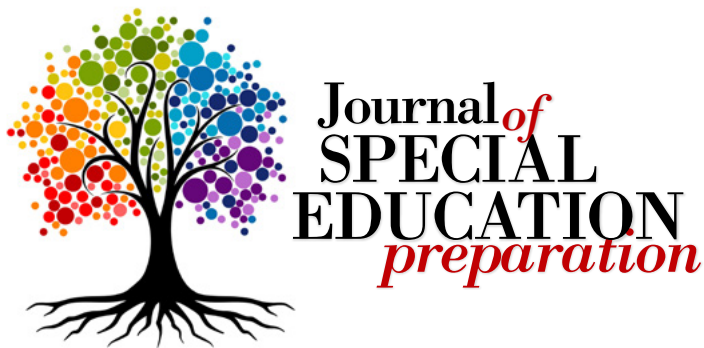




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TABLE *of* CONTENTS

- 4 | Creating New Pathways into the Special Education Teaching Profession: An Introduction from the Guest Editor, *Nagro***

- 8 | Strategies for Attracting, Preparing, and Retaining Special Education Teachers through Alternative Route Programs, *Day, Monnin, Shaheen, Kale-Mokake, Clardy and Stevens***

- 18 | Build the Teacher Pipeline Initiative: A Four-pronged Approach to Address the Teacher Shortage, *Cuccio-Slichko, Ihle and Gish***

- 26 | Increasing Enrollment and Diversity in Special Education Preparation Through Grow Your Own Programs, *Brown and Riden***

- 38 | Collaborative Grow Your Own Partnerships to Address Persistent Teacher Shortages and Remove Barriers to Becoming a Special Educator, *Stransberry-Brusnahan and Gatti***

- 54 | Leveraging the Paraeducator-to-Teacher Pipeline to Attract and Prepare Special Education Teachers, *Shelton and Cruz***

- 66 | A Tale of Two Grant-Funded Special Education Recruitment and Training Projects Focused on Assistive Technology, *Mason and Choate***

FROM *the*
EDITOR

**Creating New Pathways into
 the Special Education Teaching
 Profession: An Introduction
 from the Guest Editor**

Sarah A. Nagro
*Guest Editor of JOSEP,
 George Mason University*

There are approximately 7.2 million students identified with disabilities in P-12 schools across the United States, or 15% of the total public-school enrollment (National Center for Education Statistics, 2022). According to the U.S. Bureau of Labor Statistics (BLS, 2022) this equated to 476,300 special education public school jobs in 2021. Who are the special education teachers providing a free and appropriate public education to these students in their least restrictive environments as mandated by the Individuals with Disabilities Education Act (IDEA, 2004)? Well, it depends on who you ask.

According to the National Center for Education Statistics (NCES, 2021), there are approximately 442,000 special education public school teachers in the United States making up 10% of the teaching workforce. According to the U.S. Department of Education's Office of Special Education Programs' Director Williams, all special education teachers should hold at least a bachelor's degree, have obtained full state certification, and none should be teaching with an emergency, temporary, or waived certification or license (Williams, 2022). According to a spokesperson from the American Association of Colleges for Teacher Education (AACTE), due to the shortage of fully-qualified teachers, school districts are often reduced to simply hiring someone with a pulse (Gaines, 2022). According to local school district leaders, there are no special education teachers because there are hundreds of vacant positions (Wilkins et al., 2023).

The discussion around the special education workforce and pervasive shortage can become very complicated as there are several factors at play. One key factor is the pipeline of new teachers. According to Dr. Laurie Vander-

Ploeg, the Associate Executive Director of Professional Affairs with the Council for Exceptional Children, we are facing a significant decline in teacher candidate enrollment (Wilkins et al., 2023), and according to Title II data, this issue is further compounded by the significant decline in the number of special education teacher preparation program completers (Day et al., 2023). Yet, the number of students requiring special education services has increased year over year (Day et al., 2023). The bottom line is, regardless of what we have tried, our pipeline is not supplying the special education workforce at the rate necessary to adequately meet the needs of our students with disabilities. This is our call to action. As leaders in the field of special education teacher education, we can make a difference. Because, as one father asked, "If [my son's] not getting the help and support now, what does that mean for his future?" (Wilkins et al., 2023).

In this two-part special issue, we aim to share concrete solutions for individual special education teacher educators—and teacher preparation programs more collectively—as we work towards our field's most pressing issue, the special education teacher shortage. Specifically, the first part of this two-part series focused on strengthening existing pathways into the profession (Nagro, 2023). The second part of this series, and the content of this issue, is focused on creating new pathways into the profession.

Collectively, this issue emphasizes the pressing need for innovative strategies to alleviate the shortage of special education teachers while diversifying the teaching workforce. Collaborative efforts between educational institutions, school districts, and community organizations emerge as a key approach.

The development of alternative route programs including “Grow Your Own” programs and Paraeducator-to-Teacher programs stand out as pivotal solutions. Across many examples, authors in this special issue commonly underscore collaboration, targeted recruitment, effective and flexible preparation, and ongoing support and development opportunities as critical components in addressing the shortage of special education teachers and cultivating a diverse and adept teaching workforce. Finally, authors draw clear connections between recruitment, preparation, and retention efforts.

First, Day and her co-authors emphasize the pervasiveness of the special education teacher shortage despite the increased presence of alternative route programs and highlight the need for effective recruitment, preparation, and retention strategies in their article titled, “Strategies for Attracting, Preparing, and Retaining Special Education Teachers through Alternative Route Programs.” In terms of recruitment, Day and her co-authors recommend identifying funding agencies to support alternative route enrollees, publicizing recruitment efforts, and implementing recruitment initiatives specifically intended to attract culturally and linguistically diverse candidates. Additionally, the authors explain the importance of sustained collaboration between teacher educators, local education agencies, and state education agencies to ensure effective preparation and retention of alternative route special education teachers where coursework, mentorship, and licensure requirements focus on best practices and provide a sense of continuity and stability for teacher candidates.

Second, Cuccio-Slichko, Ihle, and Gish discuss a wraparound approach

to recruitment and retention of teachers across elementary, secondary, and special education fields especially in high-needs districts in their article titled, “Build the Teacher Pipeline Initiative: A Four-Pronged Approach to Address the Teacher Shortage.” Cuccio-Slichko and her co-authors discuss four main strategies that include offering free housing for undergraduate students majoring in teaching-related programs, providing grants for career changers pursuing graduate education degrees, optimizing delivery models to increase flexibility for teacher candidates, and offering timely professional development opportunities to educators. The authors also discuss their new program structure as they respond to the changes in New York State where special education certification now includes all grades P-12.

Third, Brown and Riden outline the process of developing and implementing “Grow Your Own” programs to address shortages in special education teachers and diversify the teaching workforce in their article titled, “Increasing Enrollment and Diversity in Special Education Preparation Through Grow Your Own Programs.” In this article, Brown and Riden emphasize the need for collaboration between local school districts and neighboring institutions of higher education with particular focus on identifying specific needs, forming partnerships, employing targeted recruitment strategies, and providing comprehensive supports for success. The authors highlight the potential pathways into the special education profession for high school students and paraprofessionals and underscore the positive implications of diversifying the workforce, including improved outcomes for diverse students and inspiring more individuals of color to pursue teaching careers.



In this two-part special issue, we aim to share concrete solutions for individual special education teacher educators — and teacher preparation programs more collectively — as we work towards our field’s most pressing issue, the special education teacher shortage.

Fourth, Stansberry Brusnahan and Neilsen Gatti describe district-serving pathways to address teacher shortages and increase diversity within the teaching workforce by recruiting and preparing local community members to become teachers in their article titled, “Collaborative Grow Your Own Partnerships to Address Persistent Teacher Shortages and Remove Barriers to Becoming a Special Educator.” Two models are described in the article: the Teacher Residency Model, where pre-service educators have a year-long apprenticeship alongside experienced mentors, and the Work and Learn Model, which adapts the residency model by allowing candidates to serve in paid paraprofessional or provisional teacher roles. Stansberry Brusnahan and Neilsen Gatti emphasize the importance of partnerships, preparation strategies, and financial support to impact recruitment, training, and retention of teachers.

Fifth, Shelton and Cruz discuss approaches to transitioning paraeducators to certified special education teachers in their article titled, “Leveraging the Paraeducator-to-Teacher Pipeline to Attract and Prepare Special Education Teachers.” Shelton and Cruz share details about partnering with neighboring school districts to offer paraeducators an alternative pathway into the profession that includes tailored coursework, internships, and job-embedded assignments as well as ongoing professional development to support paraeducators during their transition to teaching. Ultimately, Shelton and Cruz point to these types of alternative route programs as a successful approach to diversifying the teacher workforce and addressing the special education teacher shortage.

Finally, Mason and Choate explain two grant-funded projects focused on addressing the shortage of qualified special education teachers and enhancing their skills in using assistive technology

Collectively, this issue emphasizes the pressing need for innovative strategies to alleviate the shortage of special education teachers while diversifying the teaching workforce.

to support K-12 students with disabilities in their article titled, “A Tale of Two Grant-Funded Special Education Recruitment and Training Projects Focused on Assistive Technology.” Mason and Choate discuss both teacher preparation and professional development options that can improve special education teacher skills and confidence with the integration of assistive technology into teaching practices, ultimately enhancing student learning outcomes in special education programs. Ultimately, the authors recommend improved assistive technology training and implementation as a way to increase student independence and reduce special education teacher workload concerns which can lead to teacher burnout.

Taken together, this collection of articles offers concrete strategies for creating new pathways into the special education teaching profession. I would like to conclude by thanking Dr. Andy Markelz and his associate editors for allowing me to be part of this special issue series. Thank you to the authors for their high impact contributions. I also want to thank the awesome JOSEP reviewers for their support of this issue. Finally, I would like to thank OSEP funded doctoral students Gino Binkert, Christopher

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Strategies for Attracting, Preparing, and Retaining Special Education Teachers through Alternative Route Programs

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ABSTRACT

To address the national teacher shortage, the federal government has permitted alternative route preparation programs in an attempt to increase the supply of licensed teachers. Alternative route (AR) programs vary by state, but generally aim to train teacher candidates who do not have a traditional education preparation background to fulfill high-need teaching areas, such as special education. As a result, many AR special education programs are housed within various institutions of higher education across the United States. However, teacher educators often bear the responsibility to develop and sustain ARs within their institution of higher education with little guidance. The purpose of this manuscript is to provide a pillar framework for teacher educators in attracting, preparing, and retaining high quality AR special education teachers. Research-based strategies specific to AR infrastructure and teacher preparation policy implications are discussed.

KEYWORDS

Alternative routes, education policy, special education teacher preparation, teacher retention, teacher recruitment

Over the last several decades, policymakers have strategized ways to combat teacher shortages by permitting various options to traditional preservice preparation to increase the teacher workforce (U.S. Department of Education [USDOE], 2020). Alternative route (AR) programs are one policy solution that aims to increase teacher supply by providing nontraditional pathways to obtain teacher certification (Day & Nagro, 2023). Although once viewed as the antithesis of traditional teacher preparation programs (Ng, 2003), ARs are now more accurately viewed on a continuum and vary greatly amongst each other (Day et al., 2023; Rosenberg et al., 2023). AR preparation programs differ in their program characteristics, participants, and infrastructure (Rosenberg & Sindelar, 2005), but are generally perceived by teacher candidates as (a) cost effective (Sindelar et al., 2012), (b) a viable preparation pathway for culturally and linguistically diverse teachers (Scott, 2019; Sutton et al., 2014), and (c) geographically desirable for teachers in rural and urban areas (Ault et al., 2019; Clark & Isenberg, 2020). As such, ARs have increasingly grown in popularity in special education teacher preparation.

Within special education teacher preparation, ARs have proliferated (Rosenberg & Sindelar, 2005), and they continue to increase in popularity throughout the United States (USDOE, 2022). For example, Day et al.'s (2023) analysis showed the number of graduates who earned a special education teaching license in traditional preparation programs decreased by a steady average of -4% each academic year from 2012-2013 ($N = 25,596$) to 2019-2020 ($N = 19,435$). By contrast, AR programs in special education showed increasing trends representing an annual graduate mean increase of +6% each academic year from 2012-2013 ($N = 5,264$) to 2019-2020 ($N = 8,610$). Special education AR programs show no signs of diminishing in the years to come, and special education teacher educators need to be prepared for this growing

teacher candidate population. However, there is little guidance for teacher educators to effectively address the exigencies of this nontraditional population within special education preparation. In addition to preparing AR special education teacher candidates, teacher educators also often bear the responsibility to develop and sustain ARs within their institutions of higher education (Rosenberg et al., 2007). Therefore, the purpose of our paper is to provide strategies for teacher educators in attracting, preparing, and retaining high quality AR special education teachers. We provide research-based strategies within three pillars specific to special education (see Figure 1), so that future teachers in AR programs are effectively prepared in instructing students with disabilities.

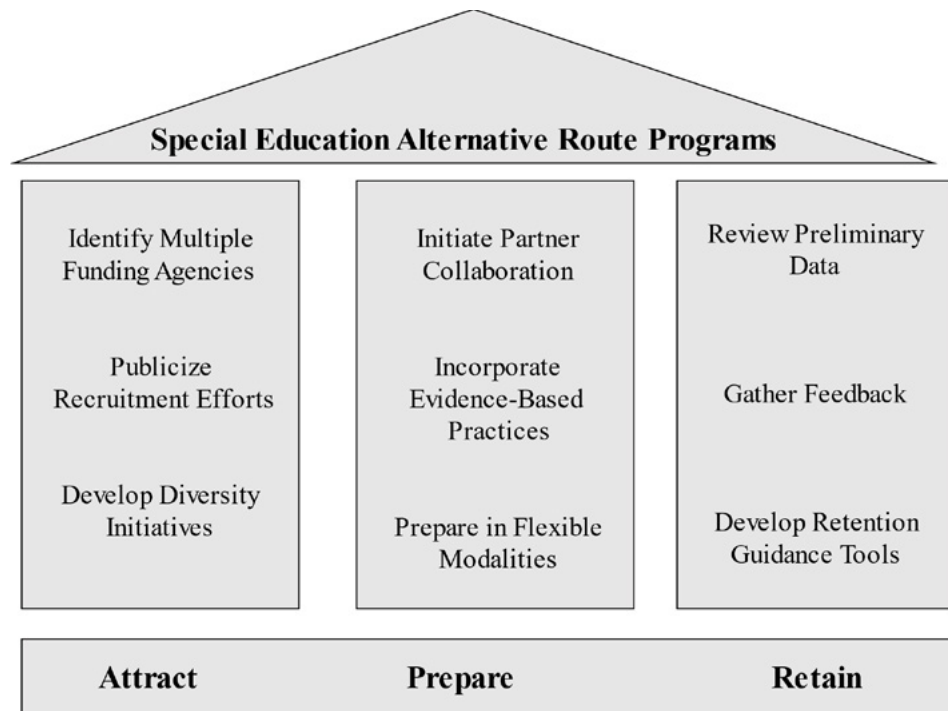
ATTRACTING AR SPECIAL EDUCATION TEACHER CANDIDATES

Although ARs have proliferated, shortages have not been diminished. Special education ARs provide a partial solution in addressing the shortage of teachers, specifically those serving students with disabilities who require a highly qualified special education teacher (USDOE, 2004). Effective recruitment of AR special education teacher candidates requires (a) multiple funding agencies to support enrollees, (b) publicizing the recruitment efforts to attract teacher candidates, and (c) recruitment initiatives to attract culturally and linguistically diverse teacher candidates into AR programs.

Identifying Funding Agencies to Support Enrollees

Prospective teachers are often faced with the financial burden of affording a teacher preparation program (e.g., tuition, technology, textbooks; Sindelar et al., 2012). Therefore, we recommend teacher educators and AR program

FIGURE 1: Pillars of Special Education Alternative Route Programs



directors identify multiple funding agencies to support enrollees. In a study examining the cost effectiveness of ARs in special education teacher preparation, Sindelar et al. (2012) estimated the average cost per completer of an AR program to range from \$5,567 for local programs, up to \$14,522 for internship programs, and \$14,318 for step-up programs. These AR expenses were drastically lower than enrollment in traditional preparation programs housed in public institutions, which consisted of two-year enrollment costs of \$31,000 in undergraduate studies and \$25,000 in graduate studies. Given the rising cost of higher education and inflation expectations, it is likely that this cost has only increased (USDOE, 2022). In a survey assessing special education teacher’s perceptions of their AR program’s effectiveness, over 75% of the respondents expressed that the cost of the AR program influenced their decision to enroll (Scott et al., 2019). Furthermore, 90% of the special education AR teacher respondents

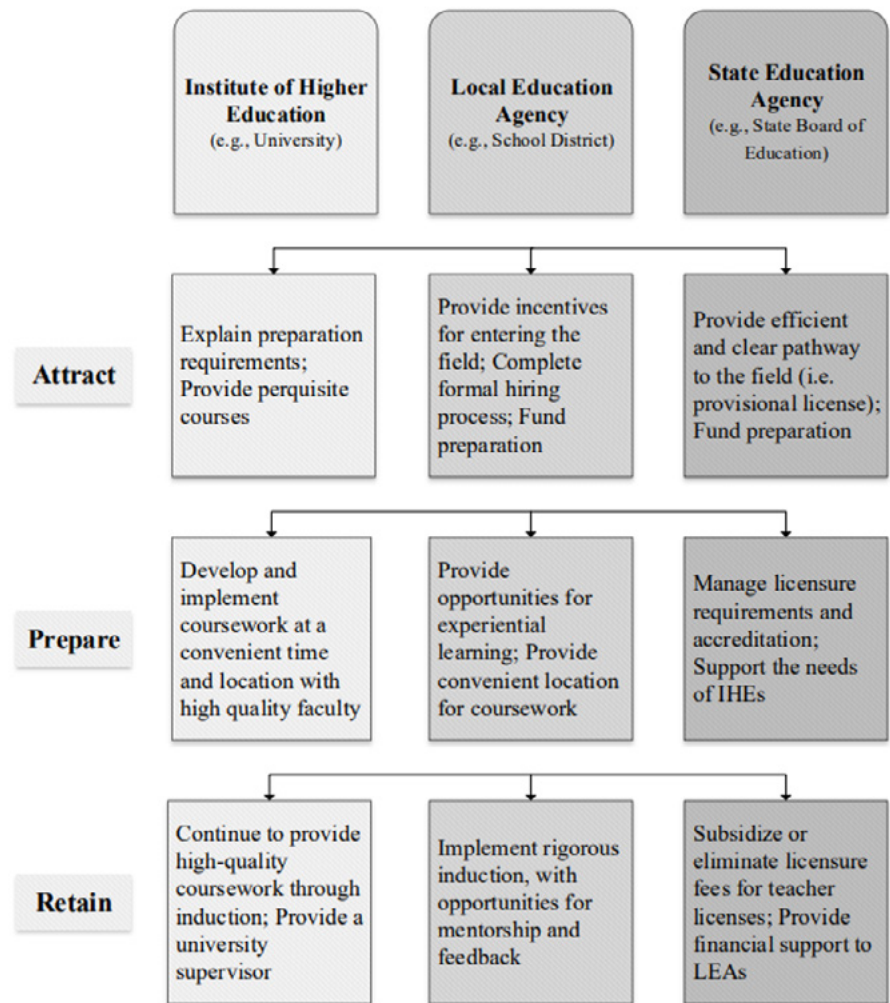
in the survey indicated that they would not have pursued certification if the certification cost were higher than they could afford. As a result, we propose that teacher educators and affiliated partners identify multiple sources of funding to support enrollees to obviate the financial burden of attending a special education teacher preparation program. Providing funding directed to teacher candidates enrolled or planning to enroll in AR programs can be a valuable marketing tool to help offset the costs of attending (Chamberlin-Kim et al., 2019).

Fortunately, there are state and federal funding sources for those looking to obtain their special education license through an AR program. In a survey of special education AR certification programs, Rosenberg et al. (2007) identified the following agencies responsible for funding for 235 AR programs: state education agencies (SEAs), institutions of higher education (IHEs), local education agencies (LEAs), and the federal government. University teacher prepara-

tion directors also indicated LEA-SEA and IHE-SEA-LEA partnerships as additional sources of program funding, which supports preparation infrastructure and may alleviate the tuition cost for prospective teacher candidates. Federal funding has also shown promise in further supporting the financial needs for AR special education teacher candidates. For example, Washington state has a competitive federally funded personnel grant called the Alternative Route Block Grant to support IHE and LEA partnerships in developing ARs in key shortage areas. The Alternative Route Block Grant supports teacher candidates with scholarships of \$8,000 per year. AR teacher candidates must agree to teach in a Washington public school for 2 years (Garcia et al., 2019), thus setting a minimum retention threshold once they enter the special education workforce. This grant program is an example of a state that utilized federal funding to address the challenge of recruiting and retaining teachers in high-needs schools by providing financial assistance to AR teacher candidates.

Another example of teacher educators utilizing federal funding for AR special education recruitment is The University of Utah (Jameson et al., 2019). From 2004 to 2018, The University of Utah alternative teacher pathway recruited AR teacher candidates to earn a license in low incidence disabilities through an Office of Special Education Program (OSEP) funded personnel preparation grant (H325K) and state improvement funding. These multiple sources fully covered the AR teacher candidates' tuition and books, provided them with a laptop, and offered them a stipend to offset any additional costs. As a result, AR teacher recruitment increased by 250% and was sustained for the duration of the four-year grant. Special education AR enrollees reported that they would not have been able to manage the financial

FIGURE 2: Opportunities for Collaboration in AR Teacher Education



Note. IHE = institution of higher education; LEA = local education agency

burden without them. Both Washington and Utah can be seen as exemplars of successfully identifying multiple agencies to support recruitment efforts. Offering financial support to prospective teacher candidates is undoubtedly an effective method to attract individuals seeking low-cost entrance into special education; however, these efforts to recruit special education teachers must be communicated and accessible to those interested or exploring teaching students with disabilities as a career.

Publicize the AR Recruitment Efforts

Publicizing AR programs is an effective way to spread the word that AR programs are a viable and efficient way to enter the field (OSEP, 2022). Hollo et al. (2019) provides several strategies that SEAs should consider for effectively publicizing ARs. For example, the authors noted that states often use terminology unique to their settings, which may confuse prospective teacher candidates. Universal vocabulary pertaining to ARs can be an effective solution, allowing better understanding of the teacher preparation information. In addition, states are often not explicit in their language regarding certification

through AR programs. The authors noted that during their data collection, they were sometimes unsure if the ARs included a special education endorsement. An example of an effective strategy can be found with the Virginia Department of Education's explicit mention that special education endorsement may not be obtained through testing. Explicit language in this regard eliminates unnecessary confusion. Another barrier to teaching certification discovered by Hollo et al. (2019) was overly complicated search pathways on state websites and the difficulty of obtaining certification information over the telephone because access to a certification specialist was only available to those who can provide a state teaching license number. As a result, teacher educators are well-advised to publicize their AR program through digital advertising such as websites, interest webinars, or email listservs. Strategies can then be leveraged by teacher educators in recruiting a highly qualified and diverse special education teacher workforce through ARs.

Diversity Recruitment Initiatives

Cultivating a culturally and linguistically diverse (CLD) special education teacher workforce is critical to meet the needs of PK-12 students with disabilities (Scott & Proffitt, 2021). Federal, state, and local agencies are developing a variety of initiatives to attract highly qualified CLD special education teacher candidates. For example, the U.S. Department of Education recently continued their efforts to strengthen and diversify the teacher workforce through an \$8 million grant to the Augustus F. Hawkins Centers of Excellence that supports high-quality teacher preparation programs at historically black colleges and universities (HBCUs), minority serving institutions (MSIs), and tribal college and universities (TCUs) (USDOE, 2022). HBCUs, MSIs, and

TCUs prepare more CLD teachers than predominantly white institutions (PWIs) and partners predict Hawkins Centers of Excellence support will assist with the recruitment and retention of diverse SETs (USDOE, 2023).

Some AR programs within PWIs are successful in attracting CLD special education teacher candidates through a variety of methods (e.g., Bianco et al., 2019; Delgado et al., 2021; Scott, 2019). We posit that teacher educators can leverage these diversity initiatives to attract highly qualified special education teacher candidates in their respective ARs, which have historically been appealing for CLD teachers (Scott et al., 2019). For example, Carver-Thomas (2018) identified (a) service scholarships/loan forgiveness programs, (b) teacher residencies, (c) grow your own programs, and (d) mentoring and support programs as promising strategies to attract CLD special education teacher candidates.

