Using Improvement Science to Develop and Implement a Teacher Residency Program in Rural School Districts

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As teacher preparation paths change and rural areas have opportunities to engage qualified community members in the teaching profession, a flagship university co-developed a teacher residency program with two school districts located in rural communities. Through this partnership, the Networked Improvement Community focused on root causes of recruitment and retention challenges in the rural school districts. Using an improvement science approach, a 14-month residency model was developed to recruit qualified community members to transition to the teaching profession, with a focus on mirroring the diversity of the local community. This study focuses on the development of the residency model and the recruitment of teacher residents for the initial cohort of this alternative teacher preparation program.

Keywords: teacher recruitment, teacher retention, rural education, teacher residency

Teacher recruitment and retention have been areas of focus in educational research for more than 50 years with researchers speculating and studying causes and effects of recruiting and retaining high quality teachers (Charters, 1956; Guarino et al., 2006; Ingersoll, 2017; Ingersoll et al., 2021). The focus on recruitment and retention is warranted as teachers have been identified to be among the greatest influencers of student growth and achievement within the school setting. An effective teacher has cumulative effects on students and can increase students' likelihood to achieve at higher levels in future grades, attend college, and earn higher salaries over their lifetimes (Chetty, Friedman et al., 2014; Chetty, Hendren et al., 2014; Hattie, 2009; Rivkin et al., 2005; Sanders & Rivers, 1996).

Recent trends in the workforce have made understanding recruitment, preparation, and retention of effective teachers even more prominent. Currently, more teaching positions are available because fewer individuals enter traditional pipelines (i.e., undergraduate teacher preparation programs) to become teachers, retention rates during the induction years of teaching are decreasing, and teacher retirements are increasing (Center for Educator Recruitment, Retention, & Advancement, 2021; Ingersoll, 2007). The number of teaching positions has also been increasing due to policy initiatives focused on improving education for all students (Guarino et al., 2006; Ingersoll et al., 2014; Ingersoll, 2017; Ingersoll et al., 2021). As such, a renewed focus on recruitment has been noted as retirements and instability of the workforce have increased (Ingersoll et al., 2014).

School districts in rural and urban environments often have greater challenges in recruiting and retaining teachers (Cowan et al., 2016; McClure & Reeves, 2004; McVey & Trinidad, 2019; Monk, 2007; Rosenberg et al., 2014). Understanding the root causes that inhibit or enhance recruitment, preparation, and retention in different areas is

necessary as well as implementing policy and practice that recognize and address these causes. In South Carolina, the number of new teachers hired who graduated from in-state college-/university-based preparation programs has been hovering around 22% recently. Preparing teachers from traditional pathways alone is not enough to meet the demand to fill the teacher vacancies across the state. According to the Center for Educator Recruitment, Retention, & Advancement (2021), "the number of South Carolina students preparing to become teachers has been declining mostly each year requiring districts to hire teachers from other programs and sources" (p. 4). As such, there are many alternative pathways to teacher certification that have become more prominent in addressing the demand for as well as quality of individuals entering the teaching profession (Humphrey & Wechsler, 2007; Shuls & Trivitt, 2015; Whitford et al., 2018).

This study focuses on the development and initial implementation of Carolina Transition to Teaching, a cohort-based residency program emphasizing the recruitment, preparation, and eventual retention of prospective teachers in rural communities funded by a U.S. Department of Education Teacher Quality Partnership (TQP) grant. The purpose of the TQP grant is to develop innovative strategies and programs to "recruit highly qualified individuals, including minorities and individuals from other occupations" and enhance their preparation and professional development to ultimately improve student achievement (U.S. Department of Education, 2022, para. 1).

The leadership team for the program, which includes university-based members from the College of Education, a team of program evaluators from a university-based center, and two district representatives from rural communities, used systematic methods of inquiry within an improvement science approach to develop, explore, and inform the implementation of the program. The development and initial recruitment for Carolina Transition to Teaching took place from November 2019 through August 2020 through regular meetings of the leadership team and sub-groups of the leadership team as well as events focused on recruitment within the districts. The initial cohort (Cohort 1) began the program in Summer 2020.

The goal of Carolina Transition to Teaching is to produce a professional pathway into teaching for career changers as well as promote a career ladder for individuals currently working and living in rural districts who are not certified to teach (e.g., paraprofessionals, substitute teachers). Research suggests that *grow your own* programs focused on recruiting teachers from the community, particularly people who are in paraprofessional roles within the educational system, can be successful in increasing the racial and ethnic diversity of teachers and retaining teachers in the profession (Gist et al., 2019).

Teacher Residency Model

In addition to being a *grow your own* approach, teacher residency programs present promising teacher preparation pathways for recruiting, preparing, and retaining teachers in high-needs districts. Since 2001, teacher residency programs have grown in popularity and have been used to recruit and retain teachers in both urban and rural settings (Guha et al., 2017). Based on the medical residency model, teacher residents complete a year-long clinical experience situated in an authentic school context while receiving mentoring and taking university coursework. Guha et al. (2017) identified several key components of high-quality teacher residency programs. These include (a) university-school district partnerships; (b) recruitment efforts driven by district needs and that target qualified and diverse candidates; (c) provision of a year-long clinical experience working alongside a mentor; (d) coursework integrated with the clinical experience; (e) selection and recruitment of mentors; (f) incorporation of cohorts of residents; (g) mentoring and support for residents after program completion; and (h) financial support in exchange for a commitment to teach in the partnering district.

