Considerations*, *38*(2), 28-35.
- United States Census Bureau (2019, December 3). Census bureau reports nearly 77 million students enrolled in U.S. schools. Retrieved from <https://www.census.gov/newsroom/pressreleases/2019/schoolenrollment.htm>
- \*Villagómez, A. A., Easton-Brooks, D., Gomez, K., Lubbes, T., & Johnson, K. (2016). Oregon teacher pathway: Responding to national trends. *Equity & Excellence in Education*, *49*(1), 100-114. doi: 10.1080/10665684.2015.1121455
- \*Villegas, A. M., & Clewell, B. C. (1998). Increasing the number of teachers of color for urban schools: Lessons from the Pathways national evaluation. *Education and Urban Society*, *31*(1), 42-61. doi: 10.1177/0013124598031001004
- \*Wasburn-Moses, L. (2017). A national descriptive survey of teacher residency programs. *School University Partnerships*, *10*(2), 33-41.
- \*Williamson, P., Apedoe, X., & Thomas, C. (2016). Context as content in urban teacher education: Learning to teach in and for San Francisco. *Urban Education*, *51*(10), 1170-1197. doi:10.1177/0042085915623342

- \*Williamson, P., & Hodder, L. (2015). Unpacking practice with clinical instructional rounds in the San Francisco Teacher Residency program. *International Journal of Educational Research*, 73, 53-64. doi: 10.1016/j.ijer.2015.07.004
- \*Zirakparvar, N. A. (2015). A balancing act in the third space: Graduate-level earth science in an urban teacher-residency program. *Journal of Geoscience Education*, 63(3), 167-175. doi: 10.5408/14-058.1