Service scholarships and loan forgiveness programs provide tuition support or reimbursement for students who commit to teach in high need schools or subject areas for a predetermined number of years. AR programs like the North Carolina Teaching Fellows Program (see <https://myapps.northcarolina.edu/ncteachingfellows/>) and Minnesota's Collaborative Urban and Greater Minnesota Educators of Color Program (see <https://mn.gov/pelsb/assets/>) serve as effective examples of service scholarships recruiting CLD special education teacher candidates by offsetting the burden of higher education cost. Teacher residency programs are also known to recruit CLD special education teacher candidates through partnerships between LEAs and IHEs. They typically subsidize and enhance teacher preparation for high need schools and subject areas. For example, Boston Teacher Residency and San Francisco Teacher

Residency recruit high percentages of CLD candidates, both having more than 50% of their teachers identifying as CLD. Whereas, Grow Your Own programs recruit high school students, paraprofessionals, after-school program staff, and other community members as potential teacher candidates (Bianco & Marin-Paris, 2019). These candidates are more likely to be representative of their local community and remain as teachers after obtaining their teacher license. For example, the South Carolina Teacher Cadet and Pathways2Teaching program provide CLD high school students with (a) opportunities to learn about the teaching profession, (b) college credit, and (c) assistance with identifying and applying to college. Lastly, mentorship and support programs offered to CLD AR teacher candidates are another effective strategy for recruiting and retaining special education teachers. Call Me Mister (acronym for Mentors Instructing Students Toward Effective Role Models), California Mini Corps, and The Fellowship: Black Male Educators for Social Justice provides CLD teacher candidates with mentorship in a cohort system for social and cultural support (see <https://www.clemson.edu/education/programs/programs/call-me-mister.html>). In addition to robust teacher mentorship, these programs also offer CLD teacher candidates loan forgiveness, academic and peer support, preparation for state licensure exams, and assistance with job placement. Teacher educators can replicate many of these successful diversity initiatives to recruit highly qualified CLD special education teacher candidates within their respective ARs. Successful teacher candidate recruitment is the first step in fostering a prosperous AR special education teacher program which is ultimately sustained through a robust preparation of teacher candidates.

PREPARING AR TEACHERS

The abbreviated nature of some AR preparation programs combined with the unconventional sequence in which teachers are prepared may lead some to question the quality of preparation. Indeed, AR preparation programs vary widely in quality (Day et al., 2023; Rosenberg et al., 2023). It is also true that research on AR teacher quality compared to traditionally prepared teachers is not as conclusive as some may claim (Huang & Moon, 2009; Whitford et al., 2018). What is clear from decades of research regarding special education teacher preparation is the benefits of stakeholder collaboration, the inclusion of robust teacher mentoring, the opportunity to practice implementing evidence-based practices, and the ability to meet candidates' needs using a variety of different modalities. These special education teacher education components, when used in conjunction by teacher educators, can be applied to AR programs to effectively prepare teacher candidates.

Preparation Collaboration

Effective AR programs require collaboration among teacher educators and other partners to ensure that coursework, mentorship, and licensure requirements are in alignment (see Figure 2). Concerning the program itself, teacher educators are most typically responsible for providing pedagogical coursework (Rosenberg et al., 2007). Therefore, teacher preparation programs must attract, prepare, and retain faculty to teach the courses. Teacher licensure changes at the state level also impact teacher preparation programs as coursework must be developed or modified to meet state regulations. Consequentially, teacher educators spend considerable time and energy ensuring their programs meet accreditation standards and are approved by the SEA.

Furthermore, many effective AR programs have similar program orga-

nization infrastructures that can add to their efficacy. Namely, they include teacher educators facilitating robust mentorship and supervised fieldwork with LEAs. Rosenberg et al. (2007) examined 101 AR programs and found that roughly half of AR teacher candidates had received no more than 3 months of training before becoming teachers of record. Even so, regardless of the length of preparation prior to entering the classroom, most AR programs lasted more than 18 months, and more than 90% of the reported ARs included mentorship and supervised fieldwork. Rosenberg et al. (2007) noted, "...complementing the time in the classroom with substantive standards-based training and effective support minimizes the level of risk involved with an inexperienced teacher" (p. 235).

Thus, teacher educators often work in close alignment with LEAs regarding the mentorship and clinical supervision of AR special education teacher candidates. After all, AR teachers are being prepared to work for LEAs; therefore, formal partnerships between program providers such as IHEs and LEAs can provide significant benefits for both partners and, most importantly, a streamlined preparation program with wrap-around support for AR teachers. For example, Grow Your Own programs (PESB, 2016) or cohort programs (Mastropieri et al., 2008) can provide a seamless experience for AR teachers due to strong collaboration between teacher educators and LEAs. The LEA has an essential role in preparing AR teachers by providing mentorship during their induction. Supports during induction, such as relevant professional development and mentoring, are critical components of retaining novice teachers, particularly alternatively prepared teachers (Hunt et al., 2013). Therefore, we posit the importance of teacher educators collaborating with LEAs to ensure special

education AR teacher candidates receive adequate mentorship to instruct students with disabilities.

Additionally, teacher educators also often assume the collaborative role with SEAs to meet teaching licensure requirements through ARs (Rosenberg et al., 2007). The SEA must collaborate closely with the AR to ensure that licensure and accreditation requirements are being met. SEAs vary in the rigor of their education requirements, particularly regarding AR special education programs. If states have a strong and organized licensure program with clear requirements for special education teachers depending on their preparation program, then teacher educators can better facilitate coursework relevant to preparing profession-ready teachers.

Mentorship During Preparation

Mentorship and supervised fieldwork are vital components of any successful teacher preparation program but are particularly useful for AR programs because teacher candidates are often also teachers of record while completing preparation (Scott et al., 2019). Mentorship refers to licensed teachers or instructional coaches collaborating with novice teachers to plan lessons, evaluate instruction, and reflect on teaching practices (USDOE, 2022). Mentor teachers can support novice special education teachers with various other tasks, including family communication, classroom management, assessing learning, case management, and other LEA or school-specific tasks (USDOE, 2022). Regarding the specific components of mentoring, Humphrey et al. (2007) found that AR teachers appreciated observing their mentor's instruction, discussing student progress, planning lessons, and receiving instructional materials. Therefore, we recommend that novice teachers and mentors are paired based on their teaching responsibility to improve the

likelihood of a successful mentoring experience. Specifically, special education AR teachers should have a high quality and an experienced special education teacher serve as their mentor. This mentor teacher should have experience implementing evidence-based practices because an essential role of the mentor teacher is directing novice teachers to evidence-based practices and helping them to implement them in their own classrooms.

Incorporating Evidence-based Practices in AR Preparation

Evidence-based practices (EBPs) are instructional practices that support students with disabilities and have been deemed effective based on research and professional experience (Cook et al., 2008; McCray et al., 2017). Many teachers, including AR teachers, may receive only an introduction to these practices in their coursework. Even so, they may build significant declarative knowledge (i.e., general facts) about them (Peeples et al., 2019). This might include a cursory understanding of what they are and their utility. However, many AR special education teacher candidates have not yet had the opportunity to practice implementing EBPs until near the end of their coursework, if at all. This is problematic as the findings from decades of research are clear: carefully sequenced, well-scaffolded opportunities to use EBPs and obtain high-quality feedback in an authentic setting is a critical component of effective teacher preparation (Billingsley & Bettini, 2017; Leko et al., 2015). These opportunities for instructional practice most commonly occur in clinical experiences, often called field experiences, internships, or student teaching. Yet, there are concerns regarding AR teachers' access to practice-based opportunities before entering the classroom as a teacher of record (Darling-Hammond & Skyes, 2003;

Gaines, 2022). Although these concerns are reasonable, Day et al. (2023) found that approximately 84% of all special education AR programs at IHEs require some form of clinical experience. In contrast, only 61% of special education AR programs not affiliated with an IHE required some form of clinical experience, which warrants preparation concerns.

Given the pervasiveness of special education teacher shortages, it is important that we keep in mind that we are not preparing teachers to work for only one or two years. Furthermore, in any preparation program, striving to produce expert teachers who can step foot in a classroom only after they are perfectly polished is unrealistic. Our preparation of teachers will ideally pay dividends for years to come. As a result, we must provide all novice AR teachers with the opportunity to hone their craft and receive feedback, whether preservice or while working as a teacher of record. AR programs that do not currently require some form of clinical experience should consider doing so. Partnering with LEAs through a school-university partnership may be an efficient way to connect AR teachers with mentors. School administrators should facilitate professional development specifically for this growing cohort of teachers and regularly observe their instruction. Incorporating observation, guided feedback, and reflective practice into induction at the school level could also be a way to improve teacher quality, increase teachers' feeling of administrative and collegial support, and improve their overall retention rates (Kunemund et al., 2022; Nagro & Monnin, 2022).

Preparation in Various Modalities

As teachers do with their PK-12 students, teacher educators must meet candidates where they are, both met-

aphorically and literally. Providing opportunities for different modalities of AR instruction is one way to do this. The COVID-19 pandemic has shifted how we communicate, work, and attend classes. It has provided opportunities and infrastructure for higher education professionals and AR special education teacher candidates to learn and work in a virtual setting. Though there are drawbacks, virtual learning has expanded teacher candidates' access to high-quality instruction. This is particularly true for AR teacher candidates, who are more likely than traditionally prepared teachers to be career switchers, older, and currently working in schools (Rosenberg et al., 2007). Teacher educators within IHEs and other non-IHE programs should consider different instructional modalities for their AR teacher candidates. For example, virtual learning opportunities may allow instructional access to AR special education teachers who are geographically bound, such as those that live in rural areas (Jameson et al., 2019; Sutton et al., 2014). Similarly, asynchronous, bichronous, or hybrid coursework may make accessing coursework possible for those who work full-time during the day. At the very least, coursework should occur at a location (i.e., centralized, affordable to park) and at a time (i.e., evenings) convenient for AR teachers. When special education teacher candidates receive flexible, evidence-based instruction and sufficient mentorship in AR preparation, retention in the special education workforce may be positively impacted.

RETAINING AR TEACHERS

To ensure that AR teachers are well-prepared and retained in the special education workforce, it is essential to examine the current methods for providing feedback, accessibility, and alignment with teacher demographics. This can lead to better-prepared AR teachers who

will remain in the field for years to come and ultimately improve teacher retention rates. While there is a dearth of research regarding the retention of AR special education teachers, we leverage OSEP and other research-based retention recommendations to provide teacher educator suggestions.

Leveraging Data for AR Program Improvement

To improve AR teaching programs and retain special education teachers in the field, it is important to review preliminary data on AR teacher candidate outcomes (OSEP, 2022). This can include gathering information on completion rates, state test scores, and field placement observations. Additionally, gathering feedback from the AR faculty, teacher candidates, and affiliated LEA personnel is crucial in understanding the strengths and areas for improvement of the program, as well as the needs and perspectives of the partners directly involved. This data-driven information can then be used by teacher educators to adjust and improve their AR program. We hypothesize that gathering feedback from various entities and leveraging the information to make data-driven decisions in ongoing AR program improvement will ultimately lead to better special education teacher retention. Additionally, reviewing teacher candidate outcome data (e.g., state licensure test scores, special education PRAXIS, annual evaluations of novice AR special education teachers, etc.) also enables a more comprehensive understanding of program characteristics and variations across programs.

For successful retention of new AR special education teachers, teacher educators can communicate with school leaders about the importance of building integrated school cultures where collaboration and continuous learning are emphasized. The support of school

administration is also seen as critical, as new special education teachers may stay in schools where they feel supported even if they face resistance from others within the school community (Macedonia, 2021). AR pre-service and induction experiences are significant in promoting professional integration and success, satisfaction, and retention in teaching (Jorissen et al., 2002). These findings can be useful for program planners and teacher educators looking to address teacher shortages and improve the current state of teacher preparation and induction.

Sustaining School District Collaboration

We recommend teacher educators establish ongoing mentorship and professional development opportunities after candidates complete an AR program to improve novice teacher outcomes. For example, Nagy and Wang (2007) surveyed 155 AR teachers across high schools in the state of New Jersey and found that practices to support AR teachers differed significantly across districts. More than half of the AR teachers in the study did not experience a preservice or induction program. Additionally, 40% of AR teachers were found to be teaching subjects in which they did not have an undergraduate or graduate degree or any work experience. The study highlights the need for districts, principals, and mentors to make better efforts to assist AR teachers in their transition to the classroom and to provide equal access to professional support and development.

To provide novice teachers with the necessary tools and resources to excel in their profession and to improve teacher retention rates, it is important to establish consistent and standardized mentorship and support programs. Whitaker (2000)'s survey of 156 first-year special education teachers in South Carolina illuminated that those who felt supported

and had a mentor during their first year were more likely to stay in the teaching profession. Thus, teacher educators can collaborate with LEAs in providing effective professional development and support for novice AR special education teachers. One form of professional development is called "bug in ear" (BIE) coaching to build evidence-based classroom management and instructional skills. BIE devices allow discreet communications between supervisor and teacher where the trainee wears an earbud audio receiver, while the supervisor or coach provides input or feedback through a microphone (Regan & Weiss, 2020). In a longitudinal investigation of eCoaching through advanced online BIE, Rock et al. (2014) examined the effects of BIE technology on teacher performance and student engagement. They found that BIE technology had successful long-term effects, with teachers showing continued improvements in behavior and students showing increased academic engagement. Furthermore, the study found that the use of BIE technology was well-received by participants, with many expressing a desire for continued use. These findings suggest that teacher educators may consider ongoing professional development for AR completers by incorporating BIE technology as a component of their mentorship and professional development offerings.

CONCLUSION

The importance of effective AR programs for special education teacher candidates cannot be overstated. Although there are some challenges, teacher educators can effectively recruit, prepare, and support the retention of highly qualified special education teacher candidates by leveraging our research-based recommendations. Though there are certainly similarities, preparing AR teacher candidates is not the same as preparing teacher candidates who par-

tipitate in traditional teacher preparation programs, and specific considerations must be made to better support them and meet their unique needs. Teacher educators and partners at various levels can work collaboratively to ensure licensure requirements are relevant and are being met by program providers. At the district and school level, strong induction and mentoring programs must instill a sense of wrap-around support for these teachers and foster collegial and administrative support. Similarly, AR teachers must have the opportunity to receive frequent and timely feedback on their instruction and implementation of EBPs. Lastly, because most AR teachers work during the day and their CLD demographics do not mirror the traditional teacher population, consideration should be made for where and how they access their coursework. When done in conjunction, these components are likely to result in better-prepared AR special education teachers who will remain in the field for years to come.

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Build the Teacher Pipeline Initiative: A Four-pronged Approach to Address the Teacher Shortage

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ABSTRACT

To address local and the national teacher shortage, one college has launched the Build the Teacher Pipeline Initiative. The initiative is designed as a four-pronged, wraparound approach to not only recruit new teachers but also empower educators in elementary, secondary, and special education positions. The article outlines the goals and strategies of the four prongs – free housing for new students, scholarships for career changers, flexible graduate study options, and professional development for pre-service and in-service teachers. In collaboration with pre-k to 12 field partners, we are not only recruiting interested high school students but designing professional development opportunities to support existing teachers including our 28,000 alumni. The article will discuss the efforts and outcomes thus far and offer suggestions for replication.

KEYWORDS

Teacher shortage, teacher pipeline, special education, teacher preparation, teacher professional development, Flex graduate programs

Drs. James and Frank are having a conversation following a faculty meeting on enrollment. Admission representatives stated that high school students are less interested in pursuing education degrees. Meanwhile both faculty members receive regular emails from schools desperate for teacher candidates. With the teacher shortage, Dr. Frank feels the pressure from both sides – dwindling enrollment and fewer experienced cooperating teachers in the field. After another faculty member in the meeting expressed concerns regarding teacher burnout, Dr. James began wondering about the feasibility of developing an initiative that would entice prospective students, high school students and career changers, into the teaching profession while simultaneously giving back to alumni and field partners. With teachers leaving the profession and fewer students enrolling, the teacher pipeline is diminishing at both ends. As they continued to brainstorm, Dr. James exclaimed, “what if we launch a creative initiative that addresses both, not just enrollment but also professional development opportunities for our teaching community?” Drs. James and Frank decide to approach administration to ask about funding possibilities and a strategic marketing plan.

THE TEACHER SHORTAGE

Scarcity of newly certified teachers, teacher retirement, and teacher burnout from the COVID-19 pandemic have exacerbated the crisis in education. According to the National Center for Education Statistics (NCES, 2021), the number of full-time and part-time schoolteachers (including charter and private schools) has significantly decreased since the 2017-18 school year. Almost half of public schools in the United States reported vacancies and of those schools, 61% of them attribute the pandemic as the source (NCES, 2022).

In the Learning Policy Institute’s 2016 report, Satcher et al. predicted the crisis prior to the COVID-19 pandemic. The teacher shortage is worse than this report

predicted and is more dire when considering teacher credentials within high-poverty schools (Garcia & Weiss, 2019). The teacher shortage phenomenon impacts not only the school districts that employ educators but also the institutions that train them; school districts struggle to retain current teachers while institutions of higher education (IHE) report a notable decline in teacher program applications. Currently, 51% of teacher vacancies are attributed to teachers leaving the field and 21% to teachers retiring (NCES, 2022). Concurrently, IHE and teacher preparation programs (TPP) reported a 32% drop in enrollment between 2012-13 and 2018-19, as well as a 28% decline in degree completers during the same time (U.S. Department of Education, Office of Postsecondary Education, 2022). With experienced teachers exiting the profession and fewer teacher candidates to replace them, the education of America's children is at stake.

Critical Needs and Current Responses

Teacher vacancies are predominantly reported in the areas of bilingual education, bilingual special education, career and technical education, English language arts, health education, library media specialist, literacy, mathematics, science, and special education, as reported by Zweig et al. (2021), with special education leading as the area with the most vacancies (NCES, 2022).

Exacerbating the problem, teacher shortages in urban, rural, and low socio-economic districts have shown to further widen achievement gaps (Garcia & Weiss, 2019; Dorn et al., 2020). High teacher turnover coupled with unprepared teachers affect student achievement (Cardichon et al., 2020; Kuhfeld et al., 2020) and the recruitment and education of new teachers is estimated to cost districts \$8 billion annually (Garcia

& Weiss, 2019). Low performing and high-poverty schools are particularly at risk when funds are already scarce and are being reappropriated to recruit new faculty (Garcia & Weiss, 2019). Traditionally, school districts that serve primarily students of color are more likely to hire uncertified teachers (Cardichon et al., 2020; Garcia & Weiss, 2019) and this practice disproportionately affects students of color with disabilities (Peyton et al., 2020).

Researchers have demonstrated that teacher preparation and certification positively correlate with student achievement (Boyd, et al., 2009; Darling-Hammond, 2000; Koh, 2022). Boyd, et al. (2009) found the teacher preparation programs that focus on the more practical classroom experiences, specifically those that prepare teacher candidates for their first year of teaching, positively correlated with pupils' test scores with gains shown in NYS Math and ELA exams. Alternatively, the teachers who are not well prepared are more likely to leave the field, given that 44% of teachers resign within their first five years of teaching (Koh, 2022). It is imperative that IHEs not only recruit candidates into TPPs now more than ever but they must also continue to support their practices even after graduation (Reitman & Dunnick Karge, 2019). Researchers have stressed the urgency of a nationally coordinated effort to not only recruit but also retain special educators by calling upon stakeholders for innovative solutions (Billingsley & Betinni, 2019; Mason-Williams et al., 2020).

Since the pandemic, President Biden has urged leaders to utilize the American Rescue Plan Act of 2021 (ARP), Governor's Emergency Education Relief (GEER), Elementary and Secondary School Emergency Relief (ESSER), and Higher Education Emergency Relief (HEERF) funds to address teacher shortages (U.S. Department of Educa-

tion, n.d.). At the state level, some states enacted laws as quick-fix solutions. California's Teacher Recruitment and Retention Act boosted teaching salaries while states like Tennessee and New Mexico amended pension restrictions to allow retirees to return to teaching (Will, 2022). Some states' measures, such as Florida's issuance of temporary teaching certificates for any military veteran with or without a degree (Bartov, 2022), have raised concerns across the nation. It might be a while before districts employ robots and artificial intelligence to teach students, as suggested by Edwards & Cheok (2018); however, innovative solutions continue to be a top priority for states and New York State is no exception.

New York State United Teachers (NY-SUT) estimates that 34% of New York's teachers will retire between 2020-2025 and lead to 180,000 teacher vacancies in the next decade (Saunders, 2022). Vacancies have already impacted New York's large districts, such as Syracuse City School District in upstate New York, where the 2022 school year began with 300 teacher vacancies (Saunders, 2022). In the short term, some districts in New York have offered sign-on incentives. Meanwhile, New York's Governor Hochul removed the income limit for retirees in hopes that many will return to the classroom. Although these efforts may address the immediate crisis, IHEs must be creative and develop initiatives that: (a) diversify the pipeline by encouraging students from all backgrounds to enter the field and (b) build professional learning communities that empower and retain existing teachers.

BUILD THE TEACHER PIPELINE INITIATIVE

Like many small colleges that have experienced a decline in enrollment, bold strategies and initiatives are being discussed across campus. Specific-

ly, solutions that not only recruit new educators but also engage and empower current teachers to address the shortage are urgently required. As a result, the *Build the Teacher Pipeline Initiative* was developed in the Summer of 2022. The four-pronged initiative aims to address the shortage and low enrollment through a holistic approach – incentivizing more undergraduate and graduate students to pursue the teaching profession while supporting current teachers and administrators in their work as a means of reducing burnout and attrition. Figure 1 represents the four prongs of the *Pipeline Initiative*. Next, the four prongs will be discussed in greater detail to include outcomes since the launch.

The initiative launched on October 27, 2022, with a news conference attended by state and local politicians and education leaders; the launch received widespread regional media coverage, highlighting the teacher shortage crisis and offering creative solutions to address it beyond government efforts to lower standards in order to entice more candidates into the pipeline.

Prong 1: Free Housing for Undergraduate Students

The American Association of University Professors points out that the cost of tuition has increased at a much higher rate than family income over the past ten years, making college unaffordable for many (Perna & Odle, 2020). Furthermore, some students experience housing insecurity (Smith & Knechtel, 2019), and the aim of this initiative is to further assist those students with on-campus housing difficulties.

The cost of on-campus housing is approximately 33% of an average student's educational expenses after financial aid is awarded (Office of Institutional Effectiveness, 2022). As part of the *Pipeline Initiative*, an on-campus housing grant is offered to new undergraduate students

FIGURE 1: The Four Prongs of the Build the Teacher Pipeline Initiative



who major in one of seven programs leading to teacher certification. Table 1 displays the programs with the corresponding New York certification area. Grants are available to new first-year and transfer enrollees in the 2023-2024 and 2024-2025 academic years, and students will receive the housing grant for up to four years, enabling them to complete their bachelor's degree program while living on campus for free.

In addition to the housing grant, 98% of the college's undergraduates receive financial aid, often a mix of institutional, federal, and state funds. For students with very low-income families, the College offers students in all majors the *It's Possible* program, which provides tuition gap funding for students whose Expected Family Contribution (EFC) on the Free Application for Federal Student Aid (FAFSA) equals \$0. The *Pipeline Initiative* also includes pledged support from philanthropist Charles Touhey, who is passionate about diversifying the teacher pipeline. Touhey has committed to covering out-of-pocket tuition costs for education majors who identify as students of color. This funding would mean tuition and housing costs will be fully covered for this population of education majors.

Goals and Outcomes of Prong 1

The purpose of the initiative is to reduce the barrier of costs for students who wish to pursue a career in teaching. The institution's goal is to double its undergraduate enrollment in teaching-related majors and address the nationwide decline since 2008 in students pursuing education degrees; thus, effectively helping to fill the pipeline. As of February 2023, education applications were up 46% year-over-year. By reducing the barrier of cost, highlighting the rewards of the field, and focusing on the plentiful job opportunities available as a result of the teacher shortage, the College anticipates it will meet its Fall 2023 goal of doubling education enrollment and possibly exceed that goal for the following cohort, the entering class in Fall 2024, as high school juniors are currently learning about the initiative.

Prong 2: Grants for Career Changers

In its own efforts to address the teacher shortage, New York State removed barriers for those who hold degrees unrelated to education but wish to pursue careers in teaching. One step includes removing the Graduate Record Examinations (GREs) requirement for

TABLE 1: Undergraduate Programs that Qualify for Funding and Corresponding New York State Certification

Undergraduate Programs	NYS Certification Levels
Inclusive Early Childhood	Birth-2 Early Childhood
Early Childhood and Childhood Education	Birth-2 Special Education
Childhood and Special Education	B-2 Early Childhood
English Adolescence Education	1-6 Childhood Education
Social Studies Adolescence Education	1-6 Childhood Education
English Adolescence/ Special Education (BA/MSED)	1-6 Special Education
Social Studies Adolescence/ Special Education (BA/MSED)	7-12 English
	7-12 Social Studies
	7-12 English Adolescence (BA)
	7-12 Special Education (MSED)
	7-12 Social Studies Adolescence (BA)
	7-12 Special Education (MSED)

Note. English Adolescence/ Special Education and Social Studies Adolescence/ Special Education are Dual Degree Programs that lead to a MSED in 5 years.