Teacher Recruitment and Retention

Studies conducted on the impact of teacher residency programs have generally focused on three areas: teacher recruitment, retention, and effectiveness. In terms of recruitment, studies have shown that teacher residencies tend to recruit candidates who are ethnically diverse, often underrepresented in the teaching field, and with

diverse backgrounds. In a study of a teacher residency program in New York City, researchers found that half of the enrollees were people of color, and 42% of program completers across five cohorts of residents were from underrepresented groups (Sloan & Blazevski, 2015). Additionally, 69% of teacher residents in this program were career changers (Sloan & Blazevski, 2015). Similar findings occurred in studies of teacher residencies in Boston and San Francisco; in both cases, teacher residency graduates were more ethnically diverse than peers in the districts they served (Guha et al., 2017; Papay et al., 2012).

Studies also show that graduates of teacher residency programs are retained at high rates and often exceed the retention rates of their colleagues. Sloan and Blazevski (2015) studied the *New Visions Hunter College Urban Teacher Residency* (UTR) in New York City and found that the UTR graduate retention rate was 93% after four years, which exceeded city-wide retention rates. In a study of the *Boston Teacher Residency* (BTR), Papay et al. (2012) found that 75% of BTR graduates were retained after five years compared to 51% of other public school teachers. Similar rates of retention were found in a study of the *San Francisco Teacher Residency,* with 80% of residency graduates retained after five years of teaching (Guha et al., 2017).

Teacher Effectiveness

Regarding teacher effectiveness, Sloan and Blazevski (2015) found that the students of graduates of teacher residency programs outperformed students of teachers not trained in a residency program on state exams. Similarly, in a study of the *Memphis Teacher Residency* program, the students of teacher residency programs had greater academic achievement gains than students of other novice teachers and greater student academic achievement gains than veteran teachers on most statewide standardized tests (Guha et al., 2017). Additionally, Papay et al. (2012) found that the students of residency program graduates were comparable to other public school teachers in their ability to raise students' English language arts scores. In terms of mathematics scores, residency graduates initially underperformed when compared

to other teachers, however, by their fourth year of teaching, the effectiveness of residency graduates exceeded that of their colleagues (Papay et al., 2012).

Methodological Approach and Methods

Improvement science informed the development, initial implementation, and data collection related to this teacher residency program. The leadership team, also referred to as the Networked Improvement Community (NIC), is a cornerstone of improvement science. "Membership in a NIC means placing priority on solving a problem together, rather than pursing a theoretical predilection, methodological orientation, or personal belief" (Bryk et al., 2017, p. 17). As outlined in improvement science, the NIC focused on six improvement principles: (a) make work problem-specific and user-centered; (b) focus on variation in performance; (c) see the system that produces current outcomes; (d) focus on accountability/measurable outcomes; (e) use disciplined inquiry to drive improvement; and (f) accelerate learning through networked communities (Bryk et al., 2017). With a focus on making the work problem-specific and user-centered while attending to the system producing current outcomes, the NIC began its work by exploring School Report Card data (Table 1), identifying systemic barriers contributing to recruitment, preparation, and retention issues, and interrogating solutions (e.g., national and international programs) that worked in the short term, but were not successful in the long term.

The NIC focused its work on three core improvement questions: "What is the specific problem that I am now trying to solve? What change might I introduce and why? And how will I know whether the change is actually an improvement?" (Bryk et al., 2017, p. 9). Based on discussion of these questions during leadership team and sub-committee meetings at the onset of this work (January 2020–August 2020), the NIC developed Carolina Transition to Teaching to support effective recruitment, preparation, and retention within rural communities.

The program honored the experiences of instructional teacher assistants who may have

previously experienced barriers to becoming a teacher or who may not have realized a viable path into the profession. In addition, those working within rural communities as instructional assistants may be more likely to be embedded in the community. To recruit residents who brought a desire to become teachers and a deep commitment to the community, the NIC purposefully designed strategies that focused on building community and relationships among the applicants, teacher residents, university faculty, and district leaders.

Context

Two rural school districts, Colleton County School District and Orangeburg County School District, participated in the NIC that designed and implemented Carolina Transition to Teaching. According to Renaud and Bennett (2020), both counties are considered rural based on three indicators: *Urban Influence Code* and *Rural–Urban Continuum Code* developed by the U.S. Department of Agriculture as well as the *Core Based Statistical Area* developed by the Office of Management and Budget. Whereas the populations of each county may be larger than expected for rural areas, their sizeable geographic area and landscape classify them as rural. Colleton County School District is in a county with a total population of 37,677 and a district population of 5,500 students (Annie E. Casey Foundation, 2020; South Carolina Department of Education, 2019). Orangeburg County School District is in a county with a total population of 86,175 and a school district population of 10,000 students (Annie E. Casey Foundation, 2020; South Carolina Department of Education, 2019). Like other rural counties, both counties in which the school districts are located have higher percentages of students living in poverty and scoring below standards in mathematics and

reading than some neighboring counties and the state in general (Annie E. Casey Foundation, 2020; Renaud & Bennett, 2020). The two participating districts were also eligible to be partners under the TQP grant guidelines because they met the definition of high-needs school districts based on: (a) having more than 20% of children living in poverty (U.S. Census Bureau, 2017); (b) having a teacher turnover rate greater than 15% (South Carolina Department of Education, 2019); and (c) qualifying as Opportunity Zones, a federal designation indicating a community experiencing financial hardship.

