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There's an old cliché: "It takes a village to raise a child." The adage brings to mind a simpler world, perhaps one where children were raised by local families, churches, and neighborhood schools. This is a powerful narrative, and the invocation of simpler, calmer times resonates in commerce and politics. Of course, this narrative leaves unexamined important violations of equity across race, class, gender, and ability. And the world these impulses reach toward is simply not relevant to the school life of the vast majority of students. In our hypermodern world, school- and university-based teacher educators need to consider how to combine their efforts with each other and with outside groups.

The work of Emile Durkheim is instructive here. Durkheim (1984) contrasted two means for individuals and groups to work together. The first was called mechanical solidarity, a repressive organizational form in which all individuals and social groups move in lock-step fashion toward a singular goal. He proposed that, against this mechanical solidarity, the modern division of labor is better understood as organic. Organic solidarity relies on mutual need, bringing individuals from a variety of social roles into contact and partnership. He chose the term "organic" to emphasize that these various actors move at different rates, follow differing immediate goals, and form different types of social organs—but at a systemic level, they work in concert. These organic agents and agencies must work together to form new bonds for their mutual benefit, as well as for the benefit of others.

Durkheim's mechanical and organic solidarity is worth considering in relation to school partnerships. Schools serve as one of the most important social groupings in our state and nation. And, indeed, schools have long been pressured to take on ever more stubborn social problems. Durkheim's organic solidarity theory suggests that teachers and

teacher educators should consider more closely how schools can best work with other organizations, as well as how to create partnerships with a variety of institutions to tackle thorny problems.

For this issue, we asked contributors to consider and report on partnerships of all kinds that benefit teacher education. Our call for submissions asked, among other questions: What are some lessons learned in teacher education partnerships? How are our teacher education partnerships recruiting and preparing teacher candidates for the PK-12 students, classrooms, and school environments they will inherit? How do our school-university partnerships address the changing demographics and individual characteristics of PK-12 learners in our schools? What are some best practices for the development of distant partnerships? The writers in this issue rose to this call and report a variety of partnerships.

The first two articles in this issue examine how traditional teacher education programs prepare teachers for the special education classroom. Marquis Grant argues that despite well-researched gap between the education and preparation of special education teachers, at four universities the majority of teacher educators and teachers found their preparation programs adequate. Because satisfaction with initial preparation has been shown to correlate with staying in the classroom, Marquis argues this link is in need of further analysis.

Next, Rebecca Hines, Annette Romualdo, and Eileen Glavey, present one such analysis. Their work revolves around the redesign of the exceptional education in Florida. They describe an innovative partnership between the university and a local district. They find that by shifting to a community-embedded program that aligned coursework with ongoing field-experiences and on-the-job-internships, this program was able to increase enrollment and better prepare teachers. Importantly, their work includes a model theory of program change that can help guide other organizations in redesigning themselves and partnering with other institutions.

Shifting gears, Katsia Cadeau, Jamie Leeder, and Patricia Bloodworth tackled the problem of the high number of elementary education students who initially fail the relevant professional exams to enter the field. Their case study examined how two school districts in south Florida partnered to ensure teacher candidates gain the content knowledge necessary to pass these licensure tests, an important goal given the teacher shortage across the nation and state. Through this partnership, retention rates were improved as a local

university developed an online summer certification program alongside the implementation of district-led courses.

Finally, Sarah Cramer and Mercedes Tichenor examine how schools can partner with agricultural organizations to implement school-based gardens. Although these gardens have received some attention in the scholarly literature, traditional teacher preparation programs have not implemented garden-based learning in their curriculum. Cramer and Tichenor's case study examines preservice teacher perspectives and experiences with garden-based learning. Importantly, the authors point to the variety of outside groups with which schools can partner to promote garden-based learning.

Across these articles, teacher educators are prompted to consider the organic connections made between institutions. Though university-based teacher educators, school- and district-based teacher educators, and teachers may have differing cultures and ways of working, this issue speaks to possibilities for the variety of educational actors to work together to better educate students.

Preparing Regular Education Teachers Candidates to Work with Students with Disabilities

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Abstract

Historically, the education of students with disabilities has not been emphasized in teacher preparation programs for regular education teachers. This gap in teacher preparation has resulted in teacher candidates being unprepared for the realities of the classroom. With 63% of students with disabilities spending 80% or more of their day in general education with their non-disabled peers, there has emerged a greater need for teacher candidates who can address the needs of students with and without disabilities in their classrooms. Although an examination of teacher candidate satisfaction surveys from four universities indicated that most candidates that they were prepared to work with students with disabilities, research has indicated results to the contrary.

Preparing Teacher Candidates

Teacher education programs have yet to address the need for more exposure to special education pedagogy despite the growing numbers of students identified with a disability in public schools (Leko, Alzahrani & Handy, 2019). According to the National Center for Education Statistics (2019), there are over 7 million children with disabilities in school systems across the United States. Sixty-three percent receive their services in a regular education setting. As it is becoming more common for the regular education classroom to be the least restrictive environment for students with disabilities, teachers are facing new challenges that have created challenges in the learning environment (Gibson, 2012). "General educators, for many reasons (i.e., lack of experience, course work, professional development), were generally not equipped to meet the needs of students with disabilities" (Burks-Keely & Brown, 2014, p. 150). Schools have assumed many of the primary duties that once belonged to teacher preparation programs, providing training to fill in the skills gaps of preservice teachers (Korthagen, 2012).

Several changes to government legislation will likely have a significant impact on teacher preparation and special education programs. Lack of funding will likely deepen the teacher shortage crisis that is already plaguing the field of education (NCLD, 2018). The PROSPER Act will defund Title II, which provides funding to teacher preparation programs, including the Teacher Quality Partnership Grants as well as TEACH grants which support teacher candidates preparing for high need fields such as special education and high needs schools that are typically difficult to staff. This may place even more responsibility on local school districts to prepare all teachers to work with students with disabilities.

Teacher Education Reform

While the reformation of teacher education programs has ongoing for more than four decades, reform agendas have given little focus to identifying best practices when preparing preservice teachers to work with children with disabilities (Blanton, Pugach, Boveda, 2018). While it could plausibly be helpful to understand the pedagogical gaps in current teacher education programs, this makes sense only if there was a better understanding of how teacher preparation programs were constructed (Pugach & Blanton, 2011). However, there has been limited scholarship that examines teacher education, particularly the thoroughness of the programs or alignment with the expectations of current school structures. This makes a comparative analysis of programs for regular education and

teacher education difficult, underscoring the continued challenges faced by candidates as they enter the classroom as novices.

Examination of current research theory and best practice suggest that teacher education programs could provide a greater means to support the development of teachers' ability to acknowledge how their attitudes and beliefs about special education can impact their relationships with their students. Teachers' negative perceptions potentially cause more students with disabilities to feel isolated, question their own learning potential and engage in problematic behaviors that impact their learning or that of others. Furthermore, if teachers see special education as a "pitstop" for children who are not meeting academic standards, this could cause more students than necessary to be referred for special education evaluation. A restructuring of teacher education refers to intentional behaviors that promote equity and equality while advocating against exclusionary practices (California State University, 2018) that may result from biases held by teacher education candidates. Importantly, more research is needed in order to address the limited amount of scholarship that focuses specifically on general teacher preparation as it pertains to special education.

Preservice Preparation

Now the focus has shifted to how teacher preparation programs can more effectively prepare candidates to teach students who do not fall within the "traditional" ideology of the learner. "No longer must the children fit in the classroom, but the school and the class must fit the children" (Verstichele, Van Acker, Van Buynder, Van de Putte, & Tijtgat, 2015, p. 3). Critics of traditional teacher education programs believe that these programs do not adequately prepare prospective teachers to effectively teach (Burks-Keely & Brown, 2014). Pre-service teachers need to be aware of instructional practices and methodologies that are more responsive and beneficial to all children. In their scholarship on inclusion, Braunsteiner and Mariano-Lapidus (2014) emphasize model programs similar to one hosted by University of Cologne in Germany, where teacher candidates were allowed to work collaboratively with university-sponsored schools to develop lessons plans and engage in classroom instruction as a way to expose candidates to the realistic experiences in diverse classrooms. Pugach and Blanton's (2011) position is that "Beyond the generally agreed-on belief that collaboration between general and special education is a good direction in which to take teacher education, what is really going on in the name of these multiple collaborative pre-service education efforts does not appear to be well understood" (p. 181). Teacher

education programs could offer curriculum that would allow pre-service teachers to develop more in-depth understandings of the core principles that are involved in the educating of children with disabilities before they transition from students to practitioners. However, most of these preparation programs require students to take only one course in special education (McNamee, 2016) that is so fundamental that it could not possibly inform a regular education teacher candidate of best practices when working with students with disabilities.