TABLE 2: Graduate Programs that Qualify for Funding and Corresponding New York State Certification

Graduate Programs	NYS Certification Level
Early Childhood and Childhood Education	Birth-2 General Education
	1-6 General Education
Childhood and Special Education	1-6 General Education
	1-6 Special Education
Adolescence Education	7-12 Adolescence Education
Adolescence and Special Education	7-12 Adolescence Education
	7-12 Special Education

admission to graduate programs in education as this test was thought to create a barrier for busy professionals. As part of the *Pipeline Initiative*, administration and faculty sought to further incentivize career-changers and recent bachelor's degree graduates in unrelated fields to pursue the teaching profession by offering grants for graduate programs

leading to initial certification. The \$1,500 per-semester grant is available for up to five semesters for those enrolling in the College's Master of Education programs listed in Table 2. Like the undergraduate housing incentive, this prong of the initiative seeks to make education more affordable for aspiring teachers.

Goals and Outcomes of Prong 2

Career changers represent a small portion of the graduate enrollment in education programs, but the College seeks to double that population through this initiative with promotion via digital and social media ads, print advertising, and word of mouth advertising through its alumni base. At this point, graduate applications have not increased; however, prospective students often apply during the summer when there are fewer school responsibilities. Since the teacher education and special education programs accept students on a rolling basis (i.e., no application deadline), it is still too early in the graduate application cycle to indicate whether that goal will be achieved for Fall 2023.

The *Pipeline Initiative* targets both recruitment of preservice teachers and retention of veteran teachers. As millennials have become the dominant generation in the workforce, it is important to understand their employment mo-

tivations. Millennials are known for changing careers, and they tend to seek fulfilling, collaborative work environments (Rather, 2018). They also crave feedback (Norris et al., 2017), so pairing veteran and novice teachers provides an opportunity for job-embedded mentoring. In addition, both career changers and longstanding teachers cite social responsibility as the reason for entering the education profession (Alharbi, 2020; Balyer & Ozcan, 2014). Therefore, this partnership has the potential to combat educator burnout at both ends of the pipeline.

Prong 3: Flexible Delivery of Graduate Programs

The Online Learning Consortium defines *Flexible Mode Course* as courses that allow for multiple delivery modes, such as in-person with synchronous online meetings combined with online asynchronous learning activities, allowing for student choice (Sener, 2015). It is essential to deliver master's degree programs in formats that are both pedagogically sound and meet the flexibility needs of today's teachers (Wilson & Alexander, 2021). While many of these programs are delivered on-campus, the faculty also seek to address accessibility by working to move more of the education graduate programs into a hybrid or online format. This flexibility has shown to be especially important for career-changers, who may remain employed while pursuing their studies.

Goals and Outcomes of Prong 3

Several graduate education programs are already offered online, including the Master's of Science in Education (MSED) in Educational Psychology and MSED in Educational Leadership. Online Certificates of Advanced Study in Special Education and Teaching English as a New Language offer the ability for current teachers to earn

Highlighting the positive aspects of teaching is an essential part of encouraging high school students to pursue the field, as much of the narrative around the teacher shortage has focused on teacher burnout and low pay.

additional certifications and serve in expanded or much-needed roles in their schools.

In Fall 2023, pending New York State Department of Education (NYSED) approval, the College plans to move the MSED in Curriculum and Instruction, another program leading to professional certification for those who already hold a bachelor's degree in education, to an online format. Additionally, in September 2022, the New York State Board of Regents voted to establish the Students with Disabilities (All Grades) certificate. This certificate allows individuals to teach students with disabilities in pre-Kinderergarten through grade 12 in New York State public schools. The currently registered programs for students with disabilities (Grades 1-6 or Grades 7-12) need to be phased out by September 1, 2029. Therefore, three new graduate special education programs are pending (NYSED) approval:

- dual certification in general education (B-6) and special education (Pre-K-12),
- dual certification in general education (7-12) and special education

(Pre-K-12)

- second initial certification in special education (Pre-K-12)

All of these certifications will be registered as online programs. Therefore, the courses in these programs will allow for flexible modes of delivery.

Prong 4: Timely Professional Development

The intent of the fourth prong is to empower and support educators in this post pandemic landscape, particularly those who have recently graduated and need the most support (Reitman & Dunnick Karge, 2019). To take a pulse of the field and better understand the unique challenges of current educators, the College hired an external market research company to develop an online survey. In May 2022, 22,403 New York State school superintendents, principals, leaders of private schools, charter schools, and the College's education alumni received this survey. The introduction to the survey promised anonymity to the participants and the market research company kept any personal identifier information separate from the results (R. Wendeln, personal communication, June 20, 2023). The purpose of this non-research study was to gather educators' perceptions of their needs in terms of professional development topics and preferred delivery format (e.g., webinars, on-site programs, stackable courses that lead to a certificate or count toward a degree, discussion forums). The results of the survey poised the College to better design timely offerings that address educators' top priorities.

The online survey yielded a response rate of 3% – 659 respondents. While low, this rate mirrors the post-pandemic drop in response to national surveys (Krieger et al., 2023). Of those respondents, more than half, 51.8% percent, reported that they currently work in a

teaching capacity (e.g., classroom teacher, special education teacher, speech language pathologist). The next largest group of respondents, 28.5% percent, reported working in education, but in a non-instructional capacity (e.g., administrator, counselor, school psychologist). The majority of the respondents, 65.4%, are currently working in a public school system, with 95% of respondents holding at least a master's degree (Prescience Associates, 2022), which is a requirement to maintain teaching certification in New York State.

Most respondents (80% or more) ranked all topics of *Curriculum and Instruction* as important or extremely important. In an open-ended question, respondents offered 148 additional professional development topics, with the following topics as the highest priority:

- social emotional learning and development
- behavior management
- classroom management
- diversity and inclusivity practices
- teaching students with special needs

In terms of professional development format, respondents indicated they were most partial to webinars, with onsite programs and stackable courses ranking second and third in preference.

Goals and Outcomes of Prong 4

Beginning in January 2023, the Spring's webinar series included topics that directly align with the survey results (i.e., mental health, culturally responsive and sustaining practices, teaching English language learners, and social emotional learning). The webinars were scheduled after the school day during a common professional development time for teachers (i.e., 3:30-5:00 PM EST). Webinars featured not only education faculty but community experts and classroom teachers, sharing best practices and expertise.

These professional opportunities were marketed through an email and poster campaign to school leaders and education alumni, as well as targeted digital and social media ads to educators working in the field. The Office of Professional Development and Continuing Education verifies webinar attendance through the webinar hosting software, and the College completes New York State's *Completion of Approved Continuing Teacher and Leader Education (CTLE) Hour(s) Certificate* form as an Approved CTLE Sponsor to verify completion of CTLE hours. The College set a goal of 175 registrations with 100 live webinar attendees per session. The sessions were recorded, and the link distributed to those who were unable to attend live. For the first session in the series, *Surviving the Mental Health Crisis: A Toolkit for Teachers*, 221 participants registered with 119 in attendance. All registrants received a link to the recording and resources.

In addition to the webinar series, the education leadership program – for those seeking to become school building, school district, or school business leaders – have developed additional professional development targeted toward teacher retention through strong leadership. For the general school administrator population, the College has already offered a free webinar on managing generational differences in the workplace with 21 attendees; future webinars are planned to address additional mental health and diversity practices including rebuilding positive culture in schools post COVID-19 and supporting professionals of color in predominantly white schools. With its holistic bench of experts, the College aims to empower educators, school professionals, and school leaders with the tools they need to be successful, continue to feel fulfilled in their work, and persist in the profession.

RECOMMENDATIONS FOR APPLICATION

Highlight the Rewards of Teaching Through Extensive Marketing

Highlighting the positive aspects of teaching is an essential part of encouraging high school students to pursue the field, as much of the narrative around the teacher shortage has focused on teacher burnout and low pay. In its recruitment materials for education majors, the College is highlighting that New York State is one of the highest-paying states in the country, with an average teacher salary of \$87,069 (Walker, 2021). Video and print testimonials from teaching alumni who feel fulfilled in their careers is critical to the narrative shift as well. Additionally, through a series of social media and digital ads and organic social media posts that feature teachers sharing why they teach, recruitment materials may highlight that the field is challenging but also very rewarding.

Extensive marketing efforts also include television and streaming services across New York State. College search portals utilized by students also showcase information about the initiative. Additionally, email and printed marketing posters have targeted high school juniors and seniors, as well as the College's 28,000 plus education alumni. An exhaustive social media and digital ad campaign, newspaper ads, a feature in the College's magazine, Search Engine Optimization (SEO) and paid search result efforts round out the promotional campaign.

Strategically Target Donors and Aid Strategy

As a small private IHE, the College relies on outside funding. Offering free on-campus housing to new undergraduate students, grants to career-changers who pursue master's degrees, and free professional development opportunities

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Jennifer Gish is the associate vice president of marketing and communications for The College of Saint Rose. She is an award-winning communications professional with more than two decades of experience, having worked as a journalist, including as an education reporter for a daily newspaper in south central Pennsylvania, and as a higher education marketer. A first-generation college graduate, Gish is passionate about the power of education to transform lives.

is a significant investment. To fund the initiative, the College pursued individual, private foundation, and corporate donors. Fortunately, media coverage of the teacher shortage has helped the public to better understand the need to recruit additional teachers. The College secured individual donors, who opted to remain anonymous in their gift commitments, as well as private foundation support. The “asks” outlined the College’s longstanding position as a top education degree-granting institution, explained the nationwide decline in students who are pursuing degrees in teaching, and laid out how removing financial barriers helps to incentivize more students to pursue the field.

In December 2022, the Hearst Foundation notified the college it would be awarded a \$250,000 grant to support the *Pipeline Initiative*. In addition to the four-prong plan, the Touhey Foundation pledged to provide tuition gap funding to encourage more students of color to enter the pipeline, recognizing that diverse educator voices are critical for all of our children (Gish, 2022). Enrollment for the Fall 2023 class is still in process, and the amount of funding will vary by each student’s need, so it is not yet known how much the support provided for these students by the Touhey Foundation will total. Meanwhile, pursuit of corporate partners continues, and the College’s Office of Institutional Advancement has identified the *Pipeline Initiative* as a focus of its fundraising work.

Provide Support to Alumni and Field Partners

IHEs rely upon their education graduates and school districts for field experience and student teaching placement, but graduates could also benefit from continued support after graduation as they continue to develop their learning community. IHEs may serve as the center of the professional learning community, particularly among new-

ly hired teachers and those who have recently graduated. The authors suggest surveying alumni to gather professional development needs, developing targeted professional development across modalities (e.g., webinars, newsletters, lectures) that address their needs, and leveraging community experts. IHEs can work with their Office of Professional Development and Continuing Education to offer continuing education credit or possibly micro credentialing for little cost.

CONCLUSION

Initiatives to address the teacher shortage crisis require a multi-pronged approach across various stakeholders that leverage federal, state, and private funding sources. The authors acknowledge it is not enough to recruit a diverse population into teaching by marketing the profession as a rewarding and fulfilling career; it is imperative that IHEs secure funding to make the degree affordable while offering flexible graduate courses. Furthermore, IHEs should also serve as a center for timely, professional development that empower education professionals especially during the critical first five years of teaching. Professional development may just be one aspect of supporting new teachers, but it could lead to actionable practices and possible mentor/mentee relationships. It is imperative to develop initiatives that simultaneously recruit new teacher candidates into education programs while addressing teacher retention, particularly in the most imminently needed positions.

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Increasing Enrollment and Diversity in Special Education Preparation Through Grow Your Own Programs

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ABSTRACT

Although the teacher education shortage is at an all-time high across the United States, particularly in the field of Special Education, an innovative, multi-tiered approach can help colleges and universities address this scarcity. Teacher preparation programs can bolster their recruitment, training, and delivery of high-quality special educators while also focusing on diversifying the special education teacher workforce. This paper will present a step-by-step approach to address the special education teacher shortage through a Grow Your Own Model. Using this approach as a blueprint for success, systems of higher education can help address the current special education teacher shortage crisis.

KEYWORDS

Special education, teacher shortage, diversity, Grow Your Own

As colleagues at a mid-size university in the Special Education Department gather for their end of year department meeting, looming on the agenda is a challenging and persistent issue. Dr. Pickens, the Department Head, shares updated statistics surrounding the incoming pre-service teacher candidate in educational programs for the upcoming semester. The numbers show enrollment is down by 30 percent, and the number of diverse candidates applying for educational programs are dismal. The department had much anticipation for the upcoming year, and they leave concerned and a bit defeated. Dr. Pickens wonders, “How did this happen and what can we do to increase enrollment numbers?” Dr. Pickens suggests that faculty from Early Childhood Special Education (ECSE) and Special Education (SPED) programs form a summer task force to investigate avenues for increasing enrollment. After all, the community housing the university is facing considerable special education teacher shortages. This particular university is situated in a city with a population comprised of immigrants from over 73 different countries. The task at hand is to devise a plan for pre-service teacher recruitment in SPED and ECSE (both in overall numbers and to represent the diversity within the city of the university). Dr. Pickens suggested colleagues look at a Grow Your Own model. Professors from those disciplines decide to meet weekly, over the summer, to address this concern.

The Special Education Teacher Shortage Crisis

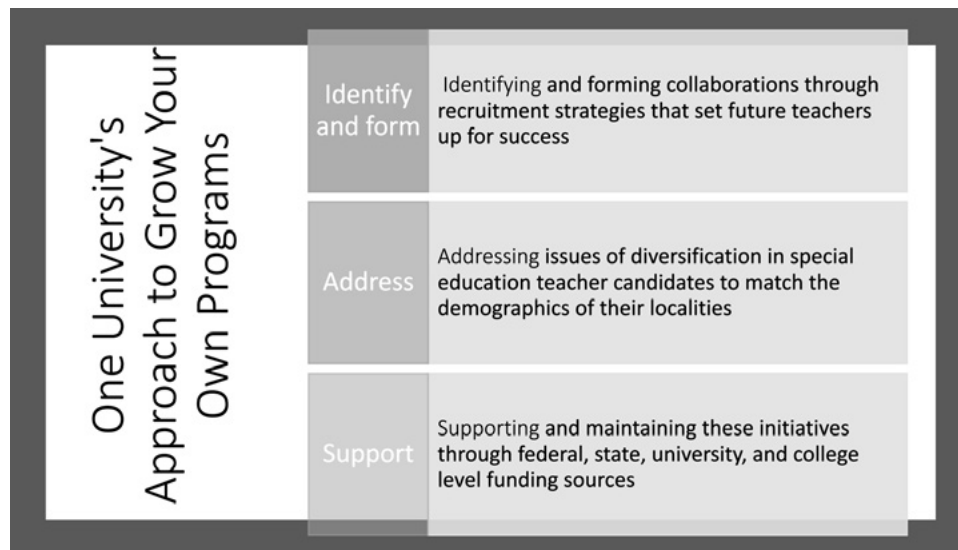
Department meetings like this vignette are not uncommon. The special education teacher shortage threatens the federally mandated education students with disabilities must receive. In the United States, 49 states report shortages of special educators (National Coalition on Personnel Shortages in Special Education and Related Services, n.d.), and enrollment in teacher preparation is lower than at any point since the National Center for Education Statistics (NCES, 2016) began collecting these data. PL 94-142 (Individuals with Disabilities Education Act [IDEA]) first passed in the United States 1975, and special education teacher shortages have existed

since this time. Although educational opportunities were available to some students with disabilities before 1975, this law mandated, for the first time, that public schools educate all students, thus contributing to a dramatic increase in demand for special educators (Dewey et al., 2017). The need for special educators has only increased as time has passed, and the demand for special educators consistently exceeded the supply (McLeskey & Billingsley, 2008). An additional concern is special educator attrition, as it worsens the issue, resulting in the hiring of unqualified individuals working in classrooms (McLeskey & Billingsley, 2008).

Nearly half (44 percent) of our US public schools report full- or part-time teaching vacancies, according to data released by the National Center for Education Statistics (NCES, 2022), within the U.S. Department of Education's Institute of Education Sciences (IES). High poverty schools bear the brunt of substantial turnover which reduces the likelihood that highly qualified special educators will teach students with disabilities who live in poverty (Levin et al., 2015). Of public schools with at least one reported vacancy, 61 percent specifically identified the COVID-19 pandemic as a cause of increased teaching and non-teaching staff vacancies (NCES, 2022). Of those schools, special education was the position with the most vacancies. COVID-19 exacerbated this shortage as well as the public and political scrutiny educators face.

A closer look at the teacher shortage shows a dearth of representation in the teacher workforce. Students with disabilities in the United States are increasingly diverse, and more than half are now students of color including Black, Hispanic/Latinx, Asian, Native Hawaiian/Other Pacific Islander, Native American/Alaska Native, and multiracial students (NCES, 2016). Yet,

FIGURE 1: A Three-Pronged Approach to GYO



teachers, including special education teachers, have been historically White (Ingersoll & May, 2011), with teachers of color (TOC) representing only 18% of the teacher workforce. This lack of representation historically meant White special education professionals primarily taught students of color with disabilities. (Boveda & McCray, 2021; Kozleski et al., 2014). Data suggest there is a wide gap between the underrepresentation of special education teachers of color (SETOC) in local schools (Kozleski & Proffitt, 2020) and the overrepresentation of students of color in special education (National Center for Learning Disabilities, 2020). That is, students of color with disabilities can complete an entire public-school career without seeing an SETOC (Scott et al., 2022). One can see after looking at the variables contributing to special education teacher shortages that institutes of higher education (IHEs) need to broaden their teacher candidate recruitment and attainment strategies. One potential way to do this is to create a Grow your own (GYO) program.

Grow Your Own Programs in Special Education

GYO programs are different from

other pipelines, particularly in their recruitment efforts and community partnerships. The focused recruitment efforts of faculty via GYO programs concentrate around the recruitment of high school students, career changers, paraprofessionals, non-teaching-school faculty, and community members (Espinoza et al., 2018). Through these partnerships, stakeholders develop solution-oriented approaches to reduce obstacles that have historically kept potential teacher candidates from entering the profession. According to Amaya Garcia, deputy director of pre-K-12 education in the education policy program at New America, who studies GYO programs, nearly every state has at least one GYO program apart from North Dakota, Vermont, and Wyoming (Wood, 2022). Yet only around 15 states provide direct funding for GYO program development, implementation, and sustainability (Wood, 2022). Despite this, GYO programs have been successful in nearly 45 states. With this in mind, most colleges and universities can establish innovative, multi-tiered approaches to creating GYO programs. Teacher preparation programs can bolster recruitment, train highly qualified candidates, and assist participating

FIGURE 2: Identified Grow Your Own Pathways

localities through these initiatives.

The purpose of this article is to outline one university's approach to developing a GYO program, so that other similarly sized universities might engage in comparable recruitment efforts. A university's GYO initiatives should include: (a) identifying and forming collaborations, (b) addressing issues of diversification in special education teacher candidates to match the demographics of their localities, and (c) developing and maintaining these initiatives through federal, state, university, and college level funding sources.

IDENTIFYING AND FORMING COLLABORATIONS

According to a national study by New America, there is no universal model for developing GYO Programs (Garcia, 2022). This means IHEs can leverage resources at their institution, and in their locale, to cultivate an approach that works best for them. Although there are many potential partnerships via GYO initiatives (e.g., state

level, school level, community level), including IHEs as a necessary partner for such initiatives is imperative. Espinoza and colleagues (2018) mention several areas to target candidates, including the recruitment of current high school students and paraprofessionals. To do this IHEs must (a) identify specific needs relevant to the university and community (e.g., SPED, ECSE) (b) establish and nurture collaborative partnerships, (c) recruit participants/future educators, and (d) provide scaffolds and supports to foster successful program outcomes.

Identifying Specific Needs Relevant to the IHE

Faculty members tasked with creating a GYO program must first identify the needs of the local school district. IHEs often recognize issues and potential solutions, but without tapping into the wealth of knowledge and lived experiences of community partners, faculty of IHEs risk souring any potential relationships before they form. Consid-

ering this risk, it is paramount that IHEs work with their community partners to identify their needs (Garcia, 2022). Meaning IHEs can personalize their strategies to meet municipal needs.

After researching the importance of forming local collaborations and identifying local school needs, Drs. Watt and Heyward, two faculty members of the SPED department, decide to hold an administrators breakfast to discuss potential GYO partnerships and critical areas of need those schools face in relation to SPED. During this breakfast, relevant faculty members, department heads, deans, administrators, and other relevant parties discuss current challenges they face regarding special education. Each table is assigned a faculty member whose responsibility is to facilitate a question-and-answer period with attendees using a script which includes targeted questions intended to encourage community partnerships. In addition to holding an administrators breakfast, Drs. Watt and Heyward hold an information session with current

cooperating teachers and university supervisors to get a first-person account of what is happening and is needed in schools. During both meetings the department head Dr. Pickens will act as the master of ceremonies, where they describe the initiatives set forth by the department and highlight the positive outcomes that can come from GYO program initiatives.

Based off the information gathering stage presented above, the task force determined there are two plausible GYO pathways that warrant further exploration. The first pathway centers on teaching fellow programs for high school students in local school districts who plan to attend the sponsoring institution in the future. According to Valenzuela (2017), research indicates students decide to become a teacher well before graduating high school, so IHEs should make efforts to create pathways for teacher preparation as early as possible. Based on these data, IHEs should collaborate with local school districts to discuss the benefits of partnering with the resident IHE. One exemplar comes out of The University of Colorado who adopted a *Pathways2Teaching* model focused on preparing students from low-income high schools to enter an IHE in the field of education (Barber, 2018). Using a variety of strategies within the public school, this university aimed to provide coursework for 11th and 12th graders to earn college credits before entering The University of Colorado Programs like this allow IHEs to recruit local high school students and develop clear systems for them to attend their university.

A second method to consider is a paraprofessional pathway for those currently employed at local school divisions. Paraprofessionals, like anyone else, can train to become high-quality special educators with the agreement they will then teach in their participat-

ing school district upon completion of the program. These programs can form at the local IHE or for two years at a partnering community college with the understanding of subsequent transfer to the GYO program home (i.e., the coordinating IHE) for the completion of a Bachelor's degree in Special Education. Due to the number of paraprofessionals who want to become teachers but otherwise would likely not have the opportunity (Osterling & Buchanon, 2003), this pathway is a tenable option for increasing enrollment numbers. IHEs can also ensure the program allows paraprofessionals to take coursework while still working during the day making it more suitable and affordable. With these needs in mind, the next step is to form meaningful partnerships.

Forming Partnerships

The IHE needs to identify needs, establish pathways, and cultivate strategic partnerships in their local communities to feed the newly created GYO. To do this, faculty members can approach multiple parties (e.g., schools, community colleges) to foster critical partnerships, without which GYO programs would have little success. Like any productive relationship, the partnership must share a common vision and clearly identified roles to achieve their long-term goals of recruitment, training.

In many cases, IHEs can pair with school districts to recruit current high school students and paraprofessionals who have shown or may have interest in becoming a SPED teacher via pathways identified above. This partnership allows local districts to share data on their student demographics and teacher prospects. Once coursework begins, the IHE provides the academic content for the teacher candidates, while the local school districts provide the necessary clinical experiences for teacher licensure. For high school students, local

districts can work with their schedule and the local IHE to make room for courses in their senior year that will count as college credit in teacher preparation programs. For paraprofessionals, their school districts will allow them to remain employees of the school while taking night classes at the IHE. To foster positive partnerships, and to ensure all parties are moving toward the same terminal goal, IHEs should remain active partners by updating the schools and districts on their paraprofessionals progress in the program.

An additional consideration when developing a GYO program is seeking out potential partnerships with local and state community colleges. One exemplar is in the state of Virginia. Virginia Beach City Public Schools helped coordinate a partnership with a local community college for high school students wanting to make teaching their profession, in a GYO program titled Virginia Teachers for Tomorrow (VTfT). The school district provides students educational experiences in the following ways: 1) students get to work under highly qualified teacher leaders in the district; 2) students learn from a select group of teachers that facilitate the VTfT courses; 3) districts provide well-supported, hands-on teaching experiences; 4) students earn early college credit with Tidewater Community College; 5) localities provide a chance at a Future Teacher Award, which guarantees winners a teaching job within the district; and 6) districts commit to hiring participants within the local school district (Brown, 2018). These partnerships strengthened enrollment in community colleges and lead to licensure when transferred to IHEs, benefiting both partners and the students.