Participants

Networked Improvement Community

The Networked Improvement Community (NIC) was composed of four university faculty in teacher preparation programs, one program coordinator hired, two program evaluators through a university-based center, and two district representatives, with one representing each district. The university faculty members were identified based on their interest in developing a residency program and their program area grade-band expertise (two faculty in elementary education, two faculty in middle level education). The two program evaluators had appointments in a university-based research and evaluation center that served the university as well as the state. The two district representatives were appointed by their superintendents based on their leadership positions within the districts and their understanding of teacher recruitment and retention.

Cohort 1 Applicants and Residents

An interest survey was disseminated in Spring 2020. Potential applicants gained information through a series of program information sessions, district-based recruitment efforts involving principals and school leaders, websites, or referrals from colleagues or friends who heard about the program. Forty-three individuals completed the interest survey.

Table 1

Demographics and Educational Indicators of Counties

Indicator	Colleton	Orangeburg	South Carolina
Total Population 2019	37,677	86,175	5,148,714
Percent of Population: Black	37.5	62.2	27.1
Percent of Population: Hispanic/Latinx	3.3	2.4	6.0
Percent of Population: Other Race	1.4	1.7	2.4
Percent of Population: White	57.9	33.8	64.5
Median Family Income	$35,498	$37,474	$59,514
Percent of Children in Poverty	33.5	36.5	22.1
Percent Testing Below Standard: 3rd Grade Math	64.5	58.8	42.3
Percent Testing Below Standard: 3rd Grade Reading	70	71.1	50.2
Percent Testing Below Standard: 8th Grade Math	79.4	87.9	63.4
Percent Testing Below Standards: 8th Grade Reading	71.9	74.5	55.4

Of the 43 individuals who completed the survey (Table 2), 88% identified as females and 12% as male. Most applicants (79%) identified as African American or Black, 19% as White, and 2% as Asian or Asian American. Most applicants (70%) held bachelor's degrees and 25% held master's degrees. During their most recent degree, a majority (74%) of applicants had a grade point average of 2.75 or higher. A large percentage of applicants (77%) also reported that they had at least one to two years of experience in an educational setting; 26% had more than ten years of experience. More than half (63%) of the applicants were currently employed by one of the partner districts, and of those, 70% were teaching assistants/paraprofessionals, 26% were substitute teachers, and one applicant held a non-teaching-related position in a school.

Of the 14 who became teacher residents (qualified based on state requirements and completed a university-based application for admission), 86% identified as African American or Black, 14% as White, and most of the teacher residents identified as female (80%). Most of the teacher residents were between the ages of 30 to 49 (65%), 14% were in their fifties, and 21% were aged 60 or above. Table 3 includes teacher resident demographic information. At the time of the Summer Institute (July 2020), one resident withdrew from the program for personal reasons and is not included in this information.

Table 2

Demographics of Applicants for Cohort 1

	N	%
Gender		
Female	38	88
Male	5	12
Race/Ethnicity		
African American	34	79
Asian or Asian American	1	2
White	8	19

All teacher residents admitted into the program had earned at least a bachelor's degree as required for the program; 29% had master's degrees. From their most recent degree, a majority (71%) had a grade point average of 2.75 or higher. At program entry, nearly all (93%) teacher residents reported that they had at least some experience in educational settings. Of those, 62% had five or more years of experience in educational settings. A large percentage (71%) also reported they currently held positions as a teaching assistant/ paraprofessional or as a long-term substitute teacher in one of the partner school districts at the time of application submissions. All teacher residents in this cohort were seeking elementary education certification. A middle-level track is planned for future years.

Table 3

Demographics of Cohort 1 Residents

	N	%
Gender		
Female	11	79
Male	3	21
Race/Ethnicity		
African American	12	86
Asian or Asian American	0	0
White	2	14
Age		
30–39	5	36
40–49	4	29
50–59	2	14
60 or Above	3	21

*Data includes all residents (N=14) who completed the Summer Institute in July 2020.

Data Collection

The planning process began in November 2019 with the identification of the Networked Improvement Community (NIC). In-person meetings of the NIC began in January 2020 but shifted online in March 2020 due to the COVID-19 pandemic.

During the planning process, program evaluators used a mixed methods approach to data collection that included participant observation, interviews, focus groups, and the interest survey to document the development of Carolina Transition to Teaching and initial interest. An embedded mixed methods design was used to better understand issues to elicit a range of potential solutions through analysis of qualitative and quantitative data (Cohen et al., 2018). We used qualitative methods during the planning stages as most of our work involved meetings and communication within the NIC. Program evaluators used member checks and a collaborative analysis process to promote the rigor and trustworthiness of qualitative findings (Merriam & Tisdell, 2016). To better understand participant interest in the program, we used a predominately closed-response interest survey (results presented in Table 2) that was disseminated through university- and district-based channels including websites, career fairs, and schools. At program entry, we conducted focus groups with the residents to gain insight into their rationale, motivations, and expectations for being involved in the program.

Participant Observation

Program evaluators, who were also members of the leadership team, engaged as participant observers capturing field notes during NIC meetings beginning in January 2020. These meetings occurred bi-weekly or monthly across initial program planning, recruitment, and early implementation (January 2020-August 2020). In addition, the program evaluators participated in and gathered field notes at the June 2020 virtual teacher resident orientation and observed multiple sessions during the virtual 2020 Summer Institute, a two-week professional development learning experience for incoming teacher residents.