Because school reform measures have transformed the former one-size-fits-all classroom very quickly over the past few decades, teacher education programs must now revise their curriculum to include more opportunities for pre-service teachers to become more student-responsive through multi-levels of personal and professional experiences (Peterson-Ahmad, Hovey, & Peak, 2018). Teacher education programs have received criticism for not preparing candidates effectively for the realities of working with diverse student populations, implementing learner-responsive teaching practices, or identifying resources that are relevant to all learners (Leko, Alzahrani & Handy, 2019). Pre-service teacher education is characterized as being weak, citing the lack of substance aside from the student teaching component. However, teacher candidates felt that their program provided the appropriate preparation to all students, but more diverse field experiences are needed in order to prepare them for the realities of a today's classroom (Ricci & Fingon, 2018).

Shaping Attitudes and Beliefs

One critical factor in the education of children is the attitude and beliefs of the teacher. Through research and scholarship there have been findings that suggest that pre-service teachers make decisions and draw conclusions about students based largely on external factors. Pre-service teachers must acknowledge their own attitudes and beliefs when it comes to students with disabilities (Ashton & Arlington, 2019). In fact, teachers' attitude may be the single most influential factor when it comes to the success of students with disabilities in inclusion (Varcoe & Boyle, 2013). The more positive and the more optimistic the teacher, the better the outcomes of the students.

Teachers who have limited exposure to children with disabilities or whose teacher education coursework included few classes on disability education may see inclusion as a burden and resent the presence of children with special needs in their classrooms (Chimhenga, 2016). Furthermore, the more severe the disability of a child, the less likely

the teacher will have a positive attitude towards inclusion of the student in the regular education classroom (Vaz, Wilson, Falkmer et al., 2015). The teacher's attitude may be based on her own concerns about inadequate support and lack of expertise. Many teachers who completed courses in special education felt that they still lacked the ability to meet the needs of a diverse student body (Richards, 2010).

The classroom teacher must see inclusion as a positive practice if students with disabilities are to be successful in the general education classroom (Mangope, Mannathoko & Kuyini, 2013). According to a recent study, 40% of pre-service teachers did not view inclusion favorably (McNamee, 2016). Even when pre-service teachers recognize the benefits of inclusion, they often feel unprepared and experience anxiety about teaching students with disabilities in a regular education classroom (Smother, 2016). As Grant & Jones-Goods (2016) pointed out, "Whether or not a teacher supports the idea of inclusion into mainstream classrooms can determine how well the teacher implements practices that will promote the learning of all students" (p. 67). Plainly stated, regular education teachers must develop positive attitudes and maintain high expectations for all students and in working with students with disabilities.

Preservice Teaching Experiences

Teacher education programs have long been regarded as ineffective in the way that they prepare preservice teachers for the classroom. Research suggests that pre-service teachers have not been adequately prepared to assume their roles in the special education classroom. In fact, over 50% of teachers surveyed indicated that they felt that their university coursework did not provide the types of real-world experiences that were necessary to support their transition into the classroom in terms of behavior management, diversity, professional collaboration and isolation. Some researchers have also cited a breakdown between preservice and in-service experiences as one of the reasons for high turnover, particularly in the field of special education. Colleges and universities may, in fact, must assume more of the burden of instilling pedagogy along with providing relevant real-world practicums if attrition rates in special education are expected to decrease.

Experimental Learning

"Several researchers have suggested that cases representing a variety of classroom conditions be included in teacher education curricula in order to better prepare students for teaching" (Demiraslan Cevik, 2011, p. 2). Korthagen (2012) concluded that learning from

experience is a needed process for teacher education programs to benefit teacher candidates. Exploring profession through case study has historically been used in business, law, medicine and, in recent years, in teacher education programs (Gallagher, Benson & Potvin, 2016). A case study is described as "the vehicle by which a chunk of reality is brought into the classroom to be worked over by the class and the instructor…keeping the class discussion grounded upon some of the stubborn facts that must be faced in real life situations" (Eberly Center, 2008, para. 2). Case studies in teacher preparation programs that focus on issues related to diversity, along with field and coursework, has the potential to increase pre-service teachers' ability to teach students with whom they few, if any, commonalities.

Evidence collected from research has shown a positive correlation between the use of case study analysis and supporting "preservice teachers' understanding of complex classroom situations, their ability to analyze these situations from multiple perspectives, their competence in using evidence to support their interpretations and decisions, and their skills to reflect on what they learned from cases" (Demiraslan Cevik, 2011, p. 1). For a teacher, particularly a teacher who has not had experiences with children with disabilities, to effectively address the needs of all students in the classroom, the teacher must be able to acknowledge her own biases and lack of understanding and reflect on how they may impact her ability to create and maintain successful teaching and learning experiences.

One of the main reasons case study analysis is being included in teacher education programs is to support preservice teachers as they reflect on their own practices and understandings (Malkani & Allen, 2005). According to Dunn & Brooks (2005), using case studies allows preservice teachers to explore multiple scenarios and apply theory to practice using real world examples; most importantly, preservice teachers strengthen their ability to solve problems, analyze situations appropriately, make decisions in the face of adversity and effectively identify any grey areas that may impact the teaching and learning process.

This study was a secondary analysis of data collected from Teacher Candidate Satisfaction Survey results from four universities. According to the U.S. Department of Education (2018), retention is higher for beginning teachers who expressed satisfaction with their preparation programs.

Grand Valley State Teacher Candidate Survey

Teacher candidate survey responses were collected from 275 students (N = 275) enrolled in select preparation programs at Grand Valley State during the 2016-2017 term. Respondents were required to respond to all the survey questions regarding their preparation in specific areas. Relating to their preparation to word with students with diverse learning needs and abilities (i.e., English language learners, students with disabilities), 88.65% of teacher candidates "Strongly Agree" or "Somewhat Agree" that they were prepared to meet the needs of diverse learners. Based on survey responses, most of the students agreed that they were prepared to meet the needs of students with disabilities.

Ball State University Teacher College Exit Survey

Teacher candidates were asked to complete the teacher preparation program exist survey, rating their abilities in categories aligned to the INTASC Standards. Responses to the questions in each category were rated as strongly agreed, agreed, disagreed, or strongly disagreed. Forty percent of the teacher candidates surveyed strongly agreed or agreed that the teacher preparation program prepared them to be effective teachers. Teacher candidates (n=263) ranked their ability to work with students with disabilities, with 124 agreeing and 99 strongly agreeing that they have the necessary skills to work with students with special needs; the mean score of 3.21 was the second lowest ranking in the category.

Rowan University Teacher Education Exit Survey

In the fall of 2017, teacher candidates at Rowan University were asked to complete an exit survey. When asked about how well coursework helped them to develop an understanding of how to accommodate differences in student learning and meet the needs of all learners, over 60% of survey respondents felt that the coursework as very good, while approximately 57% indicated that the coursework was good. Rating how well their coursework helped them develop the ability to address the multiple dimensions of diversity (social class, gender, race, ethnicity, language, sexual orientation, age and special needs) in helping students learn, 55% gave a very good rating while approximately 67% rated the coursework good. In rating their field experiences in developing their ability to address the multiple dimensions of diversity, including working with students who have special needs), roughly 55% felt their field experience was very good and 65% responded that the experience was good. Students who rated poor or very poor in each of the focus categories were less than 10%.

Ole Miss School of Education Field Experience Survey

177 (97.3%) clinical instructors and 191 (100%) of university clinical supervisors strongly agreed that teacher candidates supported learning and development for all students, including those with exceptionalities and diverse backgrounds. 95% of teacher candidates rated their experience in their placement school as being positive and supportive.