IHEs can adopt a similar model for forming partnerships by providing the educational experiences mentioned previously. By ensuring students earn

credits and work with highly qualified teachers while simultaneously participating in hands-on experiences in the local districts, these future educators are set up for success upon graduation. Additionally, providing awards, funding, and a commitment to an impending position in the schools allows students the comfort of knowing their college experience will lead to employment (Brown, 2018). IHEs can capitalize on these partnerships efforts but must then ensure they have the pre-service candidates for enrollment through intentional and purposeful recruitment strategies.

Recruiting Strategies

IHEs need to make recruitment a priority after programmatic needs are identified and partnerships established. Recruitment efforts must be strategic to ensure IHEs contact potential teacher candidates. As with any initiative, it is critical to define each parties' roles in the recruitment efforts. Potential roles include sending out newsletters about their programs, success stories from previous students, advertising in local papers, college websites, social media, and email updates to local school districts. Another role IHEs should consider is employing and assigning a GYO liaison with recruitment efforts (e.g., visiting local schools and community colleges) as a part of their job responsibilities. Successful programs use liaisons to facilitate discussions and answer questions related to joining a GYO program. According to the Texas Comprehensive Center (2018), IHEs have been successful with recruiting efforts by engaging local schools through personal speaking engagements and making connections with prospective students.

Local school districts should also have a role in recruitment efforts. Administrators can identify paraprofessionals and students who show interest

This article opens the conversation on the potential benefits of expanding the MTSS framework into higher education, specifically teacher preparation, as an innovative approach for attracting, retaining, and preparing high-quality special educators.

in becoming licensed teachers. Administrators can develop interest surveys, provide university visits, discuss pertinent data about their personnel with IHEs, and craft individualized and personalized letters to prospective teacher candidates. To illustrate this type of effort, the *California Paraprofessional Teacher Training Program* uses their Title VII office to administer surveys to bilingual and special education paraprofessionals (California Commission on Teacher Credentialing, 2015) to gauge interest in furthering their education to become a teacher. According to the North America Cost of Living Index (2018), special education paraprofessionals make around \$1,577/month. Using this salary, 158.9% of their monthly income would pay for rent or mortgage expenses (NUMBEO, 2018). This fact alone affords school districts the opportunity to recruit and target this population for advancement in both their career and annual salaries.

Overall, it is imperative that recruitment efforts are intentional and target specific needs. As mentioned, the gap between SETOC and students of color in special education is overwhelming (Kozleski & Proffitt, 2020; National Center for Learning Disabilities, 2020). By employing the efforts above, including targeting local paraprofessionals or students of color via email or personalized school visits from a university

liaison, IHEs can address this issue head on. IHEs and local school districts must work together to identify potential candidates for GYO programs and each partner should have clearly established and manageable roles. After these recruitment efforts are complete, IHEs should provide a variety of supports to guarantee that candidates are successful.

Providing Supports to Ensure Success

Maintaining collaborative partnerships and recruiting qualified candidates is not

sustainable without wraparound supports during their time in the program. Often, students in GYO Programs agree to work in their home school divisions ensuring job security upon program completion. This is perhaps the largest attractor to the program, but students are non-traditional, meaning they are not usually full-time students and are often career changers or caretakers (Muniz, 2020), which *can* create barriers to successful completion of this type of educational initiative. According to Muniz (2020), non-traditional candidates bring with them a variety of value-added experiences to their local school and district including but not limited to: a) cultural competencies, b) language skills, c) instructional experience, and d) commitments to their local community. These benefits

make non-traditional students highly sought-after for local needs, but students often need additional support.

Multifaceted academic support systems are key to ensuring success. Successful programs at IHEs should assign an academic advisor in addition to mentors or other faculty put in place, purposefully, to support students in understanding and accessing resources required to be successful in such a program. There is evidence to show that this type of mentoring from start to finish in a GYO program is beneficial for all parties involved (Carver-Thomas, 2018). A great example of an academic support put in place is the *California Paraprofessional Teacher Training Program* which offers test-preparation sessions students can use when preparing for state licensure exams (California Commission on Teacher Credentialing, 2015). The *Pathways2Teaching* model provides another example of academic supports which offers college readiness support to high school students via the coordinating IHE (Barber, 2018). In these instances, university faculty and staff work with high school students entering a GYO program to focus on writing skills, test preparation, and time management.

In conjunction with academic supports, effective GYO programs should provide social supports to their students. IHEs can create a cohort model so students enrolled in the program progress through their coursework together. This allows students to collaborate with one another, discuss experiences, and learn what it is like to cooperate with teachers in the field, with the goal of creating a sense of community during and after program completion (Pemberton & Akkary, 2010). Social backings can also mentally support students during their time in the program to ensure success not only academic but socially and emotionally.

Further, non-traditional students often represent a minority group (Pham, 2019). According to Leonardo and Porter (2010) people representing a minority group have different positioning and familiarity and this means that spaces must “exist where people of color can collectively access support.” Supporting minority groups benefits localities when demographics match the local population which is an important premise that signifies the need for understanding and intentionally using GYO programs to diversify the teacher workforce.

After identifying needs and partnerships needed to develop a GYO program, the task force recognized another area in which they should be focusing their recruitment efforts and that is diversifying the teacher workforce. To this point they had not addressed the issue of training teachers to work in the field that matched the local student demographics as far as diversity. They decided to focus their next two GYO meetings to discuss this aspect of the GYO initiative and gather evidence to show Dr. Pickens and the college Dean the importance of recruiting diverse teacher candidates.

DIVERSIFYING THE TEACHER WORKFORCE THROUGH GROW YOUR OWN PROGRAMS

GYO programs are a promising approach to not only decrease the special education teacher shortage but to also increase the diversity of the workforce in local communities. IHEs can grow pre-service teacher enrollment and expand candidate demographics by working with their surrounding community school districts. IHEs must understand two key points to successfully recruit, train, and retain diverse applicants: (1) the benefits of removing barriers for diversified candidates, and

(2) the intentional positive implications of a successful and diversified future special education workforce through these programs.

Benefits of Diversifying Teacher Candidates within GYO Programs

As mentioned, students with disabilities are extremely diverse (NCES, 2016) but special educators of color only make up less than one-fifth of the teacher workforce (Ingersoll & May, 2011). IHEs can develop GYO programs to ensure more future teachers of color (TOC), and those from other diverse backgrounds, represent the demographics of their community. Additionally, one of the key elements of GYO programs is to match the needs of the locality (Gross, 2022). To do this, IHEs must understand the paybacks for local recruitment and the barriers to enrolling in teacher preparation programs for minorities. They must then tailor a GYO program to address these needs. Generally, to help diversify the special education workforce through GYO programs, IHEs must (a) recognize the benefits of tapping into local school districts to match demographic needs, and (b) remove existing barriers to entering teacher preparation programs for TOC.

Benefits of tapping into local school districts. According to Muniz (2020), TOC are more likely to participate in an alternative pathway to a teaching career, including GYO programs. A major benefit of GYO programs is that it is one of the only alternate pathways to recruit future educators from local entities. As mentioned, GYO programs can promise job placement upon graduation for high-school students and paraprofessionals. By recruiting students and paraprofessionals in a specified area, it is more likely they will represent and match the demographics of their schools. They have lived in the area (as a student or employee) and often have

family and friends. Additionally, they are familiar with the school system and more likely to want to stay in the area which is a chief benefit for the school district partners.

IHEs can use similar recruitment strategies mentioned above but should be intentional to recruit candidates that represent local diversity. To recruit for the high school teaching fellow program, IHEs can tap into local middle and high schools which offer the largest pool of potential future teachers of color (Johnson, 2018). For the paraprofessional program, IHEs should recognize that paraprofessionals more closely reflect student demographics than current special educators (Brown & Stanton-Chapman, 2014). This means they are more likely to represent the linguistics, cultures, and racial demographics of students than the teachers who are currently serving them. After enrollment, IHEs must recognize they have a legal responsibility to use culturally relevant pedagogy from student culture, backgrounds, and personal experiences (Skinner et al., 2011). This means that graduates of GYO programs who go back to teach in their home districts will not only match student demographics but will also be highly trained to understand students' individual needs. For this reason, IHEs can build academic and cultural supports into their GYO programs to address dealing with the unfamiliar for these groups.

Barriers to entering teacher education preparation for TOC. According to Tasha Levy, a GYO program in Illinois is comprised of nearly 66 percent future TOC (Wood, 2022). Although this is a promising statistic, minority students face many barriers to higher education and are especially in need of supports. Dyce et al. (2013) reported that families have less than a six percent chance of sending a child to college if their income was less than

\$25,000. It is also true that “median Black household earned just 61 cents for every dollar of income the median white household earned” (Wilson, 2020). This means there is a large discrepancy in the ability to afford a college education across racial lines. GYO programs who want to diversify their students should recognize this, and a subsequent section discusses strategies for funding opportunities for these students.

In addition to financial barriers, future TOC in GYO programs may need added wraparound supports as does any university student. More specifically, paraprofessionals in GYO programs are often diverse, but may be reluctant to enroll at an IHE. A study by Gardner et al., (2019) found that successful GYO programs were able to recruit and retain diverse paraprofessionals by providing three things: childcare, alignment with degrees, and pathways to transfer from a community college to an IHE in the state. This is promising for mid-size universities to remove existing concerns and structure GYO programs that are attractive and attainable for these professionals. IHEs must work with local school districts to ensure paraprofessionals have night or online coursework when considering candidates with children. Facilitators of GYO programs should monitor the pathway from community college to the IHE to ensure transparency and prevent any interference with the paraprofessional's job. IHEs can also offer diversity awareness and sensitivity programs to high school students so they know what to expect and engage in when they enroll in a GYO program.

Overall, IHEs who intentionally diversify their students benefit two main parties. First, universities can address local community needs when IHEs work to educate paraprofessionals or other members of the community that

match demographic needs. Secondly, diversifying a GYO program can help solve the issue of fewer TOC in the special education workforce (Ingersoll & May, 2011). Both purposeful diversity strategies may contribute to lessening the teacher shortage for SETOC and lead to future implications for the children they serve.

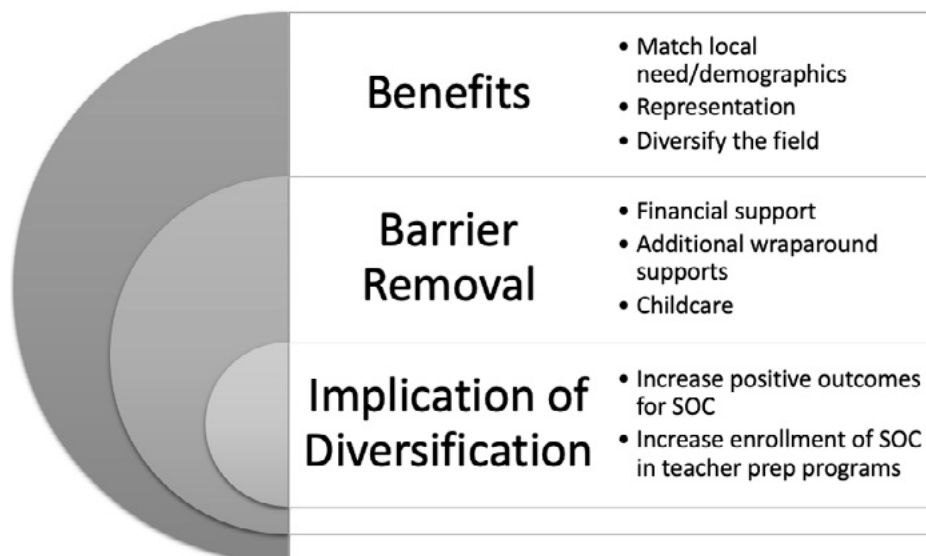
Future Positive Implications of Diversifying the SPED Workforce

There is clear data to illustrate that students of color are overrepresented in special education (National Center for Learning Disabilities, 2020) and teachers of color are underrepresented (Kozleski & Proffitt, 2020). This is problematic but IHEs can address this through their GYO programs to benefit children in the classroom. Future implications and long-term benefits from enrolling diverse candidates in a GYO include: (a) an increase in academic, behavioral, and social outcomes for diverse children and (b) the aptitude to inspire more students of color or minorities to become teachers.

Increase positive outcomes for diverse children. Children of color are disproportionately represented in special education and more often referred for behavioral and social support (National Center for Learning Disabilities, 2020). Holt and Gershenson (2015) point out that when students of color have teachers that represent who they are can result in fewer disciplinary appointments and reduce the magnitude of those referrals. This means children are less likely to be referred to the principal or expelled from school when their racial demographics match that of their teachers. Additionally, children adjust more socially due to their comfort level, and they report lower instances of absences in school (Holt & Gershenson, 2015). Because student absences correlate with academic achievement, this, in turn, means children perform

FIGURE 3: Diversifying the Teacher Workforce Through Grown Your Own Programs

Diversifying the Teacher Workforce via Grow Your Own Programs



Note. SOC = Students of color

higher academically when teachers who match their racial demographics teach them (Aucejo & Romano, 2016). Further, research on academic achievement shows that when a teacher resembles their students demographically, it results in statistically higher reading and math attainment (Egalite., 2015).

By recruiting and retaining future TOC in GYO programs, colleges and universities can insert coursework that speaks to these statistics. They can work with pre-service teachers, either high school students or paraprofessionals, to discuss the constructive impact they can have on their future students' success in academics, behavior, and social adjustment. Additionally, IHEs can introduce culturally responsive pedagogy in GYO coursework to further the likelihood of success.

Inspire students to become teachers. Diversifying the teacher workforce can also support students of color who may never experience having a TOC

which could impact the future enrollment in special education training programs. More specifically, children of color are more likely to enroll in IHEs, and become teachers, if a person of color is the educator (Gershenson et al., 2017). For these reasons, IHEs who successfully graduate SETOC may have a large impact on inspiring more minority students to be teachers. If children often base their futures on what they see in their environment, namely their classrooms, providing highly trained special educators of the same race or ethnicity may serve as role models and encourage students to become educators. According to a study reported by Sarah Marsh (2105) on why people become teachers, 37% reported they were inspired by former teachers themselves. This shows IHEs can benefit from educating and producing more TOC to keep the succession going and produce future teachers through the inspiration of GYO grad-

uates. With this in mind, while all the foundational work surrounding partnership development, needs assessments, and recruitment effort are critically important, it is all for naught unless funding is available to start-up and maintain a GYO program.

After presenting the data on the importance of recruiting diverse candidates to meet demographic needs, Dr. Pickens and the Dean were impressed. They felt the taskforce had identified a solid plan for implementation and one that would prove beneficial to all parties including the university and local school systems. As is the case at most universities, the big question then came down to funding. Although these were worthy ideas, the administration wanted to know how it could possibly be affordable. How would high-school students or paraprofessionals pay for this training and what would be the long-term benefits to all stakeholders?

DEVELOPING AND MAINTAINING GROW YOUR OWN PROGRAMS

Applicants to GYO programs come from a variety of backgrounds which includes those from low socio-economic status who might require financial supports to enroll at IHEs (Connally et al., 2017). Obtaining GYO funding helps provide more attainable access into the field of education for many who will then teach in their same communities. Universities must consider programmatic costs when starting a GYO model and identify potential funding and supports. Several types of funding are achievable for these programs including (a) external federal, (b) external state, and (c) internal University and College of Education monies.

External Federal Funding

There are numerous opportunities for GYO programs to tap into federal

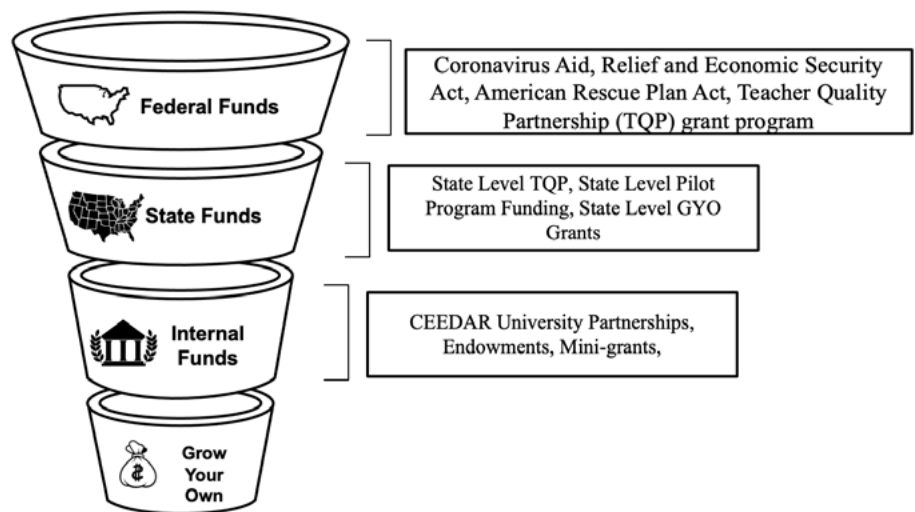
funds. Following COVID-19, the federal government introduced the Coronavirus Aid, Relief and Economic Security Act (Acosta & Holdheide, 2021). One major goal of this act was to afford states and schools with money for programs endorsed by the Individuals with Disabilities Education Act (IDEA) and Every Student Succeeds Act (ESSA) (Acosta & Holdheide, 2021). Part of these funds could go directly to an IHE to start a GYO program. Further, in March of 2021, Secretary of Education, Miguel Cardona, suggested using American Rescue Plan Act (ARP) funds to address teacher shortages (U.S. Senate and House of Representatives, 2021). This act is particularly important for the field of special education as the major shortage area for teacher employment (National Coalition on Personnel Shortages in Special Education and Related Services, 2016). Additionally, in September of 2022, the U.S. Department of Education awarded almost \$25 million dollars to recruit and train diverse teachers for employment through the Teacher Quality Partnership (TQP) grant program. (U.S. Department of Education, 2022). The TQP grant program is an essential award for GYO programs who want to tap into local diversity. Overall, several IHEs and state school districts have capitalized on these acts to strengthen GYO programs.

External State Funding

In addition to federal funds, external state funding is variable but available in most states.

Depending on the state government, legislatures award funding differently, however, colleges and universities can request funding to collaborate with state school districts to help qualified high-school students become licensed teachers in their local area (Sutton, 2022). As mentioned, this has several

FIGURE 4: Examples of GYO Development Funding



benefits as students in these areas know the local population and are more likely to stay. Additionally, many universities apply for state money to pilot GYO Programs. Pilot money in several states is available through Teacher Quality Partnership grants under Title II of the Higher Education Act (Muniz, 2020). These grants offer IHEs the opportunity to start programs and provide funding for teacher candidate training throughout the program (Muniz, 2020).

In addition to state funds for IHEs, numerous states have established grants for local school districts. These funds support the recruitment of diverse candidates to meet local district needs. For example, GYO Pilot Program funding is available to local schools through grants for individuals who meet certain conditions (Virginia General Assembly, 2020). Such conditions often consider pre-service teacher candidates who will match local school demographics and who have graduated from a public high school in the division, were qualified for free lunch during their time in high school, and who agree to teach in a participating district for at least four years, starting within one year of graduating from an IHE (Virginia General Assembly, 2020). IHEs often assist local

districts in applying for these funds. **Internal University and College of Education Funding**

More localized, IHEs can capitalize on insular grant funding and internal grants from within the University, college, or specific education department. Several IHEs offer exclusive grants for teacher candidate recruitment. Funding opportunities often appear through grants in the forms of endowments, Faculty Senate monies, or specialized local educational organizations.

In 2019, the American Institutes for Research's Center on Great Teachers and Leaders collaborated with the University of Florida's Collaboration for Effective Educator Development, Accountability, and Reform (CEEDAR) Center to establish a Toolkit for funding opportunities for the teacher education shortage (American Institutes for Research, 2019). Since this time, the University of Florida assists many IHEs in addressing specific programmatic needs. Finally, many IHEs can begin to work with their college to identify funding using resources in this document.

At the opening department meeting to start the Fall semester, Dr. Pickens asked the GYO task force to share their

strategies and findings. They identified what they set out to accomplish by creating an actionable plan for pre-service teacher recruitment in SPED and ECSE. They also brought in administrators from the local school district to discuss logistics and the importance of training these future educators to work within the community. Additionally, the task force shared their information on applying for federal, state, and local funding. After a departmental vote, the majority agreed the GYO Program would prove beneficial to address the special teacher education shortage.

CONCLUSION

The demand for special educators is at an all-time high and colleges and universities are constantly looking for ways to address this need (McLeskey & Billingsley, 2008). GYO Programs require successful partnerships to ensure training programs are accessible, affordable, and culturally relevant. Yet, it takes a lot of effort to create and sustain a successful GYO Program. Universities can take actionable steps to identify school district needs, secure school partnerships, recruit future teacher candidates, provide engaging and comprehensive pre-service special education training, and act as a conduit that can supply local communities with highly qualified teachers. IHEs would benefit their initiatives by using three main steps: form collaborations, focus on diversifying teacher candidate, and tap into funding sources from multiple levels to develop and maintain GYO initiatives. With these steps in mind, IHEs across the country may adopt a similar model that meets their unique needs, and the community needs in which they are situated in to ease the burden placed on schools due to the teacher shortage.

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Collaborative Grow Your Own Partnerships to Address Persistent Teacher Shortages and Remove Barriers to Becoming a Special Educator

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ABSTRACT

This article provides an overview of two innovative “Grow your Own” (GYO) pathways to teacher preparation. These pathways include authentic partnerships between an institute of higher education (IHE) and school districts, who actively plan and work together to recruit, prepare, and retain special educators. These pathways specifically focus on addressing teacher shortages, increasing the diversity of the educator workforce, and preparing educators through a social justice lens. The IHE and school district collaboration remove siloed practices to reach potential candidates who have a passion for teaching and social justice but who have previously lacked a pathway to enter the profession.

KEYWORDS

Grow your own, residency, partnerships, teacher shortages, barriers, social justice, special education

The devastating health and economic impacts of the pandemic have contributed to exacerbating a persistent and national educator shortage of special educators and teachers of color (García et al., 2022). Trying to stay connected to students during distance learning and helping students understand the national social justice uprisings from George Floyd’s murder have exhausted some educators and caused many to exit the field (Carr, 2022). Now, more than ever, collaborative teacher preparation partnership models are needed to create innovative pathways to becoming an educator in order to address these critical shortages and the turnover within the educator workforce.

In this article, we describe how an institution of higher education (IHE) and several school districts have actively worked together to create Grow Your Own (GYO) pathways to teacher preparation. Creating true partnerships and collaborating with school partners, our IHE has established two GYO models designed to recruit, prepare, and retain special educators in order to address the teacher shortage and increase the diversity of the educator workforce (MN PELSB, 2021) with a focus on social justice.

Critical Areas of Shortages

Special education teacher shortages have been a long-standing issue for school districts and they have also struggled to recruit and retain teachers from diverse communities (Will, 2022). Similar to most states across our nation, our state is challenged by a lack of diversity in our educator workforce and significant teacher shortages caused, in part, by fewer individuals going into education and teachers leaving the profession, especially in special education (MN PELSB, 2021; Sutcher et al., 2016).

Contributing to teacher shortages are retention challenges with educators exiting the profession and not returning to teach at their schools. A National Education Association survey found that 32 percent of respondents plan to leave the profession earlier than they anticipated with the numbers higher among members of color

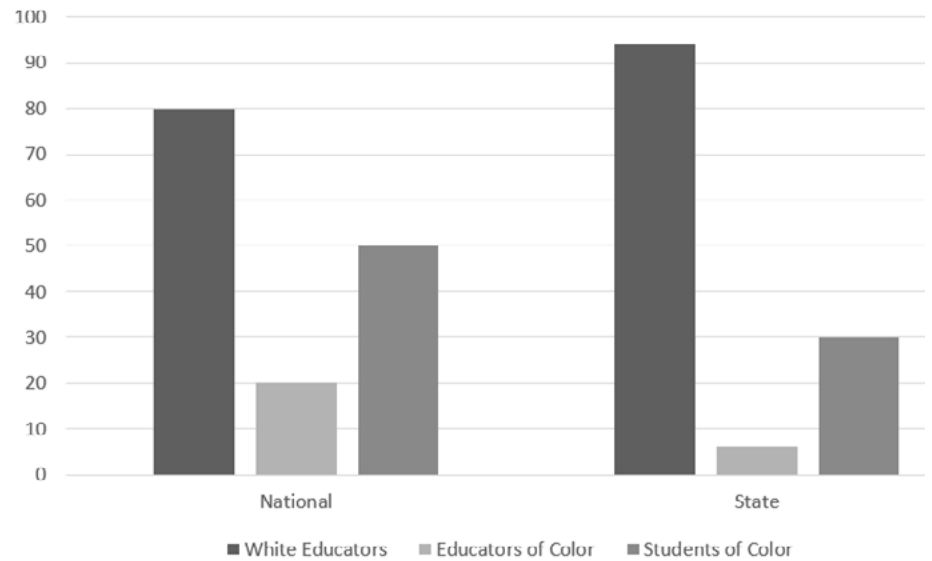
(Busser, 2021). In another national survey, nearly 25 percent of teachers reported they may leave their job, with teacher turnover found to be highest (around 12 to 14 percent) in urban districts, high-poverty districts, and districts serving predominantly students of color (Diliberti & Schwartz, 2023). In some urban schools, teacher turnover tops 20 percent annually (National Commission on Teaching and America's Future, 2007). In Minnesota, nearly a third of new teachers leave teaching within the first five years in the profession (MN PELSB, 2021).