District Representative Interviews

The program evaluators conducted online interviews via Zoom with each district representative serving on the NIC (n=2). These interviews lasted approximately 60 minutes; program evaluators used a semi-structured interview protocol that was co-constructed with university leadership in June 2020 (see Appendix). One program evaluator facilitated the focus group, and the other program evaluator took notes during the interview. Interviews were not recorded to protect the privacy and confidentiality of the district representatives.

University Faculty Focus Group

Following the Summer Institute, program evaluators conducted a 90-minute online focus group with the teacher residency university-based leaders (n=6). Program evaluators used a semi-structured protocol to gain information about the recruitment process, the initial implementation, and their early experiences with the residents. The focus group was recorded and transcribed.

Data from field notes, observational notes, and interview/focus group transcripts were combined and coded using an open and axial coding process to identify emerging patterns and then identify operative themes. One evaluator led the coding process, and a second evaluator reviewed the codes and added additional open codes as needed. Finally, the codes were member checked by the NIC to promote rigor and trustworthiness (Merriam & Tisdell, 2016).

Teacher Residency Interest Survey

A 19-item interest survey was co-constructed within the NIC. The program evaluators, in collaboration with the NIC, developed the survey to gain information from individuals who expressed interest in Carolina Transition to Teaching. The survey was open from March 24, 2020 to June 30, 2020. Questions were organized around the following areas: (a) demographics, (b) previous degrees and grade point averages, (c) work experience, (d) interest in teaching/program, and (e) preferences of grade level and school district. Responses were received from 43 individuals. Results from the survey were analyzed using

descriptive statistics. These results are reported in the participant section (Tables 2 and 3) and were used by the NIC to develop the Carolina Transition to Teaching program components and understand those who expressed interest in the program and ultimately the teacher residents.

Resident Focus Groups

In July 2020, program evaluators conducted 60-minute online focus groups via Zoom with the Cohort I teacher residents during the virtual Summer Institute, the first professional development aspect of Carolina Transition to Teaching. Teacher residents were randomly placed in one of two groups to allow for opportunities for each resident's voice to be heard.

Transcripts and field notes from the focus groups with the residents were coded using open and axial coding processes. Direct quotes were identified to highlight the specific areas of focus (Merriam & Tisdell, 2016). One evaluator led the coding process, and another evaluator reviewed the coding schematic and quotes. The two program evaluators came to consensus on the predominant codes.

Findings

Program *Development*

Six overarching themes emerged across field notes, district representative interviews, and a university faculty/staff focus group related to NIC work and program development. By focusing on improvement science principles that made our work problem-specific and user centered, we explored the system that was producing current outcomes and specific aspects to address the problems (Bryk et al., 2017). In short, the NIC sought to use data, their various expertise, and feedback from other colleagues to address the development of Carolina Transition to Teaching. Table 4 presents overarching codes (axial codes), sub-codes (open codes), and illustrative data.

Table 4

Program Development Emergent Codes and Themes

Organized and engaged core leadership team
Brief Description
  Common philosophies/grounded in goals
  Driven
  Agenda, minutes, and action items
  Frequent meetings—twice per week at some points
  Continuous communication
  Embraced conditions and did not give up/persistent
  Perceived as organized, professional
	"The commitment of the level of people is high—having trouble keeping up with them." District representative interview notes, June 2020
	
	"Communication has gone well—we have had enough meetings to keep us updated." District representative interview notes, June 2020

Navigating university/district level policies/systems
Brief Description
  Advertising/recruiting
  Application
  Registration
  University Alternative Certification Program
  Financial Aid
  University EdQuarters
  Leadership changes
  Communication channels
  Responsibilities of district leadership/ multiple roles
  Transparency, importance of tone/modeling in   interactions
	"I know there were a couple of issues with the application process and The Graduate School. Working through that to make it easier for next cohort." District representative interview notes, June 2020
	
	"We have a totally new shift in leadership at the district levels and we have to think about how that impacts us and how we have communication issues." Leadership team focus group, July 2020

Understanding residency population
Brief Description
First impressions are critical
Remove barriers/Set them up for success
Productive struggle
Having faith—residents' approach to program
Reduce anxiety, develop teacher identity, equity
Purposeful building of collegial relationship
Professional stability—develop professionalism
Support systems (residents supporting each other, faculty supporting/valuing residents, school, and district support)

"There have been different initiatives that have been tried in different places, but tapping into people in our community and offering them that opportunity. I think it will be a return on the investment for sure." District representative interview notes, June 2020

"Principals love this program—they see it as an opportunity to grow our own." District representative interview notes, June 2020

Embracing conditions and adapting to situations through persistence and determination
Brief Description
COVID-19 shift to online recruitment/online Summer Institute
Barriers turned to strengths
Recruited residents, continued despite COVID
Don't give up
Deal with roadblocks, drove kits to pick-up spots
Seek support/take risks
"Did not know what to expect; never thought about canceling"

"Challenge has been that we haven't been able to fully function to not be able to do things we had planned to roll them out [pandemic]." District representative interview notes, June 2020

Promoting common vision and philosophy of teaching
Brief Description
Teachers learning from practice
Boundary spanning/Blurred and flattened power structures
Coaching teachers learning alongside residents and faculty
Intentionality
Modeling
Collateral learning—shaping colleagues, students, families
Community building and capacity building
Position residents as learners and doers
Contributing/being the change in communities, schools, and with students

"We're getting them out there and they're applying their knowledge, they're gaining feedback, they're reflecting on that and developing as reflective practitioners and then they're taking what they learn and going back and trying it again." Leadership team focus group, July 2020