Discussion & Conclusions

The American Psychological Association (2014) issued a report with suggestions for how teacher preparation programs can identify teacher candidates, offer substantive feedback for teacher candidates and create partnerships with schools and school districts to increase the success of the teacher preparation experience. While the report does issue recommendations for improvement, it does not include statistical findings about the current state of teacher programs to include surveys from new teachers, teacher candidates and school administrators. Results from the surveys used for this study do not correlate with findings from research that suggest

That teacher candidates are not being properly prepared for the realities of today's classrooms. This could plausibly be a matter of perception in that teacher candidates see themselves without the benefit of professional experience. On the other hand, researchers who are experienced and knowledgeable of current teaching needs have a different perspective of the classroom and therefore may have greater insight into a match between teacher candidate skills and the requirements for in-service teaching practices. In order to determine whether teacher candidate feelings about their preparation programs changed after their first year of teaching, further research may need to be conducted.

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Improving Teacher Preparation through Community Partnerships: Change Model Theory

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Abstract

In 2017, the Exceptional Education Department at a large urban university in Florida redesigned and relaunched the undergraduate teacher preparation program in Exceptional Student Education after a 6-year hiatus. In an effort to address the existing statewide shortages, as well as the local attrition rates of teachers in special education, the university established a formal partnership with a small local district to pilot a new community-embedded program. Shifting from the traditional educator preparation model to one that was community-embedded, providing ongoing field-based experiences, and on-the-job internships tightly linked to academic coursework was key. This article describes the relaunch of the exceptional education program using Kotter's change model theory as the

framework for developing the new community-embedded program with a professional

development school (PDS). It also highlights the Florida Educator Accomplished Practices

(FEAPs) that guided the experiential learning process used in this program, along with the

collaborative school-university approach to prepare and retain teacher candidates for the

PK-12 students, classrooms, and school environments they will inherit. Key components of

the model in use at the university, along with initial program outcomes and student

feedback are reported.

Introduction

Teacher turnover is costing the education system over $8 billion annually (Learning Policy Institute, 2017). The American Association of Colleges of Teacher Education (AACTE) (2018) reports that almost half of college graduates who become teachers leave the profession within a few years, and 9.5% of education graduates left their role as classroom teachers before they even completed their first year of teaching (Rumschlag, 2017). Approximately 90% of the nationwide annual demand for teachers is created when teachers leave the profession (Carver-Thomas & Darling-Hammond, 2017). This is especially concerning in special education, where highly qualified teachers who persist in the field have the greatest impact on student learning, yet turnover rates are twice as high as general education teachers, at over 14% annually (Carver-Thomas & Darling-Hammond, 2017).

The U.S. Department of Education 40th Annual Report to Congress for IDEA (2018) identified a deficit of over 21,000 certified special education teachers to serve the more than six million students under IDEA in the 2016-2017 school year. While a variety of factors contribute to teacher shortages, including low enrollment in teacher preparation programs, the most important driving factor of teacher shortages is high teacher attrition (Sutcher, Darling-Hammond, & Carver-Thomas, 2019). "Reducing teacher attrition would make the greatest impact on teacher shortages than any other intervention" (Sutcher et al., 2019, p. 15). High teacher attrition negatively impacts school stability, class sizes, course offerings, student learning, and the labor market (DeAngelis & Presley, 2011; Carver-Thomas & Darling-Hammond, 2017).

The shortage of special education teachers in the state of Florida mirrors nationwide trends. The Florida Department of Education (FLDOE) (2019) continues to identify Exceptional Student Education (ESE) as a critical shortage area for the 2019-2020 school year, and declining enrollment in Florida's teacher preparation programs has mirrored nationwide trends which, despite a slight increase beginning in 2016, remains historically low, compounding the gap in teacher supply and demand (Sutcher et al., 2019). Exceptional Education is ranked 2nd among certification areas projected to have the greatest number of vacancies for the 2019-2020 school year (FLDOE, 2019) highlighting the need to focus on teacher recruitment and retention. As such, school-university partnerships have become a key target in recent years, as stakeholders seek to find comprehensive and sustainable solutions to special education teacher recruitment and retention deficits.

School-University partnerships to address teacher attrition

Partnerships have been established between universities and schools to address the gap between theory and practice in teacher preparation (Halvorsen, 2014a), and these offer one way address the attrition problem. These partnerships are built on the assumption that all partners are stakeholders working together to improve education at all levels (Sandholtz, 2002). Each partner has distinct needs, resources, and contributions to make to preservice teachers′ professional development (Smith, 2016). One key to successful school-university partnerships is recruiting and preparing candidates to fit the specific needs of the partner schools (Guha, Hyler, & Darling-Hammond, 2017). School-University partnerships "allow school districts to play a more direct and productive role in training their future workforce, allowing them to fill vacancies with teachers who are better prepared, more diverse, and more likely to stay in place over time" (Guha et al., 2017). As such, colleges of education are responding by using teacher education partnerships to recruit and prepare teacher candidates for the PK-12 students, classrooms, and school environments they will inherit.

Teacher preparation program redesign

In the Fall of 2017, a large Florida university launched a newly redesigned undergraduate exceptional education program that included a formalized Memorandum of Understanding (MOU) (see Figure 1) with a small partner school district and that pledged to prepare prospective educators through authentic, immersive experiences in inclusive settings. Prior to the 2017 school year, enrollment in the program had dwindled to 0 after faculty were forced to make the tough decision to suspend the program years earlier due to a combination of factors including, unstable enrollment, faculty workload, and budgetary constraints. Based on the need of local school districts and across the state of Florida, faculty voted to reinstate and relaunch the exceptional education program in the Spring of 2017.

With the unique opportunity to rebuild from scratch, contemporary methods of teacher preparation were adopted as standard features of the program, and the resulting community- embedded approach used has begun to address the teacher shortage in exceptional education with the partnering district. Over the span of only one year, from the time of the decision to reinstate the program in 2017 to the beginning of the second year in Fall of 2018, the program has grown from 11 students to 54, or a rate of growth of 390 percent. At a time when other education program enrollments are declining, and in a field

known for its shortages nationwide, the exceptional education program has continued to grow, and in Fall 2019 reported 84 students officially seeking the exceptional education major. Program evaluation data shows that the community-embedded approach at partner schools, teaching residencies, and coaching model have been viewed by students as key elements to success in the program.

A change model approach to building a successful partnership

The partnership planning began with discussion of a change model approach used in business, Kotter's 8 step change model (Figure 2.), which the authors previously used to design other university programs (Hines, Myer & Donehower, 2016). Stakeholders crafted a blueprint for an immersive preservice educator experience to address shortages in the field, under-preparedness in the Florida Educator Accomplished Practices (FEAPs) among novice teachers, and widespread burnout within the profession. Specific elements of the change model as they relate to the specific university-school partnership are outlined in this article.

Step 1: Establishing urgency

Establishing urgency is an integral catalyst to inaugurating institutional change. Within the field of education, the need to prepare effective personnel cannot be greater emphasized – there is an absolute urgency for teacher preparation programs to graduate educators who are prepared for 21st century needs.

One key variable driving turnover is the kind of preparation teachers have had prior to entry into the profession, including the quality of field experiences during preparation, that helps them learn to teach effectively (Carver-Thomas & Darling-Hammond, 2017). Teachers often report leaving the field due to feeling underprepared for the challenges they experience in the classroom, in addition to not feeling supported while in the field (Headden, 2014). New and experienced teachers cite field experience as the most highly influential element of their teacher preparation (Darling-Hammond, 2006; Moulding, Stewart, & Dunmeyer, 2014; Ronfeldt, 2012), yet many teacher preparation programs lack incorporation of authentic, supervised field experiences in schools with coursework (AACTE, 2018; Darling-Hammond, 2010). Further, many supervising teachers are themselves ill-equipped in the classroom – unable to model quality, evidence-based practice. Knowledge, skills, and dispositions necessary to be successful in the classroom (Darling-Hammond, 2003) are often not modeled within the confines of traditional teacher preparation program field placements.