Lack of Diversity in the Educator Workforce

According to the National Center for Education Statistics (2020), almost 80 percent of the existing teaching force is white, which does not reflect the demographics of the increasingly diverse student population (Chen, 2022). According to the Center for American Progress, U.S. schools are now made up of 50 percent of students of color, while less than 20 percent of teachers are of color (Ahmad & Boser, 2014). In Minnesota, a report about the supply and demand of teachers notes that less than six percent of teachers are teachers of color (MN PELSB, 2021), while nearly 30 percent of the state's students are of color. Figure 1 illustrates the disproportionality between the percentage of educators and students of color at the national and Minnesota state levels.

Like many states, Minnesota has a significant lack of diversity for licensed teachers (MN PELSB, 2021). There is also a long history of racial segregation and poor educational outcomes for students of color (Beaumont, 2020; Waxman, 2020). This non-diverse teaching corps is a consistent barrier to producing racially equitable education outcomes for students and almost every state has a large teacher-student

FIGURE 1: Percentage of Teachers and Students of Color: National and State Data



(Center for American Progress, Ahmad & Boser, 2014; Minnesota Professional Educator Licensing Standards Board, 2021)

diversity mismatch, which provides few opportunities for some students to benefit from having educators who look like them (Sanchez, 2015). Research has shown benefits, particularly for students of color, when students are matched with an educator of the same race. One example is low-income, Black students who have at least one Black teacher in elementary school are less likely to drop out of high school (Gershenson et al., 2018).

GROW YOUR OWN PATHWAYS

To address these shortages and increase diversity within the workforce, many states, districts, and IHEs have turned to GYO district-serving pathways to teaching (Wood, 2022). New America defines GYO as partnerships between educator preparation programs (e.g., IHEs), school districts, and community organizations to recruit and prepare local community members to enter the teaching profession and teach in their communities (Garcia & Muñiz, 2019). GYO

models are teacher preparation programs molded after the motto, “From the community for the community” (New America, 2021). GYO models address the misalignment between teacher preparation output and local district needs through strategies to recruit and retain well-prepared and diverse candidates in schools. GYO programs honor the belief that recruiting and preparing teachers from the local community will increase retention and diversity and equip schools with well-prepared teachers who are knowledgeable about the needs of students and families in the community (Garcia & Muñiz, 2019). Recruiting locally means teacher demographics are more likely to mirror student demographics (Wood, 2022). In addition to schools benefitting from GYO models, IHEs benefit through shared recruitment, increased enrollment, and improved teacher preparation programs to meet the needs of the local community.

GYO models typically provide pathways to placement into teaching positions with wrap-around services to sup-

TABLE 1: Demographic Sampling

Year	2016	2017	2018	2019	2020	2021	2022
# Started residency	22	47	42	38	47	52	52
% Identify as BIPOC	55%	65%	55%	64%	62%	52%	48%
% Bi or Multi-lingual	20%	37%	23%	28%	34%	17%	22%
# Completed residency	22	43	37	35	43	51	47
# Hired by school partner	22	40	36	33	42	42	In progress

port recruitment and retention including critical induction support (Garcia et al., 2022). While much variation exists in program design and delivery, states and districts are unified in the importance of collaborative partnerships between school districts and teacher preparation programs with a focus on comprehensive job-embedded training to prepare the teachers needed for this moment and for the future. GYO models afford the opportunity to customize a preparation program to the district context while meeting state requirements for a teaching license (Garcia et al., 2022).

Two Grow Your Own Pathways

To meet the needs of our communities and partners, our IHE developed two related, yet separate, GYO district-serving pathway models to meet the unique needs and assets of our partner schools. In partnership, we designed our GYO programs to provide a smooth pathway from preparation to teaching, while simultaneously reducing significant barriers to becoming educators. Abandoning siloed approaches, both of our GYO models work collaboratively with school partners to recruit, prepare, and retain socially-just special educators in specific teaching contexts. Our two GYO models are our *Teacher Residency* and *Work and Learn* models.

Teacher Residency Model

Teacher residency models have become widely recognized as effec-

tive teacher pathways and preparation models with research suggesting that this model holds promise for recruiting diverse individuals (Podolsky et al., 2019). Leveraged by federal funding, teacher residencies have grown over the last decade in response to critical shortages in hard-to-staff urban and rural regional areas and subject areas, such as special education (National Center for Teacher Residencies, 2020; Podolsky et al., 2019). The federal government has authorized money to support and develop teacher preparation programs and residencies, including the Office of Elementary and Secondary Education's Teacher Quality Partnership (TQP) and Supporting Effective Educator Development (SEED) programs. Additionally, some states fund statewide programs to help local school districts recruit and prepare teachers (Muniz, 2020). Since 2016, our IHE has collaboratively partnered with local schools on our GYO pathways and prepared hundreds of teachers with over 50 percent from traditionally underrepresented communities in our Teacher Residency model. Table 1 includes demographic information from our GYO residency pathways that illustrates we are meeting our goal of diversifying the teacher workforce.

<Insert Table 1>

A residency is a period of training in an area of specialty (Merriam-Webster, n.d.). In the medical field, residents provide care to patients while being supervised by experienced doctors. In the

field of education, residents are pre-service educators observing and teaching students under the supervision of an experienced mentor (Chu & Wang, 2022). Similar to a medical residency, teacher residency models pair theory and practice, with pre-service educators coteaching alongside a licensed teacher while taking coursework on pedagogy (Marshall & Scott, 2015). Our residency model provides preservice educators with a full academic year apprenticeship or practice-based student teaching experience alongside an experienced and trained mentor teacher in their classroom before they become licensed teachers of record. Over the course of the academic year, preservice educators gradually take more and more responsibility for teaching within the classroom. Extended preservice classroom experience with students has been linked to teacher retention (Udesky, 2015). In our model, residents receive an entire academic year (e.g., 1200 hours) of pre-service field or clinical experience compared to our state-required 12 weeks (e.g., 400-600 hours) (Minnesota Administrative Rule, 2021). This year-long experience and our focus on social justice are key distinctions and serve as the selling points of the residency model to potential candidates. Potential educators recognize the benefits of the intensive clinically rich learning provided by the year-long residency (Garza & Werner, 2014) and the focus on social justice. In some residency models, including our

FIGURE 2: “PREPARE” Project Components

model, the pre-service educator receives a living wage stipend while they are learning to become a teacher.

Work and Learn Model

After implementing our teacher residency model for several years, we created an adapted GYO model to meet the increasing and urgent demand of districts that did not have budgets to support providing a living wage to an additional adult in a classroom. Our second GYO pathway is our Work and Learn model, which is a career pathway that adapts our residency model and curriculum to meet the local district context. In this model, the pre-service educator serves in a paid paraprofessional or provisional teacher role. Each state has different license structures for educators. Typically, a provisional teaching license comes with special conditions and is available for an individual with a bachelor’s degree. In some states, a high school diploma may suffice. These licenses are typically granted due to an emergency teacher shortage in a specific area for a short period of time (National Council on Teacher Quality, 2021). Typically, this individual is noncertified or not fully licensed, licensed for a limited duration, or licensed in a different area from which they are preparing. Research is mixed on career path preparation programs’ outcomes but at least one The Pathways to Teaching Careers Program, which supported paraprofessionals and noncertified teachers to become fully certified teachers was associated with the recruitment and retention of diverse teachers (Clewell & Villegas, 2001). In this program, 74 percent of the recruited

paraprofessionals were from a traditionally underrepresented background and 75 percent of the participants completed the program compared to a 60 percent national completion rate in traditional teacher education programs (Podolsky et al., 2019).

FRAMEWORK AND PROJECT COMPONENTS

Our GYO models utilize a structural framework to organize project components and our work. Figure 2 provides an overview of our “PREPARE” framework. PREPARE includes Partner, Educate, Practice, Advance, Retain, and Evaluate. Table 2 provides a side-by-side comparison of the features of our two GYO models.

School District Partnerships and Purposes

In our GYO teacher preparation models, we leverage our partnerships with key school districts in the region to address and combat teacher shortages. Our partnerships include school districts in the Twin Cities metro area (e.g., Saint Paul Public Schools, Minneapolis Public Schools, Anoka-Hennepin), a consortium of charter schools, and intermediate school districts that serve a number of member school districts. These districts include both urban and rural settings.

Partnerships are not a new thing in teacher preparation and are now mandated by some accrediting bodies (e.g., Council for the Accreditation of Educator Preparation, 2015; Minnesota Administrative Rule, 2021); however, partnerships may vary from vague agreements to more collaborative part-

nerships. We have created partnerships that range from collaborating on specific activities to shared decision-making about all aspects of the teacher preparation model. Matching the organizational structure and processes to the nature of the partnership’s goals and the partners’ motivations, capacities, levels of desired interdependence, and cultural compatibility is critical (Hora & Millar, 2011). With our partners, we address a significant and urgent need for diverse special educators with our collective goals focused on addressing teacher shortages, preparing socially-just educators, increasing teachers of color in critical areas of need, creating a program inclusive of preservice educators’ lived experiences, and preparing high-quality teachers who represent the communities they will serve.

We acknowledge and affirm the lived experiences of our teacher candidates through a variety of strategies. For example, the IHE residency coordinator and dean conducted course audits to assess the representation of authors and inclusion of criticality across course assignments, materials, and learning objectives. Based on this audit, our IHE revised our teacher preparation program materials to ensure the representation of diverse scholars and replaced some assignments so that candidates had more opportunities to examine power, equity, and anti-oppression in education and society. Additionally, course instructors participate in professional development on these issues, and we intentionally hire instructors who represent traditionally underrepresented communities. In addition, we reduce racial isolation and provide connections for students to

TABLE 2: Grow Your Own Model Details

GROW YOUR OWN MODELS (LICENSE + MASTER'S DEGREE)		
Model	Teacher Residency	Work and Learn
Vetting Process	Interview - Rigorous 2 step interview process conducted by district with IHE participation	Interview - District Human Resources and Administration interview and provide a letter of recommendation
Registration	IHE registers pre-service educators for cohort classes	
Start Date	Cohorts start coursework each summer	
Duration	15-months	24-30 months
Credits	4 to 10 credits per semester	4 to 6 credits per semester
Total Credits	34 credits (Compared to 43 credits in our traditional programming)	
Cohort Model	Learn with peers from same school district	Learn with peers from multiple school districts
Classroom Experience	Work at a partner school as a resident in a mentor teacher's classroom	Work at a partner school as a teacher or paraprofessional supported by a mentor teacher
Paid	Receive a living-wage stipend from the school district	Receive equivalent teacher or paraprofessional salary from the school district
Course Format	District preference: Face-to-face and hybrid online	District preference: Combination face-to-face and online or all online synchronously
Focus	Social Justice	
Course Location	Courses on the university campus or school district site	Courses online or school district site
Time of Class	Day classes	Evening classes
Class Schedule	1 full day of coursework aligned to experiences with responsibilities gradually increased as competency demonstrated	2 courses each week Hybrid Option: 1 face-to-face course at district and 1 online course weekly Online Option: 2 online courses weekly
Mentor	Receive mentoring, coaching, and evaluations from a mentor teacher	
Supervision	Receive coaching and evaluations from a university supervisor	
Experiences	Preservice educators receive 1200 hours of field experience	
Clinical Experiences	During academic year 1, complete a year-long experience spending 4 days a week in the classroom teaching alongside an experienced mentor teacher	During academic year 2, complete a year-long experience spending 5 days a week in the classroom
Advising	Advising occurs in weekly seminars + 1:1 advising sessions each semester	Built-in group advising sessions occur every semester
License	Complete the teacher license preparation program in mild to moderate cross-categorical special education	
Degree	Complete graduate-level master's degree (last summer of the program)	
Commitment	3-year commitment to teach in the district	2-year commitment to teach in the district

explore and discuss their lived experiences by pairing each candidate with a graduate who is in the same license area and mirrors a similar sociocultural identity. Some of our programs include affinity groups for graduates and current candidates that meet regularly.

Critical to our success is the partnership with schools. Hora and Millar (2011) identified three different partnership structures: limited, coordinated, and collaborative. In a limited partnership, one organization maintains decision-making authority and the other serves in a consultancy type of role. In a coordinated partnership, there is some shared decision-making with each organization bringing different resources to achieve the goals, but this model lacks centralized governance. In a collaborative partnership, there is a high level of interdependence and collective governance. Our work requires a coordinated partnership moving towards a collaborative partnership. As we work together with our established partners, we have grown to understand and appreciate one another's areas of expertise and build trust. Our GYO work requires a high level of interdependence, boundary-crossing, and collective governance with decision-making carried out by our IHE and district partners, which moves the partnership from coordinated to collaborative.

Partnership Strategies to Reduce Barriers

Our GYO teacher preparation models are designed to meet schools' needs while reducing historical and enduring barriers to entry for teachers. Among the many barriers that may contribute to individuals entering the teaching profession, our GYO models focus on four areas and our IHE and partner schools work collaboratively to remove barriers, such as (a) siloed recruitment and selection, (b) effective preparation and time constraints, (c) financial debt accumulation, and (d) retention during

and after preparation.

With research signaling that the educator workforce is diminishing, teacher preparation programs need to use innovative ways to attract candidates to ensure that schools have highly qualified teachers (Marshall & Scott, 2015). Some of the strategies that help us move from a coordinated to a collaborative partnership include shared recruitment and selection efforts. Our collaborative recruitment and selection plan includes our IHE and district partners working together with school district human resource and university admission personnel to recruit, screen, interview, and select qualified candidates.

Recruit and Screen

With both of our GYO models, we engage in collaborative recruitment with our school partners, with schools taking the lead role in these efforts. During recruitment, both our IHE and districts contribute financially and representatives from each contribute to the work. We work with our school partners to recruit the teachers the districts know they will need (Podolsky et al., 2019). To accomplish this, our partner's administrators and human resources personnel gather data on current hiring needs and forecast needs three to five years in the future. We collaboratively plan recruitment strategies, including specific messaging to current district leaders, paraprofessionals, other school personnel, community members, and a broader audience. This can include flyers, presentations, commercials, videos, social media, and website information on the university and school district platforms. Collaboratively, our IHE and school partners offer in-person and online information sessions and visit with schools, administrators, and other district staff to recruit educators. School district staff and university faculty and staff help with one-on-one connections with interested individuals throughout the application process.

During recruitment, we collaboratively focus on attracting a diverse pool of candidates from within our partner school's communities. Several studies support GYO models having the potential to recruit more racially and linguistically diverse teachers and career changers into teaching (Chu & Wang, 2022). According to the National Center for Teacher Residencies (2020), 57 percent of the candidates in their partner network identify as Black, Indigenous, People Of Color (BIPOC). Our residency model mirrors this data with more than half of our residents in our Saint Paul Public Schools and Minneapolis Public Schools partnerships identifying as BIPOC and 25 percent as multilingual. One of the ways our GYO models recruit diverse candidates is through targeted recruitment strategies for culturally and racially diverse candidates, which includes going out to community events and community locations (e.g., mosques, coffee shops, and barbershops) and advertising on radio stations, newspapers, and podcasts that cater to a more diverse audience.

Once potential candidates apply, we screen their qualifications. Our program is a graduate-level program that requires candidates to have completed a bachelor's degree. For a candidate to be accepted into a Work and Learn cohort, human resources must vet the candidate and an administrator must provide a letter of recommendation. A significant benefit of recruiting together is potential candidates may already have a relationship with district personnel and are more likely to trust the school district's messaging compared to staff from IHE.

Interview and Select

Our selection process includes two parallel steps, which include (1) the interview and selection process (Urban Teacher Residency United [UTRT], 2014; KIPP DC, 2013; Waddell & Ukpokodu, 2012) and (2) the university application process. To officially be part of a GYO cohort requires individuals

TABLE 3: Interview Process

PHASE	INTERVIEW PROCESS
Writing Sample	The candidate submits a writing sample, which is screened for admission into the university.
Interview	The candidate answers questions during a 30-minute individual interview.
Presentation	The candidate presents a mini lesson on teaching and learning as it relates to social identity or a personal racial and cultural autobiography.
Group Discussion	The candidate studies provided material (article or book chapter) and then participates in a group discussion focused on culturally and linguistically sustaining teaching.

to be vetted by our partner school and admitted into the university's graduate programming. While the candidates are going through the interview and selection process with the district, they simultaneously complete the university admission process. We invite qualified candidates to participate in a robust interview and selection process that includes specific activities to demonstrate dispositions and competencies related to commitment and mindset toward diversity, equity, inclusion, and social justice. In our residency model, the interviews are a collaborative endeavor between the district and university and include district leaders, faculty, mentor teachers, and graduates. District personnel and IHE representatives serve on assessment panels with detailed scoring rubrics for each phase of the interview process. In addition to participating in a traditional individual interview, some of our programs require candidates to participate in additional activities that simulate graduate-level work, such as those outlined in Table 3. These activities are required based on our school district's preferences (UTRU, 2014). Once interviews are completed, the university and district GYO coordinators review the scoring rubrics and select candidates for a cohort. Both the IHE and partners participate in the interview process to ensure the candidate is a good fit for the school and demonstrates the skills necessary to complete graduate

programming.

Partnership Strategies to Prepare Candidates through Education and Practice

The quality of preparation is critically important for preservice teachers and leads to retention (Darling-Hammond et al., 2002; DeAngelis et al., 2013). However, traditional teacher preparation programs have been critiqued for their focus on theory with limited and disconnected opportunities for aligned field and clinical experiences (Podolsky et al., 2019). These critiques, along with the significant shortages, led to the creation of how our GYO models provide coursework and practice-based experiences. In the GYO models, IHE and district partners share responsibility and collaborate to prepare teacher candidates to work in schools. In this section, we discuss the specific partnership strategies we have applied to prepare preservice teachers. These include (a) providing year-long clinical experiences, (b) targeting priorities and practices, (c) aligning coursework and clinical experiences, (d) removing siloed course preparation, (e) hiring knowledgeable university supervisors, (f) choosing effective mentor teachers, and (g) providing professional development.

Provide Year-long Clinical Experiences

A Schools and Staffing Survey found that preservice educators who had a

semester or more of teaching practice prior to employment were three times less likely to leave teaching after a year compared to those who had no teaching practice at all (Ingersoll et al., 2014). As mentioned previously, our state requires a minimum of 12 continuous weeks for student teaching (Minnesota Administrative Rule, 2021). Both of our GYO models take that a step further and provide substantial opportunities for longer, richer, fieldwork experiences through a full academic year of clinical. In our GYO models, we align coursework with the clinical experiences as our preservice educators simultaneously complete license-specific coursework that is tightly integrated with paid experience in the field. Once the academic school year starts, candidates in our residency model teach alongside a mentor teacher four days per week. In our Work and Learn model, the paraprofessionals and provisional teachers teach five days per week and are supported by an experienced educator. Given the value of the year-long experience reported not only by preservice educators, but also by mentors, and district administrators (Beck, 2016; Chu & Wang, 2022; Gardiner, 2011; Garza & Werner, 2014), it is important to address the specific components that make this year-long experience effective.

Target Priorities and Practices

Elements of exemplary teacher education programs include a common, clear

TABLE 4: Crosswalk Example

IHE Evaluation	District Evaluation	CEC HLP Practices	Teaching Works	Danielson Clusters
Aligns learning targets to standards and student data and uses information to plan Uses content, resources, and student strengths and knowledge to design effective instruction Plans for assessment and differentiation	Plans units and lessons effectively	HLP 11: Identify and prioritize long- and short-term learning goals HLP 12: Systematically design instruction toward a specific learning goal	Designs single lessons and sequences of lessons	Clarity of instructional purpose and accuracy of instructional content
Uses varied assessment techniques to advance student learning	Uses formative assessment to inform instruction	HLP 6: Uses assessment data, analyze instructional practices, and make necessary adjustments that improve student outcomes	Checks student understanding during and at the conclusion of lessons Selects and designs formal assessments of student learning	Successful Learning by All Students
Facilitates activities and discussions to promote high cognitive engagement	Uses pacing and structure Uses instructional strategies to engage students	HLP 13: Adapt curriculum tasks and materials for specific learning goals HLP 18: Uses strategies to promote active student engagement	Explains and models content, practices, and strategies Leads a group discussion	Clarity of instructional purpose and accuracy of instructional content
Creates a respectful classroom culture of trust, safety, and high expectations Establishes and maintains clear expectations for classroom and behavior management	Creates a safe learning environment Establishes and maintains classroom routines and procedures Monitors and provides feedback on student behavior	HLP 7: Establish a consistent, organized, and respectful learning environment HLP 8 & 22: Provides positive and constructive feedback to guide students' learning and behavior	Builds respectful relationships with students Implements norms and routines for classroom discourse and work implementing	A safe, respectful, supportive, and challenging classroom environment Classroom management

vision of good teaching that is embedded in coursework and clinical experiences (Darling-Hammond, 2006). One of the first steps we take in our GYO models is to bring together our IHE and school partner stakeholders to discuss this vision by reviewing teacher evaluation tools, state license requirements accreditation standards, and professional organizations' recommendations (i.e., CEC). Collaboratively, we create a crosswalk

to examine similarities and differences across all these requirements including high-leverage practices (HLP, McLeskey et al., 2017), which describe the fundamentals of teaching, and the Framework for Teaching Clusters (Danielson, 2007) that include the skills that promote high levels of student performance. Then, together, we map out the scope and sequence of these targeted practices and embed these, along with

evidence-based practices (EBP) and socioculturally and linguistically sustaining practices, across the one to two years of the program and determine alignment across coursework, clinical experience expectations, and professional development (i.e., instructor, university supervisor, and mentor teacher). We review this each year with stakeholders to adjust and revise the program. Table 4 includes an example of part of a crosswalk.

Align Coursework and Clinical Experiences

A key component of our GYO models is the integration between coursework and clinical experience. In our model, teacher candidates take coursework while student teaching. Consequently, it's critically important to align classroom teaching with relevant coursework and leverage the mentor teachers' expertise and responsibility as teacher educators (Klein et al., 2015). This requires collaboration across the coursework instructors, university supervisors, and mentor teachers. Once we have the scope and sequence of the key practices, we plan for the alignment of coursework and clinical experiences. We engage in this collaboration through quarterly instructor retreats, monthly mentor teacher professional development, and monthly university supervisor meetings. In addition, we use a learning cycle as an organizing framework to outline shared responsibilities in the development and growth of the resident.

Remove Siloed Course Preparation

In a traditional model, most of the learning in teacher education programs occurs in coursework that is largely divorced from practice in schools (McLeskey et al., 2017). Our GYO model requires instructors to reconsider siloed preparation and examine connections from their course to other courses as well as their application to actual classrooms and students. We require faculty to talk with one another and learn from our school district colleagues. One way we accomplish this is through quarterly faculty retreats.

Importantly, we also include experienced teachers and leaders from the district as adjuncts to teach or coteach courses with university faculty. These teaching models allow us to focus on the district's priorities and share the responsibility of preparing teachers. In

our GYO models, having the district perspective within the university course helps to provide connections between what candidates are learning in the coursework and actual application in the settings in which they are teaching. Utilizing educators and administrators from our partner schools to serve as adjunct professors and teach courses benefits our teacher preparation program as we can more closely align our curriculum with the needs and strengths of districts and prepare preservice educators for the context in which they will work, leading to increased retention. For example, in one of our pathways, 50 percent of the courses are taught by or co-taught with district teachers and leaders.

Hire Knowledgeable University Supervisors

Our university supervisors serve as the bridge between coursework and clinical experience and play an important role in the development of the preservice teacher. Our university supervisors provide regular observations and coaching conversations focused on the targeted practices and priorities. We hire university supervisors who have deep connections and knowledge of the districts. They know the expectations of a successful teacher in the school communities and can coach and evaluate with this in mind. Our university supervisors serve as university liaisons who collaborate with the mentor teachers and preservice educators to complete what we consider the *triad*. The triad works together throughout the school year to individualize coaching, provide professional development, and evaluate the pre-service educator. University supervisors collaborate through monthly meetings and participate in mentor teacher professional development.