"…our beliefs, our values related to teaching and teacher education are very similar with relation to equity, social justice, inquiry, trying to meet the needs of marginalized populations, that's at the forefront…of all of our work." Leadership team focus group, July 2020

Developing sense of community among stakeholders (residents, faculty, district liaisons)
Brief Description
Summer Institute as foundational pillar to establish sense of community
Promote authenticity
Develop system of support
Online Summer Institute promoted more holistic viewpoint—saw homes, families, glimpse of life

"You will be heard, we see you, we hear you, we will be in contact with you.' And so that, I think, made a big difference early on." Leadership team focus group, July 2020

"They [the residents] were saying how they were really liking each other and getting along really well. We mentioned friends . . . and they quickly changed that word to family." Leadership team focus group, July 2020

These axial themes showcase the culture of the NIC and guided the development of Carolina Transition to Teaching in 2020. The model that emerged from the NIC's work was multifaceted and components are described below.

Carolina Transition to Teaching Residency Components

Based on the NIC's work, predominantly focusing on January 2020 through August 2020, the following components address recruitment, preparation, and retention of teacher residents in rural communities. Although each part of the residency model may individually contribute to the program, when taken collectively, their intersection has the potential to address systemic challenges in recruitment, preparation, and retention. The emphasis was on forming new strategic partnerships to share the responsibility for preparing teachers in radically different ways (Milner, 2010; National Council for Accreditation of Teacher Education, 2010). The residency program aimed to provide requisite educational content and serve as the pedagogical foundation residents could use in classrooms and provide a wide range of clinical experiences to complement coursework. To encourage participation, residents received a grant-funded living-wage stipend (i.e., $15,000) to offset the costs of completing the full-time graduate residency program. After recruitment, each resident participated in an intensive two-week Summer Institute that coincided with the start of the Master of Education in Teaching that they would complete simultaneously with the year-long classroom residency.

The Summer Institute launched the program with goals to build rapport, support transition to the full-time graduate program, and provide initial theory and practice opportunities. During Week 1, residents worked mainly with the university faculty members who facilitated much of the coursework and provided exposure to guiding pedagogical theories and practices. Throughout Week 2, the residents and university faculty engaged with groups of elementary-aged students from the rural districts who were provided free summer learning opportunities and materials (online in Summer 2020), which enabled residents to implement

instructional strategies explored during the first week of the institute.

At the onset of the academic year, virtual graduate courses provided teacher residents with experiences to develop a pedagogical foundation by exploring issues of practice as identified as important by professional educators (e.g., issues of equity). Additionally, site-based methods courses were designed to meet at local schools where teacher residents could observe and authentically interact with P–12 students under the careful guidance of university faculty and classroom teachers (see Hodges & Mills, 2014). Consequently, most of the graduate courses were developed and taught by the university faculty who participated on the NIC. Courses taught by program faculty outside of the NIC met periodically with the NIC faculty to structure each course and ensure that the distinctive characteristics and circumstances of our school district partners and their rural communities (e.g., physical geographic area, district merging) were addressed.

To immerse teacher residents into the role of being a teacher, including extensive school-based experiences in rural schools and school communities, teacher residents co-taught alongside classroom-based mentors (i.e., teacher of record) from the partner school districts. This ongoing school-based coaching and mentoring drew on established co-teaching models (Friend & Cook, 2000) and provided systems of support among mentor teachers, university supervisors, school administrators, and university faculty.

Our model provided an alternative pathway that led to full teaching licensure. Carolina Transition to Teaching program is a State Department of Education approved collaboration among school districts and the state's flagship university with the goal of creating a high-quality alternative pathway into teaching that focuses on the expertise of local teachers, schools, districts, and institutions of higher education. The pathway also involved competency-based experiences through the completion of a series of micro-credentials (DeMonte, 2017) that allowed individuals to learn and demonstrate mastery of skills that are tied to the statewide teacher evaluation framework.

Figure 1

Carolina Transition to Teaching Pathway

Transition to Teaching	CarolinaCAP	Master's Degree & South Carolina Teaching Certification
Teacher Preparation & Clinical Practice	➕ Certification & Licensure Requirements ➡️	

Finally, Carolina Transition to Teaching was created with teacher retention in mind to decrease the rate at which teachers were leaving the profession (Ingersoll & May, 2011; McClure & Reeves, 2004). After coursework and the yearlong residency, each teacher resident will be supported through the Carolina Teacher Induction Program, a three-year support program that targets the retention of early career teachers by supporting their self-efficacy and job satisfaction while also addressing the stressors that often accompany early career teaching. The induction support is offered through group workshops, personalized coaching, and providing classroom support to early career teachers to assist them as they implement effective pedagogical practices ranging from behavior management to instructional strategies. In sum, the intersection of the aforementioned components comprises our program's approach to recruitment, preparation, and retention of teachers in rural communities in the state.

Entering Resident Focus Group

To gain information from those who were beginning the Carolina Transition to Teaching Program, focus groups with residents occurred during the 2020 Summer Institute (July 2020). The purpose of the focus groups was to better understand their perceptions of recruitment and evolving program components. Themes from the focus groups were related to: (a) recruitment, (b) attractors to the program, (c) teacher needs and challenges, (d) concerns, (e) communication

needs, and (f) recommendations. Each theme is described below.