Creating a sense of urgency in the two partnering agencies was a simple matter of reviewing data on teacher turnover in the district's seven small schools (nearly 60 percent), considering key publications recommending new models of teacher preparation, and building the program quickly to accommodate the university scheduling deadlines.   Insert text.

Step 2: Creating a strong coalition

The university team for the partnership included a lead faculty member, the clinical experiences coordinator, and three doctoral students, while the partnering district was represented by the education coordinator and superintendent. All program area faculty in exceptional education at the university were invited to provide input, and programmatic decisions were approved by the department chair and dean of the college. Because changes included changing course delivery methods, teaching classes on-site at partner schools, creating teaching residencies, and other significant changes, buy-in from college administrators was key to the success of the redesign.

Step 3: Creating a vision

With urgency for change established and leaders in place, the next step in promoting was to create a blueprint for effective change. The goal of stakeholders within this partnership was to recruit, develop, and retain highly effective teachers committed to inclusive learning, collaboration, and continuous professional improvement. With this in mind, the university formally entered into a Professional Development School (PDS) agreement with the largest of the partnering agency's schools, a local charter school with 50 percent students with disabilities whose mission is to inclusively serve students of all abilities. The school has demonstrated success in inclusion and raising student achievement, and in 2016 received a personal memo from the governor for being one of the top ten schools in reading gains out of more than 3000 Florida schools.

Halvorsen (2014b) found four different resources critical to the development of partnerships: (1) intentionality, (2) unpredictability, (3) flexibility, and (4) vitality. These resources were at the forefront of the primary partnership used in piloting the community-embedded approach. Citing a desire to reverse high turnover and low retention of novice teachers at partner schools, the piloted program emphasized immersive experiences for candidates through which in-service mentor teachers model excellence within coteach

environments. All preservice teachers were provided meaningful, authentic field experiences which promoted accessible learning in fully inclusive settings.

Examples of quality implementation of evidence-based practices provided by mentor teachers is a key component of the partnership and ensure growth of preservice teacher learning outcomes. Specifically, by consciously placing preservice teachers in inclusive environments with highly effective mentor teachers, graduates of the program can effectively serve students with disabilities who demonstrate high-intensity needs. The partnership included strong mentor teachers and differential coaching to support the development and efficacy of preservice teacher clinical practice, evidence-based competencies, and interdisciplinary collaboration for stakeholders serving students with disabilities in high-need schools. Over the course of the year, activities and opportunities spread to other schools throughout the community and local districts.

The blueprint for change centered around an immersive experience which provided rigorous learning opportunities using highly-collaborative 21stcentury learning concepts for elementary students, while also providing a university research center to develop and enhance best practices in inclusive education. Specifically, preservice educators and partner schools were committed to a model which promoted evidence-based clinical practice; increased opportunity to acquire practical skills and confidence in FEAPs; development of enhanced metacognitive growth; mutually beneficial programming; and empowerment of preservice teachers. Preservice educator experience within this authentic model helped to build confidence and expertise necessary to successfully transition into teaching, post-graduation.

Another key component of the blueprint for change was intentionally placed doctoral research assistants, all experienced special educators, within partner schools. This placement was to ensure fidelity of implementation of reproducible processes across sites. The primary roles of doctoral student liaisons included facilitating teacher candidate growth within the FEAPs through intensive differentiated coaching methods, centered around personalized response to preservice educator and partner-school needs. By creating structures within model classrooms to promote learning of best-practices, preservice educators were provided immediate feedback by both supervising teachers and university liaisons – high-quality, inclusive demonstration classrooms were critical to providing examples of best practice within the residency model. Structures of success established by

doctoral student liaisons within partner schools included customizable service-learning models, peer-to-peer mentorship among candidates, differentiated coaching within FEAPs, continual communication with partner supervising teachers and administrators, supervision of undergraduate facilitation of after-school reading, technology, and social-support clubs, assistance with writing IEPs, classroom makeovers, and supervision of undergraduate facilitation of partner school behavior labs. Above all, the overarching role of doctoral student liaisons remained to provide independent and immediate response to partner school needs.

Again, a key component of the partnership was the present teacher-in-residency model, which centers around intensive time in excellent coteach environments, paired with synchronous differentiated coaching of preservice educators. Blazar and Kraft (2015) maintain variability in novice teacher efficacy warrants implementation of evidence-based coaching models; "a variety of theoretical and empirical evidence points to teacher coaching as a high-quality professional development opportunity that can improve teachers' practices and student achievement" (Kraft, Blazar, & Hogan, 2018). Coaches, within the teacher-in-residency model, are effective – as, purpose of the coaching experience is understood, the coach is well-prepared, coach knowledge of the content and skill is strong, coach-teacher interactions are positive, content learned through the coaching process is immediately applied, real-time feedback is given and received, and administrative support is clear (Kise, 2017).

Embedded doctoral assistants acting as coaches became resources, encouragers, collegial mentors and experts within the content; meeting the immediate needs of preservice teachers. Rejecting traditional teacher preparation models, which provide intermittent and long-spaced drop-in observations – the present model allows doctoral assistants to provide teacher residents ongoing and immediate feedback on FEAP development; guidance for goal-setting; facilitating the preservice teacher's creative process; and modeling expertise of research-based practices within the content and field (Kise, 2017; Stover et al., 2011). With time-intensive mentor- mentee relationships, doctoral assistants were able to ascertain preservice teacher strengths and present levels of success, while responding appropriately to meet the needs of the individual teacher candidates. With multiple doctoral research assistants on-site, coaches were able to leverage their own strengths to meet differentiated needs of the preservice teachers and

partner- classrooms. This strengths-based approach proved pivotal to building preservice educator growth and confidence in each of the Accomplished Practices, while promoting meaningful collaboration and results in authentic changes in practice (Stover et al., 2011).

This manner of coaching explicitly prepared teacher candidates to, themselves, diagnose, categorize and navigate the structure of diverse problem types – as is often seen within the field of special education. Subsequently, preservice teachers coached in this model were prepared to equip students to mirror this systematic process within their own classrooms. The differentiated coaching method which forms the blueprint for change within the present teacher preparation model facilitates long-term growth in FEAPs and consequential success in the classroom (Kise, 2017).

Step 4: Communicating the vision.

A formal memorandum of understanding between agencies was drafted to emphasize authentic opportunities for preservice teachers to impact student learning within partner schools. Mutual agreements centered around a desire to qualify prospective educators to serve all learners, while working in collaborative inclusive teams.

For the university, recruiting students into the exceptional education program after the lengthy dormant period was an immediate concern. For the initial launch of the new program, no formal recruiting was conducted to ensure a "soft opening" while the new partnership was being built. Flyers were posted and representatives of the program spoke at the existing College transfer student orientations as the only recruiting measures in year one. The goal was to create a small cohort to build out the program design and features, and to create a program that "sells itself" with innovative course delivery, accessible classes, and community experiences that engage students from the very first course in the program. Social media was used to document the community engagement pieces, and to spread the word about the program. Eleven students began in the Fall of 2017. Drawing from the recommendations of the 2010 National Council for Accreditation of Teacher Education (NCATE) Blue Ribbon Panel report, Transforming Teacher Education Through Clinical Practice: A National Strategy to Prepare Effective Teachers, details of the program included:

> 1. Focus on improving outcomes for local students, with experiences developed in
> collaboration with k-12 partners and tailored to meet specific problems of practice
> 2. Shift from faculty-directed to student-directed scheduling of experiences using a
> commercial scheduling software so students customize their own experience

     3. Teaching residencies that allow students to work as paid paraprofessionals in partnering districts during their senior year.

     4. Cohort model that includes doctoral students as coaches and mentors in schools.

Step 5: Empowering others to act on the vision by removing obstacles.

Obstacles that make it difficult for students to enter into the exceptional education program were considered as the program was developed, including specifically the issue of prospective students' inability to pass the state general knowledge test (GKT) necessary for admission into the college. For high level issues such as these, the project team worked with the college and university to create a new track in exceptional education designed for students to have the option of an alternative certification track at the undergraduate level. The new track allows students to begin taking required education courses while studying to pass the GKT and then transferring into the traditional certification program, or customizing their learning experience to seek other careers in other areas of education that do not require teaching certification (as required by the State, only those students who pass the GKT graduate from the traditional B.S. Exceptional Education program and are certified at the end of the program.)