Choose Effective Mentor Teachers

While the coursework and instructors are important, the most important teach-

er educators in our GYO model are our mentor teachers (Klein et al., 2015). Our mentor teachers are school-based teacher educators who play an important role in bridging theoretical knowledge and classroom teaching (Chu & Wang, 2022). Integrating course learning and assignments into the authentic classroom requires a flexible and responsive learning environment. In our residency model, the cotaught classroom, shared between the mentor teacher and preservice educator, becomes a space to practice and refine teaching skills. We require our mentor teachers to not only be effective teachers with their K-12 students but also to have the ability to (a) model and coach on effective teaching practices, (b) make their teaching practices explicit, (c) provide multiple opportunities for our preservice educators to practice teaching, (d) provide evidence-based feedback, and (e) actively address patterns of inequity. To prepare mentor teachers to step into this important teacher leadership role, we collaborate with our school partners to recruit, select, and prepare effective mentors (Leon, 2014; Lillo, 2018; Roegman et al., 2017).

Our mentor teachers must meet state and district requirements (e.g., number of years teaching, correct license, and tenure). We ask mentor teachers to apply and include information about their preferred style of communication, collaboration, and equity lens. Candidates also complete a survey, requesting information about geographic preferences, start times, transportation needs, and communication and collaboration preferences. We use this information to match our teacher candidates with mentor teachers. The residency program hosts a meet-and-greet event for building administrators, mentor teachers, and candidates to meet one another and begin building relationships before the school year begins.

TABLE 5: Assignment Alignment

LEARNING CYCLE	UNIVERSAL DESIGN FOR LEARNING (UDL) ASSIGNMENT
Introduce/Prepare	Read and view material about UDL. Participate in class discussions about UDL. Select a subject area and learner(s) to focus on. Gather information about the assets, preferences, interests, and social identities of focus learner(s).
Practice	Given the identified information about the learner(s), design a lesson that includes the principles of UDL. Share the lesson plan during class with peers to obtain feedback.
Enact	Teach the designed lesson during observation from a Mentor Teacher or University Supervisor.
Analyze	Reflect, analyze, and meet with observers and discuss taught lesson including the integration of the identified information about the learner(s) and components of utilized UDL principles. Reflect and incorporate revisions in the lesson.

Provide Professional Development

Our residency course instructors and university supervisors participate in advanced professional development through quarterly (i.e., each academic semester) retreats with district leaders and GYO staff. In these retreats, we discuss unique characteristics of our GYO model, share the targeted practices and scope and sequence, and work to align content and assignments across the year-long clinical experience. We use a learning cycle (University of Washington, n.d.) to organize priority practices, which includes the following steps (1) introduce, (2) prepare, (3) enact, and (4) analyze (McDonald et al., 2013). Table 5 includes an example of an assignment that requires collaboration between the course instructor, university supervisor, and mentor teacher.

Every retreat includes content, reflection, and discussion on anti-racism and anti-bias teaching and learning, including exploring identity and bias. We use

this critical lens to examine EBPs and HLPs and apply them in socioculturally and linguistically sustaining ways. During retreats, we ask instructors to reflect on work submitted by candidates and identify opportunities for edits or adjustments of assignments. Given the opportunity for ongoing reflection, instructors find opportunities for their own growth as well as ways to ensure our preservice educators are prepared to be effective and socioculturally and linguistically competent teachers.

As a result of these retreats and ongoing discussions with instructors, we have made changes to our programs. For example, we replaced some textbooks with more relevant, critically conscious, and inclusive books, such as *Cultivating Genius: An Equity Framework for Culturally and Historically Responsive Literacy* (Muhammad, 2020) and *We Want to Do More Than Survive: Abolitionist Teaching and the Pursuit of Educational Freedom* (Love,

2019). We have also revised and created assignments that align across courses and with the clinical experience, such as the assignment outlined in Table 5. In some of our partnerships, the districts invite our instructors and university supervisors to participate in and provide school-wide professional development.

Partnership Strategies to Reduce Financial Cost to Become a Licensed Educator

More than two-thirds of individuals entering the field of education borrow money to pay for their higher education, resulting in an average debt of about \$50,000 for those with a master's degree (Podolsky et al., 2019; U.S. Department of Education, 2015). The increasing burden of college debt is a large hurdle in pursuing educational careers. In 2022, approximately forty-eight million borrowers collectively owe more than \$1.7 trillion in federal student and private loans (Federal Stu-

dent Aid, 2022). This amount surpasses credit card debt and auto loans (Council of Foreign Relations, 2022). Based on the National Center for Education Statistics *Baccalaureate and Beyond* (Cominole et al., 2021), Black graduate students have around \$25,000 more in debt than white graduates and Hispanic college students borrow about the same as their white counterparts but have twice as high loan default rates. Incurring debt has been found to increase the odds that students chose higher-salary jobs and reduce the probability they chose ‘public interest’ jobs, such as education (Podolsky et al., 2019; Rothstein & Rouse, 2011). Both versions of our GYO models provide an affordable and accessible program to earn a teaching license and master’s degree by reducing the number of required credits, providing pay to preservice educators during their year-long clinical experiences, and collaborating to secure state, federal and philanthropic financial support.

Reduce Credits

In our state, candidates who did not receive an undergraduate degree in education, are required to take courses focused on teaching pedagogy to meet the standards of practice for the teaching profession (Minnesota Administrative Rule, 2016). These requirements add on courses and additional credit burdens to future educators seeking a first teaching license. In addition to basic educational courses, candidates must take required license-specific courses. Individuals seeking a master’s degree have research course requirements as well. Our traditional on-campus program requires 43 credits, but our GYO programs only require 34. We have reduced the credit load for our GYO programs by making some three-credit courses into two-credit courses to provide the preservice educators credit for the training that occurs on-the-job. Financially, our

IHE can justify this reduction as our school districts collaboratively recruit candidates to take our college courses, and some host the courses on their school sites. Thus, preservice educators in our GYO models save money while receiving full preparation programming. This is important as education may not pay as much as some professions (e.g., law, medicine) that better justify large upfront costs (Podolsky et al., 2019). Thus, removing the possibility of high student loan debt is important as earning potential after graduation can impact upward economic mobility.

Provide Paid Experience

Prospective teachers may be more likely to choose a pathway in which they can earn a salary while taking courses (Podolsky et al., 2019). Our candidates are both students at the university and employees of the district. During the academic year, our partner schools pay our candidates to remove the financial barrier of not being paid during the student teaching experience. In our residency model, districts pay a living-wage stipend or salary and benefits to candidates as they learn to teach in an experienced teacher’s classroom and take coursework. In our Work and Learn model, districts pay candidates working in the field as paraprofessionals and provisional educators. In return, our candidates typically commit to teaching in the partnering district for two to three years after graduation. Additionally, the program leads to a master’s degree. Working simultaneously towards a license and master’s degree provides candidates an opportunity for a larger salary in most school districts.

Seek State and Philanthropic Financial Support

Recognizing that the cost of tuition, even with reduced credits, continues to be a barrier to becoming a teacher, we collaborate with district partners to

advocate for and seek tuition support. With our partners, we lobby at the state level to create and increase funding for GYO grant programs for districts to support stipends and off-set tuition for pre-service teachers, especially candidates from traditionally underrepresented communities. We have received several foundation grants to support candidates including tuition support, emergency funds, and financial support for testing requirements. Partnerships afford us the opportunity to share the cost across systems, districts, IHEs, state and federal government, and through philanthropy. Partnerships provide us the means to lower the barriers for the individual candidate and work collaboratively to share the financial burden.

Partnership Strategies to Impact Retention Before and After Graduation

Turnover or attrition is when teachers leave the educational field to change careers and engage in non-education work, stay home with children, or retire from their profession (The IRIS Center, 2013). Over a number of years, the turnover rate among special education teachers has been at around 25 percent (Billingsley, 2004; Boe et al., 2007; Connelly & Graham, 2009; Guarino et al., 2006; Nance & Calabrese, 2009). Before graduation, our goal is to retain candidates and support them in the completion of our comprehensive GYO teacher preparation program. Research demonstrates that beginning teachers who enter the profession comprehensively prepared are more likely to stay in the field and they are less likely to leave teaching after a year than teachers with little or no pedagogical training (DeAngelis et al., 2013; Ingersoll et al., 2014; Podolsky et al., 2019).

After graduation, our goal is for our prepared educators to remain in the schools (and subjects) where they are

most needed and have been prepared (Hammerness et al. 2016). Research on context-specific teacher preparation, like our GYO programs, suggests that graduates remain in teaching longer than their peers from programs that offer less specific preparation (Feiman-Nemser et al., 2014; Tamir, 2010; 2013). Research also suggests that GYO pathways attract greater diversity into the teaching workforce, supplying teachers in hard-to-staff subjects while retaining them in the sponsoring districts at much higher rates than traditional teacher preparation programs (Guha & Darling-Hammond, 2016; Papay et al., 2012; Silva et al., 2014). We use several retention strategies during candidates' time at the university and after graduation, including (a) structuring cohorts, (b) monitoring progress, (c) advising, (d) reducing isolation through affinity groups, (e) supporting to meet licensure requirements, (f) preparing to secure employment, and (g) ensuring induction support.

Structure Cohorts

To alleviate feelings of isolation, our preservice educators in our GYO models complete their coursework in a cohort, which means they take all the same courses together. In addition, the IHE registers candidates for their classes. Our cohort structure provides extended engagement and supports the intentional development of a community among our candidates (Barnett et al., 2000). It also provides a context to allow our candidates the opportunity to (a) receive and give peer support to each other (Doolen & Biddlecombe, 2014); (b) participate and learn from each other (Olson et al., 2011); (c) collaborate (Shortell et al., 2007); and (d) share experiences (Tinto, 2012). Research shows peer support networks strengthen skills (Wegener et al., 2016) and career development (Ritchie et al., 2018), and reduce attrition to support

retention (Jones et al., 2006).

Monitor Progress and Advise

Our GYO models include active monitoring and advising of candidates to ensure retention. Our faculty coordinators in our Residency and Work and Learn models communicate with course instructors regularly to remind them of priority practices and other coursework and clinical applications. We require instructors to monitor the attendance and progress of the candidates. One of the first courses our candidates take is Pathways to Teaching. This course includes relationship-development strategies, problem-solving reflection, and embedded advising. In our Residency model, this course extends across the academic year and is taught by our faculty residency coordinator and our school district partner's residency coordinator. In our Residency model, the university coordinator and district coordinator meet one-on-one with each resident at least once each semester to check on their well-being and progress and remind them of license requirements. In our Work and Learn model, our GYO coordinators provide advising sessions each semester. Struggling candidates in both models are provided one-on-one support plans, created with input from sources such as the preservice educator, course instructor(s), mentor teacher, university supervisor, university program coordinator, district program coordinator, and representatives from the district.

Form Affinity Groups

To retain candidates, including those from traditionally unrepresented communities, we ensure they do not experience isolation based on their social identities (Rowland et al., 2023). Affinity groups can provide affirming space where participants can engage in honest dialogue, collaborative problem-solving, and self-advocacy to meet personal

and professional goals (Bristol et al., 2020). We have collaborated with our district partners to set up opportunities for candidates to form affinity groups based on the criteria they self-select. These affinity groups are led by graduates and district leaders. For example, one of our partners has a monthly affinity group for Men of Color. We support the affinity groups by collaboratively writing grants to fund the stipends for leaders and pay for materials and refreshments.

Support to Meet License Requirements

The National Center for Education Statistics reports that 30 percent of candidates who did not complete license requirements leave the profession within a five-year span, compared to 15 percent of fully licensed teachers (Gray & Taie, 2015). With this in mind, we provide regularly scheduled test support sessions for the required state examinations and seek out grant support to pay for the exams. Our current pass rate for the state special education content exam is 97 percent.

Prepare to Secure Employment

With our partners, we prepare candidates to secure employment after graduation. About four months before they finish the Residency program, we co-host an interview preparation session with district human resource representatives. During this workshop, human resource personnel describe the application and interview process, meet with candidates to review their resumes and participate in mini-mock interview sessions. One of the class assignments is "Launching your Teaching Profession" where candidates create a portfolio including a resume, cover letter, and artifacts from their teacher preparation experience. Early in the program, we set up field experiences across grade levels of students and different disability areas

to help teachers identify the job type they would like to seek employment. Finally, we ask our partner schools to determine available employment opportunities in their schools in the next school year and provide this information to candidates.

Ensure Induction Support

Induction supports teachers as they enter the profession. Our focus is on improving novice teachers' performance and retention, ultimately contributing to improving student outcomes (Podolsky et al., 2019). Providing comprehensive, well-designed induction supports has been found to contribute to new teachers staying in the profession at rates more than twice those who did not receive support, accelerated professional growth, and improved student learning (Bastian & Marks, 2017; Glazerman et al., 2010; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Podolsky et al., 2019; Villar & Strong, 2007). In our Residency partnership with charter schools, we take a tiered approach to induction support. The first level of support is provided by the district. These induction activities include district-provided teacher orientation and professional development seminars and induction support from experienced teachers (e.g., coaching, mentoring, feedback, and opportunities to observe) (Ingersoll & Strong, 2011). At the second tier, we provide an induction support person who holds drop-in office hours where candidates can come to get help with teaching dilemmas in the field. For example, help with scheduling paraprofessionals during a school day. We also provide continued professional development (e.g., microcredentials awarded by digital badges) on topics where our previous graduates have been shown to need support (e.g., educating multilingual students in special education) at no cost to our graduates. At the top tier, our induction support person

goes into the field to provide support. This level of support is initiated by the candidate or a district administrator and is customized to the individual.

CONCLUSION

Given significant and complex issues surrounding special education shortages and lack of diversity in the workforce, IHEs and districts must partner to recruit, prepare, and retain educators, including those from traditionally underrepresented communities. In this article, we highlighted how our IHE has authentically partnered to create two GYO programs to remove barriers to becoming an educator. It is important to note that within our GYO programs, we utilize improvement science to review evaluation data collected from our preservice candidates, GYO coordinators, faculty and staff, course instructors, mentor teachers, graduates, university supervisors, and district leaders to determine our candidates' growth and competency in targeted areas and, based on results, adjust our preparation program as needed. For example, during Covid, we changed the course load during one semester in our Work and Learn programs based on candidates' feedback. In our residency model, based on feedback, we have adjusted the course schedule to align with providing information on topics for residents when they need it and can best apply it. Through these sustained and collaborative partnerships, we continue to grow and learn together to provide a teacher preparation program that produces high-quality socially-just special educators.

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Leveraging the Paraeducator-to-Teacher Pipeline to Attract and Prepare Special Education Teachers

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ABSTRACT

The well-documented special education teacher shortage in the U.S. has significant negative consequences for students with disabilities who require specially designed instruction from special education teachers. To address this shortage, special education teacher preparation programs should explore innovative approaches to recruiting and training future special education teachers. One such approach is the paraeducator-to-teacher (PTT) pipeline in which paraeducators complete preservice coursework and on-the-job training to earn their special education certification. In this article, we present two PTT pipelines that exist within one special education teacher preparation program. First, we review the literature on PTT pipelines and their efficacy in building the field. Next, we provide an overview of the special education teacher preparation program of interest and its state context, followed by descriptions of the program's two PTT pipelines. We then discuss the levers that support implementation of each PTT pipeline. Finally, we present considerations for special education teacher preparation programs to ensure PTT pipelines expand the special education teaching workforce with well-prepared, high-quality special education teachers equipped to support students with disabilities.

KEYWORDS

Grow-your-own, paraeducator-to-teacher pipeline, special education teacher preparation

The special education teacher shortage is well documented across the United States (Billingsley & Bettini, 2019). For decades, states struggled to fill open positions with fully credentialed special education teachers (Boe & Cook, 2006), and the COVID-19 pandemic has likely exacerbated this problem (Carver-Thomas et al., 2021). High attrition rates and increases in demand for special education teachers, coupled with declines in teacher preparation enrollments, have contributed to this severe and chronic shortage (Ondrasek et al., 2020). This shortage is a source of concern for local, state, and federal agencies charged with educating students with disabilities (Brownell et al., 2018), as the least qualified teachers are often assigned to students with the most complex learning needs (Cruz et al., 2022). The low number of qualified special education teachers likely impedes the ability of students with disabilities to reach their full academic potential and hinders districts' equity-centered work of preparing all students to be college and career ready (Brownell et al., 2020). The lack of certified special educators also cause eligible students to be denied a free and appropriate public education, as mandated by federal law (Individuals with Disabilities Education Act, 2004).

Students with disabilities attending under-resourced schools are further disadvantaged by these shortages (Albrecht et al., 2009; McLeskey et al., 2003). Researchers indicate that students in high-poverty schools received access to fewer certificated

special education teachers than those in more affluent suburban areas, and high-poverty schools were impacted by high turnover rates of special education teachers, thus affecting academic outcomes for students with disabilities (Cruz et al., 2022; Darling-Hammond, 2015). Without mitigation efforts, current special education teachers working in schools and districts with fewer resources and subsequent high turnover will continue to be overburdened and unable to provide systematic, evidence-based individualized instruction (Boe et al., 2013; Warren & Hill, 2018), and students with complex learning needs will be unable to access legally mandated academic and social supports. The special education teacher shortage has reached a critical juncture, and programs must provide clear and consistent training of high-quality candidates to fill vacancies that serve our most vulnerable students.

Boe et al. (2013) found that the history of special education teacher shortages is a major impetus for the proliferation of alternative routes to certification. Many states have responded by endorsing programs that allow rapid, often immediate, entry to the classroom; in addition, 30% of all alternative route programs have substantially reduced training requirements and professional support mechanisms (e.g., California Department of Education, 2012; Rosenberg et al., 2007). Boe et al. problematized this approach because “teacher quality suffered when preparation in the myriad areas needed for success (e.g., instructional supports, behavior management, literacy, etc.) is minimized” (p. 122). Because underprepared special education teachers are less effective (Brownell et al., 2020) and more likely to leave the field (Feng & Sass, 2013), a systemic approach to recruiting and training high-quality special educators is needed (Collaboration for Effective

Educator Development, Accountability, and Reform Center [CEEDAR], 2019). One such approach is the paraeducator-to-teacher (PTT) pipeline in which paraeducators complete preservice coursework and typically receive on-the-job training to earn their teaching certification.

Paraeducator-to-Teacher Pipeline

Paraeducators are school-based employees who assist and support teachers and their students. Although we use the term paraeducators in this article, they may also be referred to as paraprofessionals; educational, instructional, or teacher aides; and educational, instructional, or teaching assistants. Regardless, in this role, paraeducators typically have a range of responsibilities under the direct supervision of a teacher. Special education paraeducators, in particular, frequently provide instructional and behavioral support, including one-on-one instruction, small-group instruction, and behavior management program implementation (Carter et al., 2009). To support students with disabilities effectively, paraeducators require knowledge and skills related to professional learning and ethical practice; learner development and individual learning differences; special education services and supports; assessment; instructional supports and strategies; social, emotional, and behavioral supports; and team collaboration (Council for Exceptional Children [CEC], 2022). Special education teachers also require expertise in these areas (CEC, 2020; McLeskey et al., 2017; Ronfeldt et al., 2013). Therefore, in the special education PTT pipeline, paraeducators can leverage the knowledge and skills they have developed thus far to transition to teaching.

Not only can the PTT pipeline support increased recruitment of special education teachers, thus addressing the teacher

shortage; it can also lead to greater diversity among special education teachers (White, 2004). Though the current teaching workforce is diversifying, shares of teachers of color remain, “disproportionately low compared to the percentage of students of color in public schools” (Carver-Thomas, 2018, p. 2). Research shows that the paraeducator workforce is more racially and ethnically diverse than the teacher workforce. While people of color compose only 18% of the special education teacher workforce in the United States, they compose 39% of the paraeducator workforce (Billingsley et al., 2019; Bisht et al., 2021). Thus, as paraeducators transition to teaching, the teacher workforce may likely diversify.

Teacher diversity is important for several reasons. First, teachers of color are more likely to teach in schools with higher proportions of students from racially and ethnically marginalized backgrounds and low-income backgrounds than in schools with lower proportions (Carver-Thomas, 2018; U.S. Department of Education, National Center for Education Statistics [USDOE, NCES], 2021b). As such, greater diversity among teachers can help address the critical shortage of teachers in what are often deemed high-needs schools. Second, given that most students educated in U.S. public schools and almost half of the students who receive special education services are students of color (USDOE NCES, 2021a, 2022), increased teacher diversity allows the teacher workforce to reflect U.S. societal and student diversity. Teacher diversity can contribute to more students of color having same-race teachers, which can promote positive academic and behavioral outcomes among students of color (e.g., Pugach et al., 2019; Redding, 2019; Trainor et al., 2019).

Researchers indicate that teachers of color often leverage their cultural and linguistic funds of knowledge to teach

and interact with students from historically marginalized backgrounds in culturally and linguistically affirming ways (Abbate-Vaughn & Paugh, 2009; Kohli & Pizarro, 2016; Kulkarni et al., 2021; Moll et al., 1992). Therefore, expanding the special education teacher workforce with paraeducators, diverse in race and ethnicity, may help reduce the significant discrepancy between the proportions of special education teachers of color and students of color with disabilities. For these reasons, the special education teacher workforce would benefit from the presence of paraeducators (i.e., a group of individuals who are more diverse than teachers) and the funds of knowledge they bring (Abbate-Vaughn & Paugh, 2009). Recruiting paraeducators to become certified special educators in their home schools may serve as a unique human capital resource, built through both formal programming and on-the-job training to address issues of both quantity (i.e., the teacher shortage) and quality (e.g., a diverse body of educators with a deep knowledge of the community and classroom).

Purpose

The purpose of this article is to present two PTT pipelines that exist within the authors' special education teacher preparation program in Maryland. We describe the special education teacher shortage in Maryland, followed by an overview of our special education teacher preparation program. We then discuss the program's two PTT pipelines, including the levers that may support each pipeline as well as the challenges and limitations that may hinder each pipeline. Given both supportive factors and potential barriers, we also present considerations for special education teacher preparation programs regarding how to leverage PTT pipelines so that they expand the special education teaching workforce with well-prepared,

high-quality special education teachers.

STATE CONTEXT AND PROGRAM OVERVIEW

In line with national trends, the Maryland State Department of Education ([MSDE], 2018) has reported a "critical shortage" of teachers, with recent estimates of nearly 2,000 vacancies, many of which were special education positions. Yet the number of practitioners completing teacher preparation programs is steadily declining. In fact, Maryland programs have experienced a 33% reduction in enrollment since 2012 (Maryland State Board of Education [MSBE], 2022), while some geographic areas are more impacted than others. Thus, the Maryland special education teacher shortage and low enrollment in Maryland special education teacher education programs indicate a need for comprehensive pathways designed to serve local communities. Several school districts within the state of Maryland have committed to partnerships with local universities to provide tuition reimbursement and additional support for employees seeking teacher certification. These partnership programs focus on expanding the candidate pool with respect to applicants representing diverse backgrounds and systemic areas of critical need (e.g., special education). Further, the MSDE has committed to providing grant funding for Grow Your Own (GYO) partnerships focused on "developing teachers from the local community, removing barriers to entering and persisting in a teacher preparation program, and incentivizing partnerships between school districts and educator preparation programs" (MSBE, 2022, p. 12).

In Maryland, our graduate school of education (SOE) offers a Master of Science in Special Education focused on teaching students with disabilities in grades 1–8 or 6–12, in alignment with options for special education certifi-

cation in Maryland. This program is also a Maryland-approved certification program that candidates can complete to become eligible for their special education certification. Therefore, most candidates complete this master's program as a means to certification. While completing the program, candidates take several courses in preparation to become high-quality special education teachers, such as Collaborative Programming and Access to the General Education Curriculum. Additionally, candidates complete two internships that provide the opportunity to apply and further develop the knowledge and skills they have gained thus far in the program while working directly with students with disabilities.

Two PTT pipelines exist within this special education master's program, both requiring two years of combined coursework and two internships for graduation. The first pipeline is an immersion training partnership with a local school district. As part of this partnership, district paraeducators and other school-based employees who are eligible for employee benefits earn their master's degree in two years and become eligible for their special education certification. The second pipeline is an MSDE-funded GYO partnership that recruits paraeducators throughout the state of Maryland, with specific recruitment efforts targeted in under-resourced and hard-to-staff schools. While the immersion training partnership has been in operation for almost 20 years, the GYO partnership began in 2019, with only preliminary efficacy data.