Recruitment

Recruitment was community-driven and encouragement was often individualized. Most residents were working in some capacity within a partner district and became aware of Carolina Transition to Teaching through personal contact from a district or school administrator. Resident James, a former teacher's assistant, stated,

> I learned by my principal. She called me up front to her office. I thought I had done something terribly wrong and there were others there, in fact [another resident was there] and she introduced us to the program…and she recommended that we apply, and so I did (James, focus group, July 15, 2020).

Other residents heard about the program through peers or colleagues and within school or district announcements or posts. A few residents also mentioned attending a recruitment event in their community.

Residents had roots in the community and were focused on helping children and their communities succeed. Two residents from different partner school districts discussed wanting to learn how to help children in their respective communities and help solve teacher shortage and retention challenges. Carrie, one of these residents, stated:

It just really hurts my heart because I really love this county. I'm glad I'm back, I'm never leaving again, and I want to be a part of the solution, not just somebody on the sidelines not making a difference (Carrie, focus group, July 15, 2020).

Attractors

The residency program made certification possible, higher degrees attainable, and learning more meaningful. Several residents discussed the residency program as providing a flexible pathway to certification in a teaching area of their interest. Specifically, other alternative pathways to certification were described as more rigid with certification areas strictly based on the subject area of residents' bachelor's degrees. Tanya explained the residency program was more attractive because:

> [In this program] I would end up becoming licensed and would be able to teach in the elementary setting, which is the route that I have wanted to go. Because all of the other alternative programs that I had saw . . . it [certification] was, like, based upon my background, which was human resources (Tanya, focus group, July 15, 2020).

Residents also appreciated getting a master's degree (not just another bachelor's degree), teacher certification, and teaching experience in schools. Several teacher residents cited obtaining a master's degree as a major attraction of the program. When asked, one teacher resident remarked, "Getting a master's degree. That's what drew me in" (Angie, focus group, July 15, 2020). For some residents, the timeframe of the program was attractive; this was particularly important to residents who were changing careers. Residents also appreciated the residency aspect of the program, which entailed working in classrooms.

Support from residency program faculty and staff during residency was essential. Residents discussed feeling fully supported by residency program faculty and staff as they pursued their certification. Some residents had observed a lack of support for teacher candidates in other teacher certification pathway programs. One

resident stated that long-term support was a "big thing" (Angie, focus group, July 15, 2020), and another resident stated, "they [faculty] have been supportive from day one and like [another resident] said, they'll be there after we get out" (Theresa, focus group, July 15, 2020).

Teacher Needs and Challenges

Residents sought to learn new teaching tools and techniques to help students in high-needs schools. Residents discussed wanting to learn skills to encourage student engagement, manage classroom behavior, and help students who may be struggling or need remediation. For example, Sam said, "I'm excited about learning about the different pedagogies and strategies that I can use going into the classroom to capture kids' minds" (Sam, focus group, July 15, 2020). Others mentioned needing behavior management techniques; something they had struggled with in previous teaching roles. One resident, Marvin, added, "For me, it would be classroom management. Techniques to manage the classroom especially when you have more than one student that has extreme behavior problems" (Marvin, focus group, July 15, 2020). Another resident recalled observing students in classrooms who needed, but did not get, extra help. Tanya elaborated, "Main thing I really want to focus on is literacy . . . I've subbed and seeing some of those kids coming out of third grade going into fourth grade, some of those kids struggled a lot…that was a big deal for me" (Tanya, focus group, July 15, 2020). Residents also discussed wanting to create a sense of community with parents and students.

Pandemic-related challenges during the residency centered around using technology and making virtual learning accessible and engaging for rural students. Residents discussed the COVID-19 pandemic context of schooling and challenges associated with moving from face-to-face to virtual instruction. Some residents were feeling challenged by technological demands. Deborah stated:

> I'm not very tech savvy. I'm kind of proud of myself for getting this Zoom stuff and finding my Google doc, so, you know, having to apply that and manage and help, you know, with

Chromebooks and this and that . . . that's where having a co-teacher is really going to be very beneficial (Deborah, focus group, July 15, 2020).

Other residents discussed feeling challenged to engage and connect with students within a virtual learning format. Kara explained:

Because of everything going on right now, I would have to say keeping the children engaged with everything being virtual learning. I mean, as an adult, I'm fidgety in my seat, so I can only imagine how it would be for an elementary student (Kara, focus group, July 15, 2020).

Another resident felt that while he was confident in being able to connect with students in face-to-face learning formats, he was less confident in virtual formats. Sam noted:

Just . . . having the impact that I have on the kids. Basically, I'm hoping that that can transfer via screen. I've been told that I do well and I have a good rapport with the kids, but I may not be able to reach out to them or impact them and have that physical connection that will get the lessons or that understanding across between us (Sam, focus group, July 15, 2020).

Additionally, some residents noted that Internet access was a challenge in their rural districts. Residents worried that virtual learning might be hard to access in the more remote areas of their counties. One resident, however, felt that being a resident right now, in this context – taking coursework online and potentially teaching online as a resident – was a positive thing. Carrie discussed this further:

I think it's actually kind of genius that we're doing this right now because we'll be able to learn both sides if this was ever to happen again. [Virtual education] will be a benefit for students, even in rural areas, if they can get the kinks out with the internet and the broadband and all of that. Because I know in [my county] . . . that's a big deal for us, because we don't have broadband (Carrie, focus group, July 15, 2020).