Other logistical obstacles such as scheduling and placing students in classroom experiences were addressed by working with the partner to determine the best way to easily place students in formal and informal experiences. A key component within the community-embedded approach included a gradual increase in the number of hours preservice teachers spent in the natural classroom environment.

In year two students moved into a more dynamic role as paid paraprofessionals within the partner school or other local schools and completed their teacher preparation as teacher-in- residence who teach in partnership with mentors for the entirety of a school-year. Both institutions defined the mission, needs, and assets in order to structure the teacher-in-residency to address the exceptional education teacher shortage and to create expanded learning opportunities for prospective teachers that will better prepare them to be successful in enacting complex teaching practices (Zeichner, 2010). Participants applied for paraprofessional jobs at the partner school or remained in paraprofessional positions in their respective districts if already employed. The teachers-in-residence were given the job description of all other paraprofessionals at the school and faculty worked with the school to determine the best ways to solve issues.

Step 6: Creating short-term wins

After establishing a system for easily allowing students to sign up for activities based on their own class schedule and availability, teachers and school-based administrators were asked to brainstorm a "wish list" of activities for volunteers based on the greatest needs of thie children and school. Based on identified needs, future teachers designed and ran activities such as those in Table 1. The first cohort of 11 exceptional education majors provided 25 individual and/or ongoing events with community partners and served over 2500 hours in schools and classrooms.

Measurable successes, or wins, incentivized continued growth within FEAPs of preservice teachers as well. Quality teacher education programs require not only improved clinical practices, but new school partnerships should promote preservice teacher allow students more time with children in a variety of settings and a fundamental redesign of existing professional development schools (PDS). This time-intensive model promotes response to immediate need and subsequent celebration of short-term wins. By following a model in which doctoral assistants and undergraduates are embedded within demonstration schools, university personnel are purposefully visible – response to need is fluid, and site-based. Short-term wins are a value add, building change in response to school needs. Partner schools feel immediate success, and the service-learning approach facilitates pop-up partnerships, to augment demonstration schools. The AACTE publication, A Pivot Toward Clinical Practice, it's Lexicon, and the Renewal of Teacher Preparation, lines out essential tenets for highly effective practice that the new program very specifically and purposefully sought to embrace in its redesign. With the community-embedded approach, university personnel share data internally with partner schools, positive change is built, which then creates a snowball effect – more partners are interested in getting involved, and authentic transformation throughout the district is catalyzed.

By graduation, students in the new program completed over 2000 hours of classroom experience, compared to the average bachelor's degree program range of 500-562 total clock hours (AACTE, 2013). Because of this direct relationship between cognizant investment in the natural classroom environment, mastery of FEAPs dramatically increased through coaching and mentorship (see Table 2).

Step 7: Consolidating improvements and producing still more change.

In a survey administered each year of the program, students rate their confidence in and exposure to the FEAPs to assure course content and field experiences are providing the experiences and learning necessary to move into the profession as confident, competent teachers. After analyzing student responses from each semester of the program, continued growth in skill and exposure to FEAPs is evident (see Table 3). By their final semester, preservice teachers from the initial cohort expressed full confidence in FEAPs, including: Managing individual and class behaviors through well-planned management systems; adapting the learning environment to accommodate diverse student needs; promoting student achievement through specific and immediate feedback; designing and modifying assessments to accommodate the learner; and facilitating relevant, cross-subject student learning experiences. This survey data is contrasted with preservice educators who have not yet begun full-time service within partner schools. Those not yet invested in community-embedded partner schools felt very little confidence in facilitating student growth or responding to student needs. As credentialed, novice teachers leave the profession citing stress from feeling underprepared to deal with diverse student needs and behavior – the growth in confidence experienced by our graduates within the community- embedded approach is worth noting. Graduates from the revised program leave ready to confidently differentiate learning experiences based on learner needs.

Step 8: Institutionalizing changes and building sustainability.

The relaunched special education program was designed with the goal of using partnerships not only to enhance the learning of our students, but to improve conditions for students in the schools and communities we serve. Exceptional education faculty, along with the Office of Clinical & Field Experiences at UCF have formed a living bridge between campus and practice (Bullough, Draper, Smith, & Birrell, 2004). The collaboration has resulted in the creation of a distinct culture that values and integrates the unique characteristics of each partner's milieu (Lefever-Davis, Johnson, Pearman, 2007). Monthly meetings have assisted in the collegial developmental process of interaction and reflection beneficial to the university, the teacher candidates, and the PDS. Effort put forth by each member of the partnership has had a powerful impact not only on the future educators, but on the classroom itself.

Conclusion

An authentic measure of program efficacy has been a strengthening of the impact of preservice teachers on partner school student achievement. This has been achieved through use of a differentiated model of implementation – the needs of each partner mentor school and classroom are assessed through surveys and in-person conversation. These needs are then matched to parallel EBP, which are presented within teacher preparation program curriculum and then subsequently coached by instructors and mentor teachers within the partner school environment. For instance, to apply EBP in reading, preservice teachers facilitated after-school reading club to beginning readers within one partner classroom, dynamic presentation of Romeo and Juliet to secondary students at another, and book club with siblings of students with disabilities. Each was then embedded into preservice teacher curriculum and instruction.

To promote growth in teacher practice, this responsive approach is key to meet the needs of partner schools and to provide early and continuous intervention to preservice teachers. Teacher educators can identify preservice teachers in need of more intensive and explicit coaching, thereby ensuring effective implementation of learned practice.

Dynamic response to stakeholder needs is central to a proactive approach to partnership within the teacher preparation umbrella. Initial data was taken to monitor mentor and preservice teacher experiences, survey growth in preservice teacher efficacy, identify areas needing additional support, and respond with midcourse adjustments. Through this effort, the authors were able to identify strengths of both preservice teachers within the program, as well as the overall efficacy of the partnership. As effective teachers are the greatest influence on student achievement, increasing teacher efficacy is the measure of a quality teacher preparation program (Brownell, Sindelar, Kiely, & Danielson, 2010).

To date, the program relaunch has been very successful. At the start of the 2017-2018 school year, when the relaunch began, overall teacher turnover in the partner district was over 60% - more than three times the national average of 16% (Carver-Thomas & Darling-Hammond, 2017). Teacher turnover at the seven school sites within the district ranged from 100% to 40% from the previous year. After two years of partnering with the university on their community- embedded teacher preparation program, overall teacher turnover in the district is down to 43%, and the school site within the district with the most

significant teacher attrition of 100% for 2017-2018 school year, was down to 19% at the start of the 2019-2020 school year.

By working with partners to add new layers such as teacher residencies; streamlined methods for university students to spend more time supporting local schools and less time in university classrooms; a differentiated coaching model to promote immediate feedback and teaching proficiency, the program has begun graduating teachers confident in their abilities decreasing behavior management issues and teacher burnout. In addition, our partner agency has benefitted from the collaboration. Eight of our initial 11 graduates who worked as teachers in residence with the partner school district during their program currently hold certified teaching positions with the district, and 11 more students are currently in the residency pipeline working at partner district school sites.

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A Collaboration Among a South Florida University and Local School Districts to Improve Teacher Retention

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Abstract

For the past two decades, many academic sources have cited causes for teacher shortages, a concerning phenomenon occurring in school districts throughout the country. This paper examines how one Catholic university successfully collaborated with various school districts in Florida to implement a recruitment program designed to attract, retain, and promote qualified educators amid the growing teacher shortage crisis. This paper addresses the problems and the challenges individuals in Florida have faced when entering the field of teaching through nontraditional channels. A major problem for teachers is the failure to pass the mandated Florida Teacher Certification Examination (FTCE). The paper also explores various initiatives designed to improve teacher retention.

The researchers aligned the overall program initiative to improve teacher retention by implementing at least two of the six federal policy strategies that Espinoza, Saunders, Kini, and Darling-Hammond (2018) described. Espinoza et al. (2018) spearheaded service scholarships and high-retention pathways into teaching. The findings of the case study were positive for both the school districts and the university. Most of the teachers who completed the required 15 credit hours sent in their transcripts and applied for their professional certification. Therefore, the program implemented (a) service scholarships and student loan forgiveness and (b) high-retention pathways into teaching to help retain teachers in the classroom.