In addition to being a paraeducator in our partner school district (for the first pipeline) or Maryland at large (for the second pipeline), applicants must hold a bachelor's degree with a minimum cumulative GPA of 3.0 (or a minimum SAT/Praxis I score if a cumulative GPA is below 3.0). Applicants must also submit a résumé; a 500-word personal

TABLE 1: Pipeline Features

FEATURE	IMMERSION TRAINING PARTNERSHIP	GROW-YOUR-OWN PARTNERSHIP
Targeted Recruitment	Direct partnership with a district experiencing teacher shortages	Statewide program with specific recruitment efforts in under-resourced schools
Eligibility Requirements	Bachelor's degree and current employment in partner district as a paraeducator or other full-time benefits-eligible school-based employee	Bachelor's degree and current employment in MD school district as a paraeducator
Supports Offered	Professional development via school district	One-hour monthly support sessions addressing urgent problems of practice and equity-centered content directly applied to teaching practice
Benefits to Participants	District-negotiated partial tuition reimbursement per credit	75% tuition reimbursement; \$100 per semester for books and supplies
Commitment to Teaching	Must remain employed in district while participating in partnership	Three years of full-time teaching upon program completion
Evidence of Success	Began in 2006; approximately 100 participants, 90% of whom have graduated with teaching certification	Began in 2019; 10 total participants, 6 of whom have successfully completed the program

statement regarding academic and professional goals; and two letters of recommendation from individuals who can comment on their experiences with children, preferably students with disabilities. Applicants who receive an average application rating of 3.0 on a 4-point scale (across all areas and reviewers) are invited to participate in a 30-minute virtual interview, which explores the applicant's professional interests, goals, and dispositions related to leadership, diversity, and collaboration.

To graduate from the program with certification eligibility, candidates in both pipelines must complete a 39-credit prescribed course sequence. They must also pass a comprehensive exam at the program's midpoint, two Praxis Subject tests (i.e., the Special Education: Core Knowledge and Applications and the Teaching Reading: Elementary), and the edTPA. Completing these requirements results in candidates earning the Maryland-Approved Program stamp upon graduation, which signifies their eligi-

bility for the renewable standard professional certificate in Maryland.

The program's course sequence also includes a fall and spring internship course, which candidates complete in their schools of employment during the second year of the program. In these job-embedded internships, candidates work directly with students with (and, possibly, without) disabilities in grades 1–8 or 6–12, depending on each candidate's target grade range for certification. Not only do they earn their master's degrees and certification eligibility, but candidates also maintain their employment while completing the program (particularly the internships) and, thus, maintain access to their salary and employee benefits. Candidates in the district partnership receive partial tuition support from their district of employment, while candidates in the GYO partnership receive partial tuition reimbursement from the MSDE, with a requirement that they complete two years of teaching in Maryland for each

year of tuition support provided. These financial benefits are especially important considering that paraeducators earn less than half of a teacher's salary (Bisht et al., 2021; Theobald et al., 2023). It should be noted that, while this program comprises two years of intensive coursework and training, it is not considered an alternate route to certification. See Table 1 for the features of each pipeline.

Strategies Supporting PTT Pipelines

Several strategies can be used to facilitate the implementation of PTT pipelines. These strategies include collaborating with districts to recruit candidates, deliberately designing the structure and format of our coursework, and utilizing job-embedded assignments, and job-embedded internships.

District Recruiting

To recruit for the immersion training partnership each year, we host three virtual informational sessions, which

are publicized on the SOE's website and via district outlets (e.g., monthly newsletters). The SOE advisor of the partnership and the district's lead for higher education partnerships co-lead these sessions to introduce the master's degree program and explain how the partnership operates. Additionally, special education program faculty attend district-sponsored events (e.g., paraeducator professional development sessions) to recruit applicants for the partnership. In doing so, we aim to increase the number of candidates in our degree program with plans to serve as certified special education teachers in our partner district. While recruiting candidates for our immersion training partnership requires a district liaison who advocates for the partnership, recruiting for the GYO partnership requires collaboration with a state liaison. Both the state liaison and the special education program lead rely on contacts with state, district, and school leaders to disseminate recruitment materials to potential candidates.

Coursework Design

Our 13-course program leverages a hybrid approach to coursework, with seven courses offered in person, five courses held in an asynchronous virtual environment, and one course offered online in a synchronous format. Our in-person courses are held in a location that is convenient for candidates traveling from several school districts and in the evenings to meet the needs of paraeducators and other individuals who work during the day. Additionally, candidates complete four virtual courses across two summer sessions—during which paraeducators and other school-based employees typically have more time to engage in self-paced learning—and two asynchronous courses that accompany candidates' two internships.

Job-Embedded Assignments and Internships

Because our PTT pipelines support professionals already connected to classrooms in impacted geographical locations (MSBE, 2022), our pipelines can provide authentic, iterative learning experiences, allowing candidates to work with students with whom they already have relationships. These learning experiences can emphasize cycles of inquiry (e.g., plan, implement, reflect, repeat) as candidates receive in-depth feedback in order to refine a lesson sequence by integrating instructor feedback and their own reflections. This pedagogical tool equips candidates with skills necessary for performance-based assessments typically required for licensure (e.g., edTPA, 2018) and for future engagement with school-based professional development (e.g., professional learning communities; see Dogan et al., 2016; Shelton et al., 2023). Job-embedded internships, in particular, provide candidates with immediate quality mentoring and supervised practice in delivering high-quality instruction that is closely aligned with their current work assignments. These internships are especially beneficial because mentorship, specialized training, and social supports are critical for special education teachers during their first years of teaching, and these supports must come from within school communities (Hagaman & Casey, 2018).

Barriers Hindering PTT Pipelines

Both PTT pipelines (i.e., immersion training and GYO partnerships) have provided the benefits of growth-in-practice modes of teacher learning that are tightly connected to paraeducators' daily classroom experiences and have thus proven more effective than passive models of teacher preparation (see Firestone et al., 2020). Nevertheless, there are several barriers to implementation worth noting.

Despite the innovation of our two pipelines, our cohorts are small—an issue that has been exacerbated during the COVID-19 pandemic. Not only are individuals not seeking to become teachers at the rate they once did, but also many paraeducators are not eligible for our program given that a bachelor's degree is an admissions requirement but not a requirement to be a paraeducator (No Child Left Behind Act of 2001, 2002). In fact, approximately 75% of paraeducators do not have a bachelor's degree (Bisht et al., 2021). As such, one barrier we face is having graduate-level PTT pipelines. Therefore, we seek additional opportunities to recruit college graduates interested in becoming traditionally certified special education teachers.

Because the teacher shortage is pervasive, our program faces a second barrier in that our paraeducator participants are often offered the chance to become conditionally licensed teachers before they complete the program, allowing them to teach for two years without certification. Though we encourage paraeducators to complete the program prior to leading a classroom as the teacher of record, many are unable to financially sustain this approach, especially considering that many also have families to support. Therefore, many paraeducators accept this offer, which comes with a significant salary increase (Bisht et al., 2021). When this transition occurs, candidates often spend considerable time with faculty advisors and in core courses working through urgent problems of practice, which leaves less time for the structured knowledge and skill development beginning special education teachers need. We aimed to strengthen our support for participants through a cohort model and by allowing flexibility in coursework format.

The third barrier is structural: the siloed nature of teacher training and practice for special and general education leads to difficulty in developing

TABLE 2: Implementation Strategies and Barriers**STRATEGIES SUPPORTING PARAEDUCATOR-TO-TEACHER PIPELINES**

Collaborative relationships with partner districts:

Support recruitment, mentorship, and retention

Leverage district-sponsored professional development for paraeducators

Deliberate coursework design and format:

Hybrid course offerings

Face-to-face courses offered in convenient location and at convenient time

Job-embedded assignments leading to job-embedded internships:

Leverage existing relationships with students and community

Include iterative cycles of inquiry to refine lesson sequences through daily instruction

Barriers

Small cohort numbers

COVID pandemic impact on the field

Teachers move from paraeducator to classroom teacher before completing the program

Opportunities to collaborate with general education teacher candidates is limited

Solutions

Expand program to include additional districts

Gradually expand recruitment initiatives

Provide additional monthly support sessions using a Teacher Study Group format

Support integrated training opportunities from a common course framework

preservice teachers' inclusive practices and pedagogy. Although paraeducators in these pipelines must develop an understanding of specially designed instruction, they must also practice and develop the skills to implement universally designed pedagogy. Yet special education teachers are commonly trained separately from general education teachers, perpetuating "enduring fissure[s]" (Cochran-Smith & Dudley-Marling, 2012, p. 237) that maintain the general-special education binary and systematic exclusion (Blanton et al., 2014). This situates dis-ability "as totally disjointed from other issues of educational equity of access" (Waitoller et al., 2021, p. 3). Thus, program faculty have expended significant time searching for

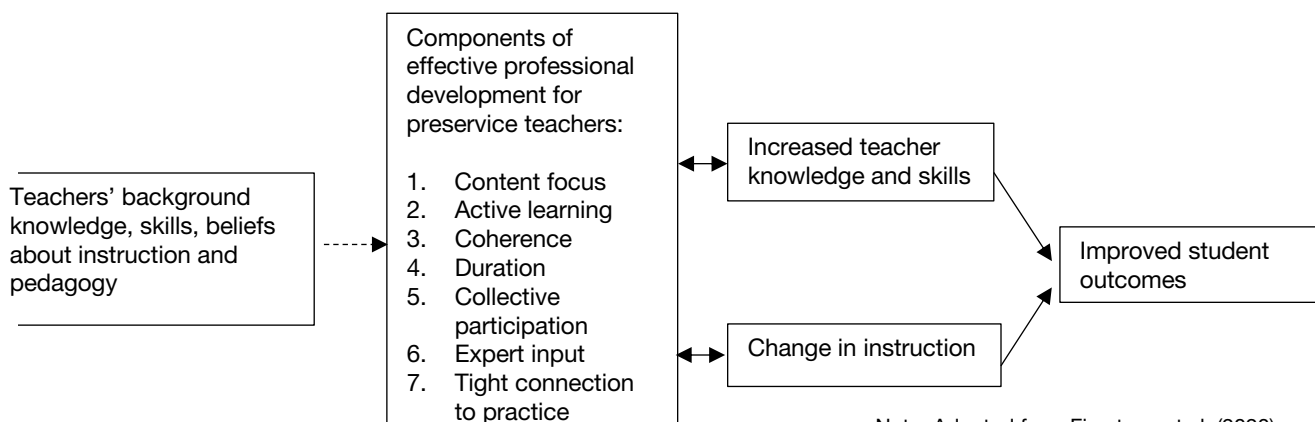
(sometimes to no avail) opportunities for candidates in the immersion training and GYO partnerships to practice inclusive paradigms and pedagogical strategies. Cochran-Smith et al. (2016) argued that equity in teacher education should operate with the "dual purposes of continuously improving local programs, on one hand, and building theory about how, why, to what extent, and under what conditions teacher candidates learn to enact practice for equity, on the other" (p. 68). In this endeavor, our two pipelines have important areas for growth, outlined in Table 2.

Future Directions

To address the barriers, we are actively developing ways to increase the

number of candidates in our program and support candidates in and beyond the program as they complete their first years of teaching. We hope these efforts address the issues around teachers shifting from paraeducator status to fully credentialed—no matter when they make this transition.

Although several local school districts employ paraeducators in special education, our immersion training partnership is a PTT pipeline with only one school district. Therefore, one effort to increase the number of candidates seeking certification via our program is to expand this pipeline with other school districts. Establishing additional partnerships will allow us to increase the number of bachelor-level paraeducators seeking special

FIGURE 1: Theory of Teacher Learning**TABLE 3:** TSG Pilot Scope and Sequence

Timeframe	Topic	Brief Description
December	Overview	Research behind TSGs, study purpose, logistics and scheduling, etc.
January	Introduction to culturally sustaining pedagogy	Shifting from deficit perspectives, framing students as co-constructors of knowledge
February	Universal Design for Learning (UDL): Multiple means of representation	The “what” of learning: Providing options for perception of information, promoting understanding across languages, using multimedia, and highlighting big ideas
March	UDL: Providing a hook for a lesson; linking representation to engagement	Activating background knowledge, creating cognitive dissonance, making connections to students’ lived experiences
April	UDL: Multiple means of engagement	Varying demands and resources to optimize challenge (i.e., the “how” of learning): Providing options for recruiting interest, sustaining effort and persistence, and self-regulation
May	Effective group work	Small-group roles and accountability
June	Inquiry and project-based learning	Student-student dialogue, project-worthy inquiry, project-based tasks
July	Inclusive content-area literacy instruction (summer session)	The “why” and “how” of providing students with disabilities culturally and linguistically responsive, evidence-based literacy instruction using inclusive practices
August	UDL: Multiple means of action and expression	The “why” of learning: Providing options for method of response (e.g., use of multimedia) and enhancing capacity for students to self-monitor progress.

education certification, thus addressing the teacher shortage. Given that the paraeducator workforce is more diverse, expanding the PTT pipeline will likely diversify the teacher workforce, thus promoting the educational outcomes and experiences of students of color, who are largely represented in these districts,

and students of color with disabilities, in particular. Yet bringing new teachers into the profession is only effective if special education teacher attrition is addressed overall (Bettini et al., 2023). Therefore, to help maintain the current workforce, we also aim to support and sustain practitioners once they enter the field.

To this end, we are currently building growth-in-practice professional development opportunities that can support candidates in their transition from the program into their first three years of practice. To support paraeducators throughout the program, we plan to hold small monthly seminars that will provide

candidates with extra coaching and mentoring support during their internship year. This approach uses effective evidence-based strategies for building a novice teacher workforce invested in hard-to-staff communities. Program faculty will also provide monthly support to the paraeducators in: (a) practicing inclusive paradigms and pedagogical strategies; (b) addressing urgent problems of practice; (c) building community with their students' families; (d) advocating for students' social and emotional growth; (e) facilitating Individualized Education Program meetings effectively; and (f) using universally designed curriculum and pedagogy within a multi-tiered system of supports.

As candidates transition from the internship to full-time teaching, we will offer monthly professional development in partnership districts' schools using a Teacher Study Group format (TSG; Firestone et al., 2020). TSGs are a form of collaborative, practitioner-led professional development shown to impact quality of instruction (Desimone & Garet, 2015). TSGs are communities of educators that convene regularly over a sustained period (e.g., an academic school year), engaging in reflective cycles of inquiry focused on the relationship between participants' day-to-day practice and student learning. The model can be understood as a growth-in-practice approach to professional learning, in which teachers are supported in learning from their practice through critical reflection and discussion with other practitioners. We aim to support paraeducator participants as they transition from a support role to a classroom teacher role through our theory of action depicted in Figure 1. Additionally, we are currently piloting an initial scope and sequence of expert content depicted in Table 3.

Our TSGs will aim to build parity between the skills and theories learned in the program and how the schools and

districts in which teachers begin their careers operate. Topics will include inclusive content-area literacy instruction for culturally and linguistically marginalized students (see Shelton et al., 2023; Wexler et al., 2022), Universal Design for Learning (see Hall et al., 2012), and culturally sustaining pedagogy (see Alim et al., 2020). TSGs on these topics will be facilitated meetings, and each meeting will follow a five-step process, adapted from Cunningham et al. (2015): (a) reflection on implementation from the previous session, (b) new content presentation, (c) collaboration for implementation of new content, (d) review and answering of questions, and (e) addressing any urgent problems of practice as identified by the paraeducator participants. The scope and sequence of each TSG session has been developed intentionally to support participants as they enter the workforce and to support practicing teachers with whom they will eventually partner.

Practical Implications

The benefits of and barriers to our pipelines have several practical implications that can support the development of PTT pipelines in other programs. First, partnering with a district to establish a PTT pipeline is beneficial to both the program and the district. For example, the partner district can support the program's recruitment efforts, while the program prepares paraeducators to become special education teachers, thus addressing the special education teacher shortage in the district. This partnership is important as research shows that interning in a particular district increases the likelihood that candidates will teach in that district upon graduation and certification (Goldhaber et al., 2014). As such, we recommend considering whether a PTT partnership would be appropriate for other programs in different settings. In particular, program and

district personnel should convene to discuss whether there is a sufficient pool of paraeducators who are interested in and eligible for the pipeline. If the partnership is appropriate and can be feasibly established, the team should collaborate to establish the pipeline and identify funding sources to support candidates (e.g., district's tuition reimbursement and state funding opportunities).

Second, teacher educators may need to tailor elements of the program to the paraeducator's experience. For example, because candidates in the pipeline are likely full-time school-based employees, they are typically unable to attend morning or afternoon classes. Therefore, the program should have accessible program offerings, including evening and online classes. Additionally, research indicates a need for extended opportunities to work directly with students in school settings (Hammerness et al., 2005), and a PTT pipeline addresses this need by providing coordinated opportunities for candidates to engage in extended clinical experiences in authentic contexts. A program can also leverage paraeducators' jobs supporting and working with students in schools to incorporate job-embedded assignments into most courses. These assignments provide additional practice-based learning opportunities (McDonald et al., 2013), further supporting teacher development. Nevertheless, the success of a program depends on strong relationships within the partnership to create coherence between clinical teaching experiences and theoretical content provided in coursework (Capraro et al., 2010; Darling-Hammond, 2006; Putman & Polly, 2021).

Third, a PTT pipeline should be accompanied by a system that provides candidates with the supports they need. This system should support candidates in balancing their employment and education, which may become more

difficult to establish and maintain if candidates become conditionally licensed teachers before completing the program and now must meet the complex demands special education teachers face (Brownell et al., 2020). This balance may also become more difficult if candidates are nontraditional students who return to school after significant time out of school and have additional responsibilities (e.g., caregiving). As such, a strong system of supports should include financial resources (e.g., district tuition reimbursement), academic and professional resources (e.g., career counseling, writing center support), and resources supporting emotional and mental wellness (e.g., personal counseling). Therefore, programs should consider the supports that are already in place to support candidates, and the additional supports and resources needed from the program and partner district.

Finally, because special education paraeducators often work in restrictive settings (Giangreco et al., 2010; Howley et al., 2017) and, thus, have limited experiences in inclusive settings, it is important to identify and create ways candidates can learn from and collaborate with their general education peers. For example, programs should consider offering a set of core coursework in which general and special education teacher candidates work together to develop and implement lesson plans in inclusive practicum opportunities. Additionally, it is important that programs develop candidates' understanding and application of inclusive practices regardless of the educational setting in which they work. For example, programs should intentionally design their curriculum, instruction, and methods courses from a framework that considers broadening participation and rightful presence (see Calabrese Barton & Tan, 2020) to guide candidates in teaching inclusively and providing students access to rigorous

learning (Cruz et al., 2023; Firestone et al., 2023).

FINAL THOUGHTS

Our SOE has been successful in maintaining two PTT pipelines to recruit and train future special education teachers. For example, approximately 100 candidates have been admitted into and entered the immersion training partnership, and 90% have graduated. Meanwhile, in the GYO partnership, 10 students have been admitted and six have successfully completed the program. These pipelines have the potential to address the special education teacher shortage, while diversifying the field of special education. Yet, barriers exist, including the need to expand the PTT pipelines and support paraeducators as they transition to their beginning years as a teacher. These are barriers that we continually discuss and aim to target to recruit, train, and retain special education teachers in Maryland.

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A Tale of Two Grant-Funded Special Education Recruitment and Training Projects Focused on Assistive Technology

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ABSTRACT

Colorado has a significant shortage of special education teachers, particularly within rural areas. This article will compare two grant-funded recruitment and training projects drawing connections from the current research base in training and retention. High-Leverage Practices were infused into these projects to support authentic assistive technology (AT) implementations and the use of multimodal literacy strategies with K-12 special education students. The recruitment and training grants focused on two distinct pathways for teacher preparation: alternative special education teachers and paraprofessionals. Consistent in both projects was the inclusion of intensive asynchronous online training related to AT and multimodal literacy and coursework assignments incorporating technology into their teaching and learning. The article will include project materials, timelines, training resources, illustrative case studies, and student artifacts showcasing exemplars and practical ways to apply these initiatives within teacher preparation programs.

KEYWORDS

High-leverage practices, online, special education recruitment, training.

Research acknowledges there is a tremendous benefit for K-12 students using assistive technology (AT) to enhance, accommodate, and access their learning (Dalton, 2014; Edyburn, 2010, 2015). Special educators need the knowledge and skills in AT to be able to assist their students. To develop this knowledge and skill, special educators must be active in their own learning, be able to identify the benefit of tools or strategies to implement them with their students, and be able to practice with or integrate technology within their learning to feel proficient using it with students (Oostveen, et al., 2008; Van Laarhoven, et al., 2012).

In 2020, the special education teacher shortage issues in Colorado were at an all-time high with 8.72% of special education positions unfilled or filled using an alternative method such as long-term substitutes in rural districts (CDE Teacher Shortage Dashboard, 2023). The lack of trained special education teachers in Colorado classrooms led to students' learning needs being unmet and compounded the stress of teaching teams trying to serve too many students (Billingsley & Bettini, 2019). The ripple effect of this teacher shortage is exacerbated due to increased workloads for teachers who are working on understaffed teams, especially for the students served in rural school districts. A way to reverse this negative cycle is providing current and relevant AT training and implementation across teacher preparation programs so that special education teachers are more effective in supporting their K-12 students (Cheek et al., 2019). This effort will increase K-12 student independence and create more efficient workloads for teachers.

Confidence with Assistive Technology

AT instruction in teacher preparation programs is an important way to prepare

teachers for incorporating technology into their classroom. In a study by Jones et al. (2021), a dramatic increase in understanding, naming, and applying AT with preservice teachers was noted when given instruction with these services and supports. Creating a focus on AT knowledge, skills, and authentic tool use increases the awareness of and benefits for infusing technology across K-12 special education teacher preparation programs (Edyburn, 2015).

There should be few barriers for K-12 students to implement and use technology accommodations in the daily classroom experience with access to technology tools such as text-to-speech, speech-to-text, and digital annotation and the availability of these programs across different technology platforms free of charge. However, many educators are not proficient at utilizing these supports and/or may presume these supports would not be accessible to students served in special education. The Office of Educational Technology (2017) states

All teachers need to leave their teacher preparation programs with a solid understanding of how to use technology to support learning. Effective use of technology is not an optional add-on or a skill that we simply can expect teachers to pick up once they get into the classroom. Teachers need to know how to use technology to realize each state's learning standards from day one. (p. 35)

Izzo and Bauer (2013) indicate, "when accessible technology and instruction are provided using UDL principles...many students benefit with increased achievement. Learning through universally designed and accessible technology is essential for students with disabilities who, without access, would not gain the skills needed" (p. 17). These efforts positively impact student learning for all students, not just those with eligi-

ble disabilities served in special education programs. AT provides accommodations and specialized access to learning activities as a problem-solving measure when teams have identified roadblocks to learning. By doing this, AT can maximize student success with an equitable learning environment where all students are getting what they need to be successful. With the extreme need for special educators, states are getting creative in how they entice potential candidates to their program. Combining that call to action with the need for knowledge and skills in AT, our universities established projects that funded alternative special education teachers and grow-your-own paraprofessional pipelines.

PROJECT IMPLEMENTATION

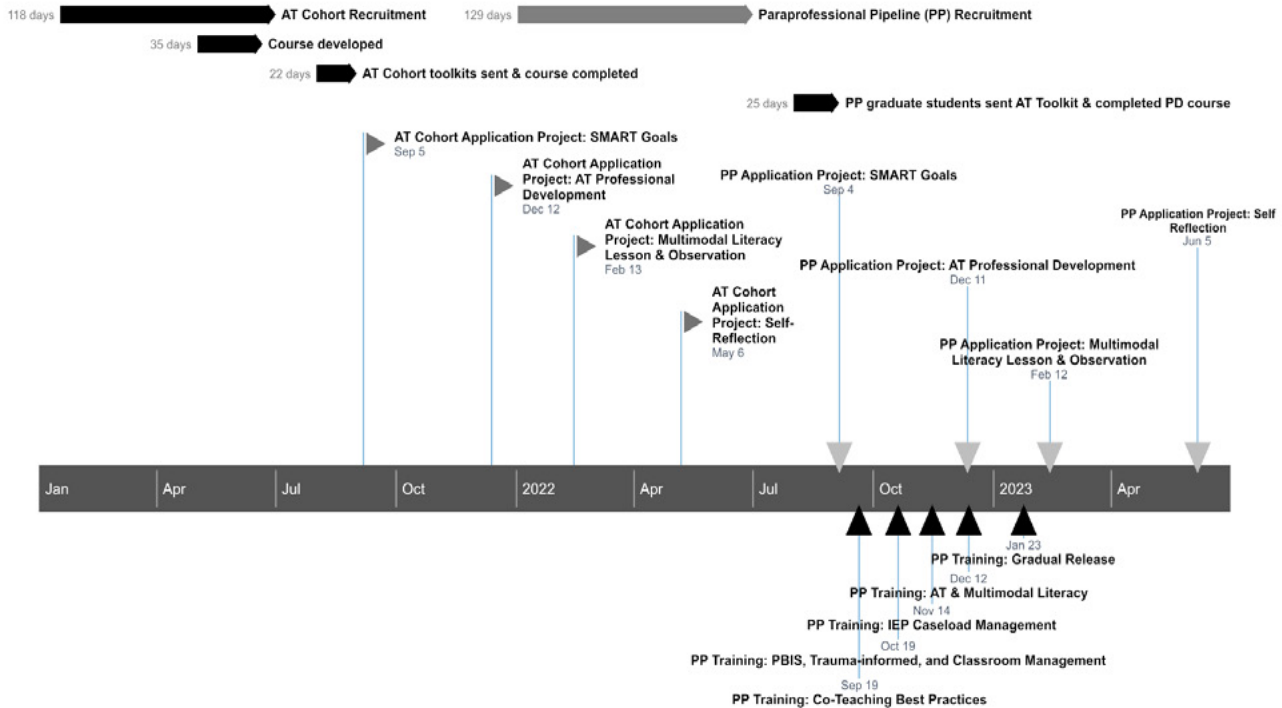
In 2020-2022, our university implemented two grant projects to address the challenges related to a special education teacher shortage and decreasing retention rates. These projects were creative responses to the issues with a focus on AT. The activities were based on research that supports the use of AT in the classroom to help create efficient teacher instructional workflows to support K-12 student accommodations for over-burdened special educators (Billingsley & Bettini, 2019). AT technology toolkits were used as recruitment tools to entice prospective special education teacher candidates in both grant funded projects. The first project was framed by research focusing on teaching AT in teacher preparation programs so educators are efficient at using it in the classroom (Edyburn, 2015). The second project focused on AT and professional development for paraprofessionals completing a teacher preparation program while working in a K-12 special education setting. Similar to the first project, the second project included AT professional development training and a technology toolkit to participants. In the second

project, training and technology kits were also provided to mentors who were working with participating paraprofessionals in their K-12 special education setting.