Residents were eager to work with coaching teachers but recognized that mutual respect was not always a characteristic of mentoring relationship. Residents were looking forward to working with a coaching teacher throughout the academic school year, but had some concerns. As one resident stated, "I'm really excited about the side-by-side with the coaching teacher" (Kara, focus group, July 15, 2020). However, some residents cited past experiences and expressed concerns about getting along with their mentor teacher. One resident explained, "I just hope that this experience will allow the teacher that I'm working with to have the respect for me as an equal shared person rather than someone working under them" (Marvin, focus group, July 15, 2020).

Prior experience in district schools could help but also potentially hinder their residency experiences. Some residents displayed confidence in various teaching skills including differentiating instruction as well as connecting and engaging with students based on their prior experience in district schools. Additional advantages included established relationships with students, other teachers, and administrators. However, due to these established relationships, some residents expressed concern about leaving their current school for their residency placement at another school.

Although these residents expressed a desire to remain with their former schools, one resident was concerned that if he stayed at his current school where he had been a teaching assistant, students may not respect him as a lead teacher. This resident elaborated:

I want to make sure that . . . I've been seen as a teaching assistant, which means I wasn't the head of the classroom and I just hope the students are able to understand the transition, not looking at me as the teaching assistant but understanding that I now carry the reins to the classroom (Sam, focus group, July 15, 2020).

Concerns

Work–life–academic balance. The residents recognized that they would have to manage personal, academic, and work demands as they

pursued teacher certification. For instance, one resident stated:

> Every time I hear the word 'homework,' I'm like, 'oh my God! I don't have the energy to stay up to 1 o'clock in the morning, I've got two kids!' But I wouldn't have signed up if I didn't think it was possible, but I am nervous about the energy, you know, getting through it (Deborah, focus group, July 15, 2020).

While the energy needed to keep up with graduate coursework and balance other responsibilities was described as a challenge, Sam felt optimistic:

> I agree with them in making sure I can keep up, but the energy that has been presented since we started it kind of has me thinking, like, I'm going to be able to get through it. We will have courses and work, but like there's no way we can't get through it if we put our best foot forward (Sam, focus group, July 15, 2020).

Residents also expressed concerns about being a university student again, taking the state teacher certification exam (i.e., Praxis), and the financial cost of the program. For some residents, it had been many years since they received their bachelor's degree. For these residents, being a university student again was a concern. One resident explained, "Getting back into the books [is challenging]. It's been years since I've been in the books" (Ruth, focus group, July 15, 2020).

A few residents were anxious about passing the Praxis test needed for certification; one resident had a hard time with the Praxis in the past and needed to overcome her test anxiety. Other residents mentioned finances as a concern. As Carrie put it, "This is scary from a financial point" (Carrie, focus group, July 15, 2020).

Communication Needs

Residents indicated that support and timely, detailed communication regarding application processes, expenses, and expectations of the program were necessary. At the time of the focus groups, residents indicated they felt fully supported by university faculty and staff and communication was prompt and helpful. However, a few residents identified gaps in communication between when they were accepted and beginning the program. James elaborated, "From the time we signed up you know, even from the time at the job fair that day, there was a huge gap in there where you didn't hear anything from them" (James, focus group, July 15, 2020). Others reiterated this point, however, Beatrice reported that she reached out directly to program staff and this was helpful:

> People were asking me about the program and then a week later, I made a phone call. And that was when I was asking questions to [the program coordinator] and this was when she was telling me about different things that was happening next. So, I kept in contact with her . . . and as long as I kept the communication between her and myself, if I had a question that needed answered, she would answer it (Beatrice, focus group, July 2020).

A few residents wanted more details regarding the cost of the program. Sam reported, "I know everyone was excited or was positive when we heard about the stipend, but I still have not yet today heard, like, what the cost of this degree is. Like still now I don't know that" (Sam, focus group, July 15, 2020). Finally, a couple residents discussed the need for clarification regarding residency expectations and programmatic activities.

Recommendations

Residents offered recommendations to aid in program development and implementation. The following recommendations were either drawn explicitly from residents or derived implicitly through focus group discussions based on resident experiences. Recommendations included: (a) communicate regularly with applicants early on during the application process; (b) be clear about costs of the program earlier in the process; (c) provide more details regarding the resident stipend and expectations; (d) provide more details regarding the program activities during the residency and expectations; (e) aid applicants in the graduate school application process to avoid difficulties; (f) promote the program for career changers working in the community but outside of partner school districts; and (g) consider residents'

prior experience in district schools in determining residency placements.

Discussion

Based on the needs and past experiences of two rural school districts, the NIC developed a 14-month teacher residency program that included a living wage stipend, university/district created teacher education experiences, graduate coursework, professional development from district-based coaching teachers (mentors) and university partners, and intensive engagement in classrooms during the preparation process.

Program Model

The program model and the residency selection process were based on the NIC's identified need to recruit and prepare teachers who were more likely to be connected to the rural communities, committed to the students in these communities, and remain in these communities over time. The program model emphasized the university–school connections and learning opportunities. District representatives, who were part of the core planning process through the NIC, influenced the program model based on their experiences within the rural communities. The model highlights the co-construction of learning through immersion in schools while completing cohort-based graduate-level coursework and professional development, which have been found to be components of high-quality residency programs (Guha et al., 2017).

Residents confirmed their desire for teacher certification options for people like themselves who were currently working in schools. Residents highlighted their commitment to their community, which bodes well for retention and aligned with scholarship related to the benefits of teacher residency program and *grow your own* programs (Gist et al., 2019; Papay et al., 2012; Sloan & Blazevski, 2015).

Recruitment

The school–university partnership developed a set of core values to drive the program and empower community members to pursue teacher certification and a master's degree in education.