Introduction

The National Council on Teacher Quality (NCTQ) (2016) revealed astonishingly high numbers of elementary teacher candidates failing their professional licensing tests each year. Furthermore, the NCTQ also revealed widespread evidence that teacher preparation programs gave scant attention to the content knowledge candidates need. Teacher candidates who do not pass these tests, even though they have finished their program of study, generally are denied a standard license by their state to teach (Espinoza et al., 2018). Therefore, Cadeau decided to create a program that would meet the needs of school districts and, at the same time, help alleviate the teacher shortage in South Florida schools. An estimated 109,000 individuals were uncertified for their teaching positions in the United States in 2017 (Sutcher, Darling-Hammond, & Carver-Thomas, 2019).

This analysis of a qualitative case study supports the argument that collaboration with higher education programs and school districts is the response to the teacher shortage. Also, another response is implementing one or two of the featured policies, high-retention pathways into teaching and scholarship service to improving teacher retention. Partnership and state-approved courses play a significant role in improving teacher retention in two primary school districts in South Florida: Miami Dade County and Broward County Schools. A local Catholic university education department has shown major growth in the numbers of teachers successfully obtaining their professional certifications. The growth is evident in the university's fast-paced online summer certification program with local school districts that provide state-approved courses and which aid in teacher retention. The Teacher Certification Program table referred to in the appendix provides information regarding an increasing number of students enrolled in the program, evidence that the program was a success.

A myriad of factors drive teacher staffing problems, also referred to as teacher shortages. These factors include not only the production of new teachers in various fields but also teacher turnover, changes in educational programs and pupil-teacher ratios, and the attractiveness of teaching generally and in specific locations (Sutcher et al., 2019). Due to teacher shortages, many school districts implement recruitment strategies to expand the pool of qualified educators. Many of the new teachers are career changers. They also did not graduate from a teacher educators' program. Therefore, they choose to complete their state teacher's certification through an alternative pathway to omit student teaching. By choosing

that route, many are required to complete professional coursework and to take a state exam; in Florida, the FTCE.

Statement of Problem

Florida classrooms remain understaffed by approximately 2,200 teachers, according to the Florida Educators Association (FEA) (LaGrone, 2019), the state teacher's union. The following sobering statistics outline the concern surrounding the nationwide teacher shortage:

A recent teacher shortage analysis found that teacher demand is projected to increase over the next decade, based on expectations that the school-aged population will increase by roughly 3 million students, student-teacher ratios will return to pre-recession levels (suggesting a decrease from 16:1 to 15:1), and teacher attrition rates will remain steady at 8% annually. Teacher supply, meanwhile, has been declining. Between 2009 and 2014, teacher preparation enrollment declined by 35% and 23% fewer preparation candidates completed their program. (Sutcher et al., 2019, p. 4)

According to FEA (LaGrone, 2019), the current shortage is roughly 700 more than at the same time last year. The problem is that many new teachers wait until it is too late to renew their teachers' certifications and risk losing their jobs when the state of Florida issues them a statement of eligibility with 15 credit hours of course requirements, the FTCE, and 1 year of experience. Besides, many school districts lack the resources to respond to teacher shortages. Therefore, it requires the collaboration of other entities and organizations to retain teachers, especially career changers. What is needed is the addition of targeted and specific professional development that will fully support the retention of these teachers by increasing both their personal sense of efficacy and the collective efficacy of the entire school staff (Ingersoll, 2001; Skaalvik, 2017; Springer, Swain, & Rodriguez, 2016).

Purpose Statement

The purpose of this study is to inform the education community about the success of a program that was pluralistic in assisting school districts to attract, retain, and promote qualified educators. "There are many benefits of high-quality retention programs. In general, benefits include increased retention of teachers, improved self-reflection, greater levels of confidence and self-esteem as well as reduced feelings of isolation and increased positive

attitudes" (Fantilli & McDougall, 2009, p. 814). Most states have been struggling to address teacher shortages for several years now, often filling the vacuum with underprepared teachers who are not able to give children the high-quality learning they need and who leave at two to three times the rate of well-prepared teachers. Most often, these teachers are hired in schools serving students of color and those from low-income families. Governors and legislators in many of these states are now working to turn the tide, according to a new report from the Learning Policy Institute (Sutcher, Darling-Hammond, & Carver-Thomas, 2016).

Many school districts in the United States are using six essential strategies to build long-term, sustainable systems to attract, develop, and retain a strong and stable teacher workforce. The policies collected by Espinoza et al. (2018) were selected based on research on teacher preparation, recruitment, and retention strategies that support greater teacher effectiveness and retention. These strategies can help states build long-term sustainable systems to attract, develop, and retain a strong and stable teacher workforce (Espinoza et al., 2018). The overall program aligned its initiative in improving teacher retention by implementing at least two of the six federal policy strategies by collaborating with local school districts, spearheaded by Espinoza et al. (2018) and others: (a) Service scholarships and student loan forgiveness; (b) high-retention pathways into teaching; (c) mentoring and induction for new teachers; (d) high-quality school principals; (e) competitive compensation, and (f) recruitment strategies to expand the pool of qualified educators (p.2).

The university provides an alternative pathway into teaching by offering approved educational courses at the graduate level and test preparation courses to teachers in passing the FTCE. Currently, the Florida State Board of Education offers alternative paths to certification for applicants who have not completed a bachelor's degree in education or a formal teacher preparation program. This alternative program has attracted several career changers who applied for a temporary certificate and were hired with a statement of eligibility at all three districts in the southern area of Florida: Miami Dade County, Broward County, and Palm Beach County Schools. However, Miami Dade County Public Schools (MDCPS), the fourth largest school district in the United States, has had the lowest number of teachers in the certification program because it will not hire any teachers unless they have passed the relevant subject area of the FTCE. However, Broward County Public

Schools, the sixth largest Florida school district, has had the most number of teachers who took advantage of the alternative pathway.

Definitions

The following are definitions of terms that are in this study.

Collaboration. Morrison (2017) stated that collaboration is based on unique contributions from each side.

Professional development. Professional development (PD) is the formal and informal support as well as activities that are designed to help teachers develop as professionals (Cordingley, 2015).

Recruitment. The process of attracting a pool of qualified candidates from which an appropriate selection decision can be made (Hughes, 2002).

Teacher certification. Teacher certification is another term for licensure required to teach in public schools in all grade levels K through 12. In contrast, the U.S. Bureau of Labor Statistics (as cited in learn.com, n.d.) stated that a teaching certificate is awarded upon completion of an academic program.

Teacher retention. Hodges and Baum (2018) defined teacher retention as the ability to reduce teacher mobility and to provide a more stable learning condition in schools. In addition, there is a need to assist teachers in remaining in the field of education while the rate of new teachers in the profession continues to decline.

Teacher shortage. A shortage is defined as the inability to fill vacancies at current wages with individuals qualified to teach in the fields needed. Using this definition, some states are experiencing high rates of shortages (Sutcher et al., 2016).

Research Questions

The following four questions guided the study:

1. Did the program provide approved courses that led teachers to retain their teaching position successfully?

2. Did the participants receive their professional certification after completing the program?

3. Were any of the recommended featured policies used as a guideline to respond to teacher shortage?

4. How have collaboration and partnership played a role in improving teacher retention and the organizations involved?

Literature Review

The literature survey reviews the challenges of teacher shortages, ways to improve teacher retention/recruitment and the importance of collaboration and professional development in schools.

Teacher shortage. Education has never been absent from challenges. Issues surrounding segregation and debates regarding best teaching strategies and practices, the composition of grade levels, length of the school day, methodology, and countless other areas, have always been present. However, a current area of educational crisis, which has most states and districts across the nation worried, is the teacher shortage crisis. The term teacher shortage refers to insufficient production of new teachers given the size of enrollment and teacher retirements (Sutcher et al., 2019).