Project Descriptions

The first project, the *Assistive Technology Cohort (AT)*, was a cohort of graduate students in a special education program who were alternatively licensed special education teachers. In Colorado, alternatively licensed special educators are required to be enrolled in a teacher preparation program, have earned a bachelor's degree, and are considered the teacher of record. Candidates in the *AT Cohort* ($n=9$) were given a technology kit consisting of an iPad™, Apple Pencil™, and all program textbooks as e-textbooks. The technology toolkit worked as an enrollment incentive along with intensive professional development around AT use and multimodal literacy best practices.

The second project, *Paraprofessional Pipeline*, focused specifically on paraprofessionals working towards obtaining their special education teacher licensure while concurrently working as a paraprofessional. The *Paraprofessional Pipeline* included paraprofessionals and their mentor who jointly participated in five synchronous intensive trainings related to special education topics. Each participant and mentor ($n=10$) received technology kits consisting of an iPad™ and Apple Pencil™ as well as access to the asynchronous online professional development course regarding AT and multimodal literacy best practices. Intensive mentor/paraprofessional trainings were provided on the following topics: (1) Co-teaching best practices; (2) Positive Behavior Intervention Systems (PBIS), Trauma-informed instruction, and classroom management; (3) IEP case management, and progress monitoring; (4) AT in special education programs; and

FIGURE 1: Assistive Technology (AT) Cohort & Paraprofessional Pipeline Timeline

Note. This Timeline provides an overview of two grant-funded projects.

(5) Gradual release models.

The projects were funded by a state-wide partnership with the department of education and collaboration with the *Collaboration for Effective Educator Development, Accountability, and Reform* (CEEDAR) Center. In addition to hands-on technology practice and implementation, the projects were designed to enhance special education teacher training with AT in the classroom.

Project Activities

A timeline of the activities for both projects are included in Figure 1. The *AT Cohort* integrated authentic practice projects within the yearlong residency and these projects are outlined on Table 1. The *Paraprofessional Pipeline* included five synchronous trainings with their mentors.

Recruitment

In the spring and summer of 2021, recruitment for the *AT Cohort* grant began with a focus on a cohort of alternatively licensed special education teachers. The *Paraprofessional Pipeline* began in the summer of 2022 including components of the *AT Cohort* grant. In addition, the *Paraprofessional Pipeline* also included training components unique to paraprofessionals and mentors. It focused on participants who were paraprofessional special education teacher candidates entering two separate teacher preparation graduate level programs for the 2022-2023 academic year. Both *AT Cohort* graduate students and *Paraprofessional Pipeline* graduate students were recruited using relational marketing efforts.

Emails were sent to special education directors and K-12 principals in partnering school districts where previous graduate

program alumni were teaching and were designed to promote engagement from teachers, directors, and administrators. The *AT Cohort* and *Paraprofessional Pipeline* had similar implementation timelines beginning with applying for small, statewide grants in the fall semesters and notification of acceptance in early spring with most students being accepted and enrolled in programs by mid-July. In the summer preceding each project year, students were enrolled in the asynchronous AT professional development course and received technology kits to provide time to learn AT tools and try out multimodal literacy activities as a learner before the beginning of the school year.

Training Resources: AT & Multimodal Literacy

Within the professional development

TABLE 1: Assistive Technology (AT) & Multimodal Literacy Application Projects

Project Timeline	Early Fall	Fall	Winter	Spring	Late Spring
Assignment	SMART Goals: (1) Teacher as Learner and (2) K-12 Student Learning Goal, AT and/or Multimodal Literacy	AT Feature Match Project	AT Professional Development	Multimodal Literacy Lesson Plan and Video Observation	Final reflection on goal and AT projects
Resources/ Rubric	Template for creating SMART goals. Students were guided to create one goal related to their teaching and learning and one goal related to their K-12 students. They reflected on their progress towards these goals at the end of the year.	Assignment Criteria and Resources, Shared Canvas Commons entitled "AT Cohort"	Assignment Criteria and Rubric, Shared Canvas Commons entitled "AT Cohort"	Assignment Overview and Rubric, Shared Canvas Commons entitled "AT Cohort"	Pre- and Post-Survey Questions

Note: This table describes the application projects that were related to the AT and multimodal literacy learning students completed in the asynchronous AT professional development course.

TABLE 2: Assistive Technology (AT) & iOS for K-12 Student Accessibility and Multimodal Literacy Activities

	Learning and Literacy	Vision	Hearing	Physical and Motor Skills
Applications included in PD Course with Explicit Instruction	Speak Screen Dictation iBooks Google Drive Calendar Apple Apps Word Prediction	Voiceover Zoom Camera Within Camera: Screenshots	Closed Captions Accessibility alerts: Haptic, Flash, and Vibrating.	Guided Access Assistive Touch Siri
Application tasks	Multimodal Literacy Lesson Plan and Teaching Demonstration, Shared on Canvas Commons entitled "AT Cohort"	Professional Development & Feature Match Activity, Shared on Canvas Commons entitled "AT Cohort"	Professional Development & Feature Match Activity, Shared on Canvas Commons entitled "AT Cohort"	Professional Development & Feature Match Activity, Shared on Canvas Commons entitled "AT Cohort"

Note: This table provides an overview of the applications included within an online asynchronous professional development course and application tasks that were provided for students to apply them in their special education programs, See iOS Accessibility information here: <https://www.apple.com/accessibility/>

module, both cohorts learned about primary iOS accessibility categories related to AT and multimodal literacy: (1) learning and literacy, (2) vision, (3) hearing, and (4) physical and motor skills. Table 2 provides an overview of skills learned and application activities included with each.

As part of the professional development course offering, training regarding specific iOS applications native to the iPad were emphasized, noting the benefit of using applications and iOS accessibility features that can increase ease of use for K-12 students. Within the professional development course, *AT Cohort* and *Paraprofessional Pipeline* participants practiced multimodal literacy and teacher instructional workflow activities using iOS apps such as: Keynote, Pages, Numbers, Camera, and Safari. Other commonly used applications in K-12 settings were recommended for download, including Clips and Google Drive for iOS, if working in a School District using Google Applications.

Multimodal literacy is defined as texts that are multimodal, in which meaning is communicated through combinations of two or more modes that are multi-media. Modes include written language, spoken language, video, audio files, and patterns of meaning: visual, audio, gestural, tactile, and spatial (Dalton, 2014). Multimodal texts provided in these multiple modes create literacy activities that enhance, differentiate, and remediate student learning. Multimodal learning can provide even greater accessibility for K-12 students when combining the accessibility features native to iOS™ devices (Apple Devices), such as text-to-speech and annotation capabilities, for use while completing multimodal literacy activities (Coyne, et al., 2012). These accessibility features accommodate learner variability (Edyburn, 2015) while not calling negative attention to students who need accommodations.

When accessibility is effortlessly combined with learning activities students are seen as strategic learners able to use tools to support their learning (Dalton, 2014).

The AT and multimodal literacy asynchronous professional development module is estimated to take 5-10 hours to complete from start to finish. It included a pre- and post- survey, overview of AT and UDL, information related to AT supports on iOS devices, multimodal literacy learning activities, and several hands-on application activities for course participants. During the year, once students began their residencies, several AT and multimodal literacy projects were integrated into the residencies (e.g., student teaching) for participants to implement using the technology toolkits and information learned in the asynchronous AT and multimodal literacy course.

Implementation

Utilizing the new devices, the participants in both projects were trained in best practices of AT with the explicit purpose of promoting high leverage practices (HLP) and evidence-based multimodal literacy instruction practices in the classroom. Members were both learners in using the AT supports and applications on the iPad, along with developing skills to teach the new AT knowledge and skills to K-12 students being served in special education. These multimodal literacy practices guided cohort members to use AT tools for access and literacy learning enhancement with their eTextbooks utilizing supports such as text-to-speech, highlighting tools, mark-up tools, and multimedia literacy resources that could support their own reading comprehension. Additionally, the professional development module instructed on best practices in designing for diversity and learner variability using Universal Design for Learning (UDL) to *proactively* enhance K-12 student

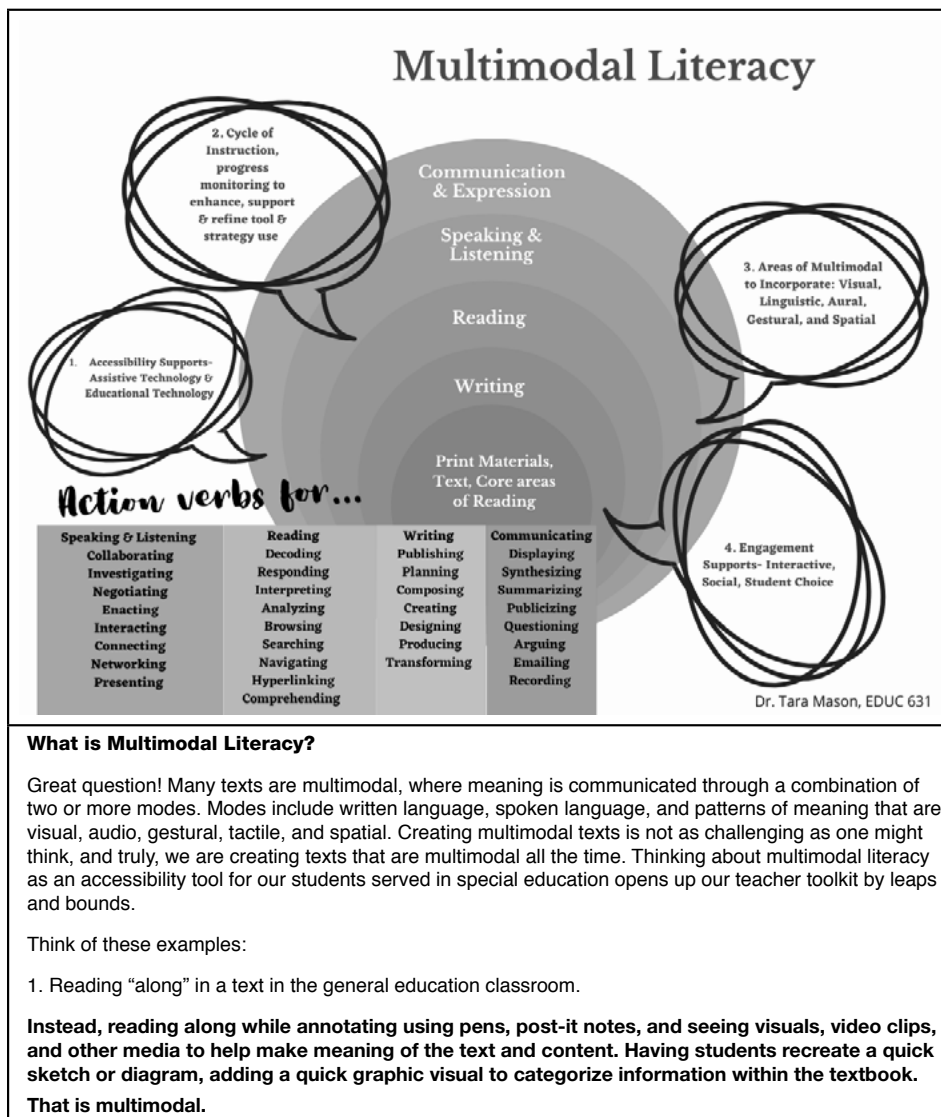
learning while simultaneously accommodating in a *reactive way* for accessibility using AT applications and supports on the iPad. The professional development module included for both projects was integrated into coursework projects and was designed to provide authentic, hands-on practice using technology as both a learner and as a teacher with K-12 students on their caseload. The *AT Cohort* also received eTextbooks for the enrolled coursework. The AT project was implemented during the 2021/2022 school year and the Paraprofessional Pipeline implemented the following year.

Within the intensive trainings provided to the *Paraprofessional Pipeline* cohort, evidence-based practices were highlighted in topics such as co-teaching, individualized education plans (IEP)/ case management, behavioral supports, literacy within the context of the science of reading, and classroom AT use. These learning partnerships served to remove the barriers to becoming a special education teacher. Research has noted that paraprofessionals have a perceived lack of skills, report an insufficient amount of training, and limited supervision and these factors are found to often prevent paraprofessionals from pursuing teaching licensure (Abbate-Vaughn et al., 2009; Mason et al., 2020). By focusing on the skills and knowledge that special educators implement to bring about positive outcomes for students, the project aimed to create a sense of self-efficacy in paraprofessionals so that they would view the field of teaching as a positive, obtainable professional goal.

Project Application Projects

An additional component of the AT training in these two projects was authentic implementation of AT learning and teaching within the preparation program coursework. Students in both projects created Specific, Measurable,

FIGURE 2: Exemplar Artifact from Course Learning Module
Excerpt: Multimodal Literacy



Achievable, Realistic, and Time-Bound (SMART) goals to guide their use of AT Toolkit devices over the year in their K-12 programs both as a learner and teacher. The four implementation projects included in this project were (1) SMART goals, (2) multimodal literacy lesson, (3) AT professional development (PD), and (4) pre- and post- AT reflection. The SMART goals created by participants typically focused on implementation of AT supports and teaching students’ strategies for using AT to support their learning. In the

multimodal literacy lesson participants created a multimodal literacy lesson plan, filmed themselves teaching the lesson and self-reflected on the lesson, and shared their video lesson snippets and reflections with peer colleagues in their courses. The multimodal literacy unit within the PD course included multiple application-based activities for participants to try out using AT features on the iOS device that would support their student’s literacy learning needs (See Figure 2, Exemplar Artifact). The AT professional development provided

an opportunity for participants to teach hypothetical colleagues about an AT topic of interest. Finally, participants reflected before the AT PD and after completing the PD course. See Table 1 for further explanation of these application projects.

Coursework Exemplars, See Figure 2, Exemplar Artifact

PARTICIPANT STORIES

Being familiar with AT, participants experienced enhanced classroom experiences for students and increased self-confidence. Participants also found that AT, when used consistently and appropriately, streamlined educational interventions and decreased the workload for them.

AJ: AT Cohort, Alternative Special Education Teacher, previous Paraprofessional

AJ is between 40-50 years of age and works at an elementary school. AJ had been in the field of special education for over a decade working as a paraprofessional. While completing the special education teacher license, AJ worked as an alternatively-licensed special education teacher in a rural elementary school with a caseload of 10-15 students with mild to moderate learning needs in categories such as Specific Learning Disabilities (SLD) in reading or math, Autism, and Attention Deficit Disorder (ADHD; IDEA, 2004). She self-identified as an intermediate technology user and believed that technology was “important” to “extremely important” and considered technology to be helpful and to benefit student learning. She consistently highlighted technology tools in all lesson observations throughout the year, including using text-to-speech to read aloud with students during small groups. AJ’s growth goals included using technology in teaching and she noted that her school is currently working towards

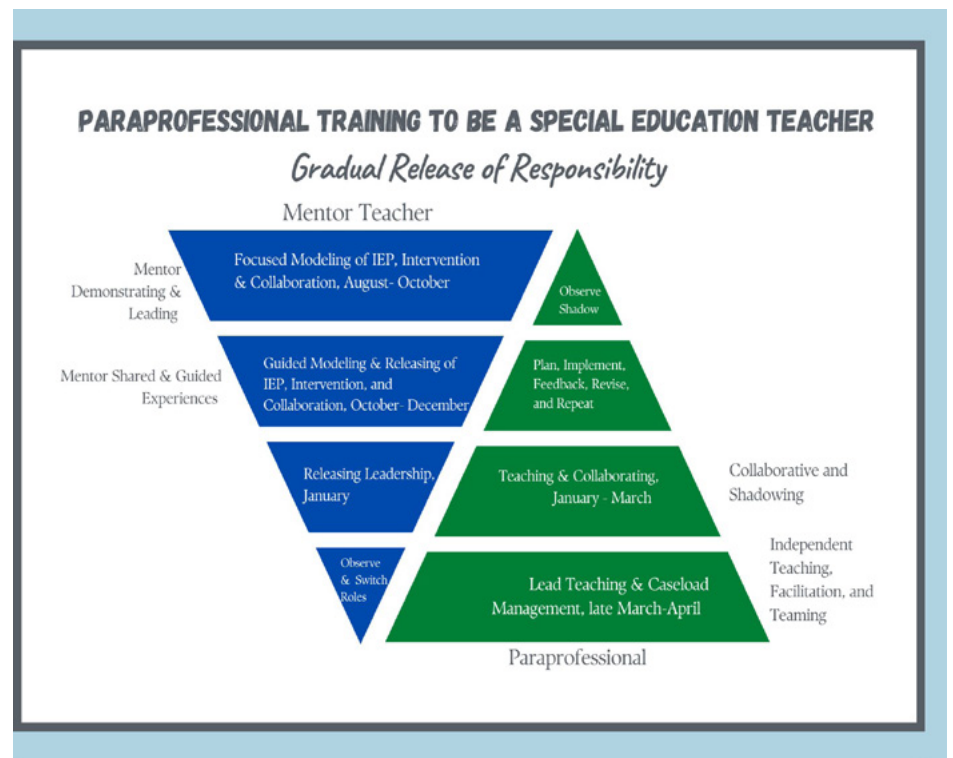
more universal access and funding technology literacy supports for students such as text-to-speech and technology tools to markup text.

MB: AT Cohort, Added Endorsement Alternative Special Education Teacher

MB was a graduate student in her early thirties working in a rural school district at the elementary level as an alternatively licensed special education teacher. She worked as a general education teacher for several years before applying to the program to obtain an added endorsement in special education. MB started as an intermediate technology user and became an advanced user after finishing the project. Additionally, she felt that she was “augmenting with technology” on SAMR and rated herself as modifying with technology after completing the project. The SAMR model stands for Substitution, Augmentation, Modification, and Redefinition using technology tools (Romrell et al., 2014). Participants learned about these different technology implementation levels and rated themselves on their level of implementation before the school year launched and at the end of the school year in May. MB felt that she had been replacing with some functional improvements for students in the beginning of the study and at the culmination of the study she felt that she was implementing technology with significant task redesign (i.e., modification on SAMR).

MB noted on the post-project survey that learning and using accessibility features on the iPad helped in her teaching students to then generalize accessibility features to their chromebooks. She talked about how much students enjoyed using speech-to-text and text-to-speech. As a result of the *AT Cohort* training, MB created multimodal interactive notebooks with a small group of 5th graders. Near the end of the year, she had a new student join her caseload. This student

FIGURE 3: Exemplar Artifact, Proposed Gradual Release Model for Mentor and Paraprofessional



Note: This figure presents two triangles side by side that show a gradual progression of mentor leadership responsibilities and paraprofessional student teaching responsibilities and their shift over time to less leading by the mentor.

was added to 5th grade due to age but had never attended school before that year. To help the student access general education, MB taught the student to use text-to-speech on websites enabling the student to participate in many classroom literacy activities.

PT: Paraprofessional Pipeline, Paraprofessional

PT was with the *Paraprofessional Pipeline* project, a graduate student in her early thirties working in a rural school district at the elementary level as a paraprofessional. She had worked as a paraprofessional for several years before applying to a program to obtain a special education teaching license. PT wanted to participate in the project citing the “need to become proficient with assistive technology before transitioning to being a special educator.”

PT’s mentor was interested in learning

more about AT, specifically strategies to support students with autism. The mentor had been a special educator for 30 years in middle and elementary schools in mostly rural communities. PT and her mentor had worked together for nine years and had a good understanding of each other’s work expectations. PT was encouraged by her mentor to take the next step and obtain her special education licensure.

Both the mentor and PT found the trainings to provide useful information for special educators. They both reported receiving useful information about gradual release and looked forward to implementing ideas presented through the trainings. The mentor appreciated the AT module and the ability to use the information quickly in the classroom to support K-12 students. PT reported the AT module was extremely useful and would guide her master’s Capstone

paper. Both the mentor and PT found the process to be helpful ways to launch into mentoring conversations about the special education field. Similar to the previous *AT Cohort* examples, PT and her mentor reported authentic implementation and enhanced technology use as a result of learning about AT tools and multimodal literacy strategies learned.

CONCLUSION

The need for special education teachers is not an issue that will be solved easily so efforts must include creative problem solving in the recruitment and retention. Teacher shortages can have a complicated impact in small rural districts where filling vacancies can be a challenge with factors such as remote location, lack of resources, and high caseloads being frequently stated as reasons that exacerbate the needs for these rural school districts (Hollo et al., 2019; Sawchuk, 2018; Viadero, 2018). When looking at recruitment and retention of special educators, factors such as workload and working conditions must be considered. In a comprehensive review of the literature, conducted by Billingsley and Bettini (2019), the most substantial factor for attrition was working conditions. Teachers stated they needed more time to work with students, and the demands of the job are often factors in why special educators leave current positions and the teaching profession entirely. If districts can find ways to support special educators by creating efficient workloads, more special educators may be willing to stay. In a synthesis of research regarding special education teacher perceptions and burnout in the field from 1979 through 2013, Brunsting et al. (2014) note, “While teacher supply is still an important responsibility, they argue the focal question is no longer how do we recruit more teachers but rather how can we best train and support our teachers?”

(p. 682). They explain that teacher burnout is more complex than just special education teachers feeling unsatisfied in their roles resulting in them leaving the field. It is a multidimensional issue of special education teachers feeling that they are overloaded, cannot be successful, feeling exhausted and overwhelmed, and in extreme cases, even reporting physical illness, and depression due to their excessive workload.

Along with creating efficient workloads, finding ways to recruit candidates has long been a challenge in the education field. With the number of people entering the teaching field on the decline, it has proven to be a challenge for education in general, more so for the field of special education. One factor that has been successful in retaining prospective special education professionals is prior experience working with people with disabilities (Hobson, 2022; Mamlin & Diliberto, 2020; Reeves et al., 2021; Scott & Alexander, 2019). Recruiting from within the school system, such as paraprofessionals or general education teachers adding their endorsement in special education, are key to the recruitment of prospective special educators who may feel more capable in their new role. Additionally, relational recruitment efforts such as reaching out to groups who are likely to be interested in a career as a special educator are effective methods for encouraging people to pursue a special education license (Hobson, 2022; Mamlin & Diliberto, 2020).

Recruitment strategies that IHE’s employ are varied and wide. Some states have used strategies such as gaining a special education endorsement by completing the accompanying exam (Hollo et al., 2019) while other states offer alternative pathways where new teachers are enrolled in a preparation program while working as a teacher. The two projects described here aimed to work with districts and schools to

provide resources to support and encourage retention of special educators. These projects included innovative use of online professional development and synchronous training of mentors that added value to their impact. The participants were well-equipped to go into the classroom using AT; they were more confident and able to encourage independence through technology for K-12 students with disabilities.

Next Steps

These two projects, with recruitment incentives and training grants, prepared participants to teach in special education programs with an enhanced understanding of AT and ideals to help with workload efficiency. These projects also provided a community of practice with shared language, authentic practice, and coursework integration that resulted in increased teacher confidence in the classroom. These small changes and accommodations for potential candidates can make a significant impact for recruiting and retaining special education teachers.

Schools and IHE’s must be more flexible, understanding, and supportive moving forward if any progress is to be made on addressing the special education teacher shortage. By focusing on the needs specific to teacher preparation pathways (i.e., paraprofessional pipelines) and alternative special educators, and also integrating authentic use and implementation of AT to help with increased K-12 student independence, recruiting and retaining special educators to fill high need vacancies may become less challenging. Moving forward, IHEs must continue to explore innovative ideas that include collaboration and intentional technology-enhanced learning for potential candidates with K-12 students at the center of the work. This kind of innovation can open many doors for students and special educators alike.

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