Instructional assistants, paraprofessionals, and long-term substitutes within the district – a *grow your own* approach – were the focus for recruitment as these individuals tended to be more likely to be connected and committed to the community and the local school district.

Recruitment data indicated that the program was successful in reaching interested applicants with 43 people completing an interest survey and 14 residents enrolling in the program. Most Cohort 1 residents identified as African American or Black, and most of the residents resided within the county where the district is located or in an adjacent county, which the leadership team hypothesizes will lead to more effective teachers and greater retention in the district and field based on their commitment to students and their community (Center for Educator Recruitment, Retention, and Advancement, 2019; Gist et al., 2019).

There were recruitment opportunities and challenges that emerged that impacted the size of Cohort 1, which was designed for up to 24 residents. Three residents withdrew from the program prior to the 2020–2021 academic year based on unanticipated factors (e.g., contracting COVID-19). Reasons for non-matriculation will be explored among those who completed the interest survey but did not complete additional steps to enroll in the program or withdrew from the program after gaining acceptance.

Next Steps

With input from the leadership team, program evaluators are continuing the focus on improvement science to address improvement science guiding questions: "What is the specific problem that I am not trying to solve? What change might I introduce and why? And, how will I know whether the change is actually an improvement?" (Bryk et al., 2017, p. 9).

Data collection strategies to address the improvement science guiding questions include NIC meeting observations/field notes, entrance and exit surveys of residents, entrance focus groups with residents, end-of-year surveys of mentor teachers, end-of-year interviews with principals, annual interviews with district representatives,

annual focus group with university faculty, and annual interviews with induction coaches working with former residents. Interviews and surveys with differing stakeholders will allow for program improvement and assessment of interim outcomes.

As the program model and recruitment process continue to be refined and improved through data, the NIC has identified areas of needed growth, both personally and programmatically. One such area was the personal need of teacher residents for advanced training in learning systems and technology to function well in their coursework and in schools. The pandemic may have accelerated the degree to which school districts and classrooms rely on technology, and it appears technology will continue to be increasingly prevalent in classrooms in the future. In addition, the match between teacher residents and coaching teachers is being explored to ensure effective placements for residents. Finally, a survey specific to paraprofessionals is under development to explore motivations and interests of people currently employed in non-certified educational positions to identify obstacles to teacher certification. This will guide continued recruitment efforts and allow for the matriculation of more people who are interested in the program.

Limitations

While aspects of Carolina Transition to Teaching and the focus of our *grow your own* approach may align with the needs of other states and regions, the program was specifically designed to meet needs in two rural school districts using a NIC focused on local data. Data collection related to the development and initial implementation of the residency program included observations, interviews, focus groups, and an interest survey and may only be generalizable to similar geographic locations and populations. While the COVID-19 pandemic shifted aspects of the program such as the Summer Institute and course delivery mode, the implications of these changes are unclear at this time.

Conclusion

A large flagship university partnered with two school districts in rural communities to address challenges and barriers in teacher recruitment, preparation, and retention in a southeastern state. Using an improvement science approach, the NIC developed a residency program that included core components designed to facilitate effective teachers who were more likely to be retained in rural schools and school districts. The NIC achieved its goal of recruiting candidates who are underrepresented in the profession (Center for Recruitment, Retention, and Advancement, 2019) and have connections to their local students and communities; however, more focus is needed on interested instructional assistants who do not matriculate into the program to meet the needs of the school districts.

In the development and initial implementation, the focus was on two aspects of improvement science: "make the work problem specific and user centered" and "see the system that produces the current outcomes" (Bryk et al., 2017, p. 21/57). These shaped the formation of the NIC and development of Carolina Transition to Teaching. Now, the NIC will "focus on variation in performance" at the district and school level and measuring outcomes related to teacher effectiveness and teacher retention (Bryk et al., p. 35).

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Appendix

District Representative Interview Protocol

District and Community Characteristics

1. Tell me about your community.

2. Describe your district.

   a. How would you compare it to neighboring districts?

District Needs

3. Describe your district's ability to provide <u>high quality instruction</u> within elementary and middle school classrooms.

   a. What are some areas of strength?

   b. What are some challenges?

4. Describe your district's ability to <u>recruit</u> high quality teachers.

   a. What practices do you think would be successful in recruiting teachers to work in your district?

5. Describe your district's ability to <u>retain</u> high quality teachers.

   a. What factors do you think contribute to teacher attrition?

   b. What practices do you think would be successful in helping to retain teachers?

Teacher Residency Program

6. What are your initial thoughts regarding the Transition to Teaching (T3) program?

7. So far, what have been the greatest challenge(s) in implementing this program in your district?

8. Looking forward, how do you think implementation could be improved?

9. What <u>outcomes</u> do you expect to see from participating in this program?

Carolina Transition to Teaching University Faculty/Staff Focus Group Protocol

We will start with the Summer Institute and then gain your perspectives about the larger project.

1. Tell us your thoughts about the Summer Institute

   a. What was successful?

   b. What could have been improved?

2. Thinking about the upcoming fall semester/beginning of the school year, what are your thoughts about the preparation and readiness of the

   a. District leadership including principals

   b. Coaching teachers

      c. Residents

      d. UofSC faculty to facilitate courses

3. What opportunities have you discovered through the Cohort 1 recruitment process?

4. What challenges have you discovered through the Cohort 1 recruitment process?

5. As the grant leadership team, what are your greatest concerns moving forward?

   a. What supports do you have?

   b. What supports do you need?

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