Measures taken by researchers to understand the severity and the size of teacher shortages have been futile due to data limitations at the national level which have often precluded precise estimates of the size of the shortage. Much of the teacher shortage literature focuses on whether shortages exist and their relative intensity (Sutcher et al., 2019, p. 3). Anhorn (Luckett, 2016) conveyed that over 30% of beginning teachers leave the profession after 5 years, which has caused a deficit in the teacher workforce and has become a significant expense to students and school districts (Luckett, 2016).

Data has shown that the pipeline to supply teachers to school districts, state-approved college, and university-based teacher preparation programs also is declining. The Florida State Board of Education reported a decline in the number of students who completed teacher preparation programs and, for the first time, a failure to meet the demand for elementary school teachers (Cottle, 2019). Researchers, as well as state and district personnel, are not sitting idly by as the teacher crisis worsens (McHenry-Sorber & Campbell, 2019).

Professional development. The lack of professional development opportunities in schools leads new teachers to feel alone and unsatisfied with their own pedagogy. Professional development improves outcomes for teachers by recognizing and analyzing teachers' starting points and developing teachers' ownership of their learning (Cordingley,

2015). The whole idea of educating new teachers is to keep them excited about their profession and to further their desire to stay in the classroom. However, it is the role of school leadership as well as monetary constraints that deem what professional development opportunities are afforded to the new teacher by school districts.

Clark, Martorell, and Rockoff (2009) agreed that teachers are the primary influencers regarding student learning and achievement, but principals play a vital role as supporters of teachers' professional growth, development, and, ultimately, retention. Lack of professional development opportunities, as well as high-stakes accountability systems, also were found to increase turnover (Sims, 2016). These programs give new teachers confidence and the desire to better their educational practices. Teachers are more likely to stay in the education field if they feel satisfied with their pay, school, and overall professional duties.

Teacher retention/recruitment. Teacher recruitment and retention is an international challenge. In the United States, an estimated 8% turnover of the teaching workforce takes place each year (Sutcher et al., 2019). While states, districts, and schools across the country work diligently to place a highly qualified teacher in every classroom, these placements will become more difficult to fill given a recent projection that shows the United States will need to produce 375,000 new teachers annually by 2024. The pending replacements are to replace teachers who are retiring or prematurely leaving the profession and to meet the needs of the 3.15 million additional students projected to enroll in public schools (Husser & Bailey, 2016). In some instances, it is up to the administration of the school to foster young educators and to provide support for them. This is a critical time for the new teachers as they decide if this is the correct career path for them.

Collaboration. A growing body of evidence has revealed that teachers' satisfaction and career pathways are affected more by workplace environment, including aspects of the teachers' ability to collaborate with peers, than by student characteristics (Kraft, Papay, Johnson, Charner-Laird, Ng, & Reinhorn, 2015). New teachers need to work with their peers in order to feel that they are doing the right thing in terms of lessons and strategies to help their students. The 1st year of teachers' careers is sometimes the most difficult as they are acclimating to a new work environment.

Furthermore, the writers believe that school districts that collaborate with universities are imperative in providing certification courses and test prep for the teachers to take the

FTCE. The Catholic university did not provide test preps, but the local schools formed a partnership with other universities and colleges to provide test prep resources. The Learning Liaisons is one resource teachers used to prepare for the FTCE. The Learning Liaisons provided teachers with the necessary tools for the FTCE test. Brumbach and Ridenour (2003) indicated that a successful K-12 college relationship is built by finding ways to use the expertise, knowledge, and support of classroom instructors in the pursuit of meaningful partnerships and by helping those instructors find funding resources. Therefore, school-college collaboration can lead not only to college readiness but also to recruitment opportunities for teacher education programs and high school students.

Methodology and Data

This paper uses the methodology of a qualitative case study that analyzes local school districts in South Florida. Local school districts for K through 12 can build viable and effective partnerships with universities that benefit both institutions. Furthermore, many grants available to colleges now are looking favorably on such partnerships because they demonstrate the "broader impacts" of programs and research (Harper, 2018).

This report is beneficial to school districts and teacher preparation programs. The Department of Education Teacher's Certification Program is offered to all districts, but a partnership was formed between the Catholic university with two of the largest school districts, Miami Dade and Broward Schools, in order to provide a program that would benefit teachers and improve teacher retention. Many school districts have realized that they alone cannot prepare teachers. The rapidly changing environment requires strong, bold partnerships between districts and preparation programs, supported by effective policy, to ensure that all students have access to an excellent teacher (Education First, 2016). Therefore, district leaders face the prospect of not being able to put anyone, much less a high-quality teacher, in front of each student on the 1st day of school. This is a risk that they cannot afford. Preparation programs, too, are challenged by school districts and the Department of Education to find secure student teaching placements, ensure jobs for their graduates, and to keep up with the rapidly changing requirements of the teaching workforce and the state requirements. As a result, a growing number of districts and teacher preparation programs have begun to form strong, bold, and mutually beneficial partnerships to produce teacher candidates who better meet district needs. These partnerships, when

arranged well, take significant time and resources on behalf of both organizations but also can transform the work of partners, creating an opportunity for partners to apply for grants. The university's education department formed a reliable and beneficial partnership to help retain teachers in schools while hosting numerous recruitment and outreach events to promote its Master of Science Programs.

Data. The first contract was formed between the university and the Miami Dade School District, the fourth largest school district in the United States in January 2014. Only five students from Miami Dade Schools registered into the Teachers Certification Program, and all five students were able to receive their professional certification from the Florida Department of Education (FLDOE) in the Summer of 2014. Due to the low enrollment, Cadeau met with the United Teachers of Dade President to find out what can be done to meet teachers' needs (Ingram, 2014). The union president at that time indicated that the certification program was too expensive and that the price needed to be more reasonable, mainly because there were teachers who were about to lose their jobs. Furthermore, the teachers may not have any money after the summer. The department met as a whole, and the chief financial officer (CFO) was able to come up with a competitive price with local public universities. Due to the 70% reduced rate for each 3-credit course in the certification program, other administrators from other school districts contacted the department. Due to the reduced rate of the courses, the university was able to increase the number of admissions and registrations from all three county school districts. In 2015, enrollment improved, and about 25 students registered in the Teacher Certification Program (see Appendix).

In 2016, the Broward Teachers Union, representing the sixth-largest school district in the United States, contacted the university regarding the Teacher Certification Program and informed it that about 250 Broward teachers were in the process of completing the Florida Department of Education (FLDOE) alternative pathway certification. These teachers needed 15 credits of professional education courses, and some needed to pass the FTCE exam. There was a need in Broward County Schools.

The Teacher Incentive Fund (TIF) Grant, in the amount of $53.8 million, was secured by the Department of Coaching and Induction by Broward Schools (D. Augustin, personal communication, August 29, 2019). The grant permitted an opportunity for a partnership with

St. Thomas University to develop and implement programs designed to assist teachers with attaining their certification credentials. TIF awards competitive grants to states, districts, or partnerships with nonprofit organizations (U.S. Department of Education [USDOE], 2018). Therefore, the district also partnered with a few other colleges and universities to ensure that the 250 students were fully certified before their temporary certification ended (A. Brown, personal communication, February 8, 2017). Cadeau, one of the researchers and the founder of the program, confirmed that St. Thomas University's program was attractive because the courses ran for 3 weeks, and students were able to take a graduate course, which was transferable into one of the master's programs. However, it was offered only toward the end of the spring term and summer term. The school partnership was contingent upon the certification courses being offered to teachers from the Broward County Public Schools District throughout the school year so that they would not be at risk of missing their deadline, which is June 30 of each year. Therefore, the university formed a partnership with Broward Schools to provide courses year-round at a special rate for their teachers. This contract was for $220,000 that year, serving more than 120 teachers in their district. The school district paying for their certification courses ensured that the teachers were able to return to teaching the following school year. According to inquiries from the university's admissions office, the number of transcripts ordered by students and forms completed by Cadeau between 2015-2019, the program has attracted other teachers in states such as Georgia, North Carolina, and Pennsylvania.

Challenges the program faced after one year, according to the Teacher Certification Program, were due to the change of administration and the mission of the program. The program was not promoted, and no one registered one summer, but the year-long contract sustained the program. It was revived in the 2019 school year. However, in the 2018-2019 school year, the program had approximately 169 students, and the summer program had about 47 students registered from both Miami-Dade and Broward Counties and two students from Georgia.

The program is packaged to benefit all parties involved: teachers, school districts, and the university. School districts can benefit from partnerships with community colleges, colleges, and universities in multiple ways, such as dual enrollment, professional development, access to student teachers, and a teacher pipeline (Harper, 2018). Therefore,

the data collected throughout the years from 2015 to 2019 showed that the university outreach and recruitment of teachers into their program were increasing. Meanwhile, teachers completing their requirements for certification or recertification also have increased. The data showed that teachers were being retained in schools. Also, students' personal information was shared from the district confirming that students who ordered their transcripts were able to retain their current teaching position (Augustin, 2019). In addition, Cadeau, contacted students to confirm their status after completing the program.

The university's Teacher Certification Program has proven to be a success, in that the certification program enrollment number increased from 2015 to 2019. The data also shows an increasing number of students who ordered transcripts to be sent to the FLDOE to apply for professional certification. There also is an increasing number of students who requested an alternative certification form to be filled out by the university education department so that they could teach in other states. Due to the increasing number of teachers entering the certification program, data show that collaboration is a significant source in helping schools to retain teachers in the classroom, especially career changers. Jackson (2019) states that colleges can be successful in various ways to streamline, combine, and synthesize support systems to best address their unique student populations and campus culture. In retrospect, universities need to be quick to adapt to the changing demands and needs of students. Therefore, Cadeau believes that the teacher's education program was a success due to its ongoing collaboration with school districts and the increased teacher enrollment at the university's educational programs. Cadeau believes this form of partnership has helped increase student enrollment in the certification program and the master's program, evidenced by the increasing number of students who enroll each year.

Limitations

The limitation that existed was the accurate number of teachers who received their certification because many of the teachers did not possess the same statement of eligibility with the same deadline. The authors believe that drafting a survey for the participants and the districts to collect feedback from partners and teachers is imperative to improve subsequent programs.

Results

Did the program provide approved courses that led teachers to retain their teaching position successfully?

The Teacher Certification Program offers 10 courses from which teachers can choose according to their statement of eligibility from the FLDOE. Upon the launching of the program, FLDOE reviewed and approved the 10 courses. The following listed certification courses also are offered by the education department in one of the university's graduate programs. The courses and descriptions are included in the 2018-2019 university catalog. Below are three of the courses and the descriptions.

1. EDU 540: Effective Teaching and Classroom Management. This course assists students in integrating teaching methods, principles of curriculum development and evaluation, and methods for dealing with student behavior in a cohesive, well-managed educational program.

2. EDU 530: Educational Measurement. This course introduces prospective teachers to all of the elements of assessment that are essential to good teaching. It provides students with an understanding of the role of assessment in the instructional process.

3. EDU 506: Methods of Teaching English as a Second Language. This course offers a study of the methods of teaching English as a Second Language by reviewing the major methodologies and current trends in ESOL.

According to the Coaching and Induction Department with Broward Schools, yes, the certification program focused on offering certification courses for current educators who hold a temporary certificate. This is a partnership of the School Board of Broward County Department of Coaching and Induction and St. Thomas University's (STU) School of Arts and Education. This program offered graduate-level online certification courses that are taught in 3-week cycles. BCPS teachers were able to fulfill coursework based on their statement of eligibility obtained by the State of Florida. The purpose of the program is to increase the retention of educators moving from temporary to permanent certification attainment. Furthermore, the program increased the number of highly qualified teachers in high-need schools (A. Brown, personal communication, September 21, 2019).

Did the participants receive their professional certification after completing the program?

According to All Education Schools (n.d.), teacher certification is the process by which prospective educators get teacher licensing to teach within a given area after completing the required coursework, degrees, tests, and other specified criteria. Most of the participants received their professional certification, or renewed their teaching licensure, or both, after completing the program according to both districts' certification officers and personal conversation with students. The data collected by the university proved that most of the participants received their professional certification. The data collected by the university showed an increasing number of students completing the Teacher Certification Program and receiving their certification.

In addition, the program director of certification at the university contacted the students personally regarding the status of their certification. Nevertheless, not all teachers' deadline dates were the same; therefore, the students who had to turn in transcripts and FTCE test scores the same year they took the courses completed the certification process successfully. In the 2016 Summer Certification Program, only one student did not receive her professional certification because she did not pass the FTCE test. However, the student did receive an extension from the district to pass the test. In 2017, there were a total of 137 students who completed courses; however, not all teachers' statements of eligibility indicated that the deadline was June 30, 2017. Therefore, only a total of 85 students received their professional certification from South Florida tri-county districts. Eight students did not receive a passing grade in one or two courses due to personal issues. However, their certification deadline was June 30, 2018. Therefore, those students received an Incomplete and were given a timeline to complete the course. The writer also completed four certification forms for students who moved to Georgia, North Carolina, and other states. In 2018, the program was only run for one county through the year-round contract. No students from the other two significant counties were able to register during the summer. The number of students who registered for the Certification Program from Broward County Public Schools was 56. Not all students had a certification deadline of June 30, 2019. Therefore, 38 students received their professional certification in Florida and other states. The remaining students returned the following school year in 2019. In 2019, a total of 146 students from two school districts and one student from Atlanta, Georgia, participated. A total of 145 students completed their courses with a passing grade and one with an

Incomplete. However, only 97 students were eligible to apply, or renew, or both, for professional certification. The Miami Dade County Schools certification director stated that the number of teachers who did not complete their courses for certification was relatively low and that all but one student who completed the program was not certified and had to be terminated because she did not pass her FTCE subject area before June 30, 2019 (A. Diaz, personal communication, July 10, 2019).

On the other hand, Broward County Public Schools reported that 87% of the participating educators met their course requirements as outlined by the State of Florida on the educator's temporary certificate. Of the 87% of teachers who met their course requirements, 61% maintained their employment and moved from a temporary certificate to a certified teacher for Broward County Public Schools (A. Brown, personal communication, September 24, 2019).

The student who was not retained in the classroom applied to the university's M.S. in Elementary Education Program and is taking a prep course with Learning Liaison. Throughout the years, the university was able to recruit many teachers into the M.S. in Elementary Education, M.S. in Educational Leadership, and Ed.D. in Management Programs. The authors believe there should be a more data-driven initiative to keep track of students who completed the program and access to the number of transcripts ordered from the teachers' certification program.

Were any of the recommended featured policies used as a guideline to respond to the teacher shortage and why?
Schools throughout the nation are using the six national policy strategies to solve teacher shortages by providing professional aid to school districts to strengthen the profession. Espinoza et al., (2018) provided a report with six evidence-based policies that indicated that schools are addressing their teacher shortages while strengthening their educator workforce. The policy strategies include the following: (a) service scholarships and student loan forgiveness; (b) high-retention pathways into teaching; (c) mentoring and induction for new teachers; (d) high-quality school principals; (e) competitive compensation; and (f) recruitment strategies to expand the pool of qualified educators. However, the director initiation targeted the high-retention pathways into teaching by providing courses approved by the FLDOE. However, due to the cost of the certification program, all parties involved were

not benefiting. Teachers could not afford to pay for the courses, the number of students enrolled in the program was relatively low, and the school district had revolving doors of teachers.

In order to overcome high-cost barriers, at least 40 states have established service scholarship and loan forgiveness programs as a well-grounded policy to recruit and to retain high-quality teachers. Such programs underwrite the cost of teacher preparation in exchange for many years of service in the profession. Research has found that effective service scholarship and loan forgiveness programs leverage greater recruitment into professional fields and locations where individuals are needed and support retention (Espinoza et al., 2018).

Therefore, the university cost per course decreased by 70% for teachers applying or renewing their professional certification, which is another policy strategy. Service scholarship is more of a discounted rate, or partial scholarship, or both, for the program. Students did not qualify for financial aid but had to pay out of pocket. Many teachers still had difficulty paying out of pocket, especially new teachers who were working with a temporary certificate and were required to take 15 credit hours. The teachers who were renewing their licensure registered for three credit hours; therefore, it was affordable for them to pay out of pocket. A partnership was formed to provide service scholarships for teachers in one of the counties. That school district used its $53.8 million grant to implement all six policy strategies. The goal of the university is to be able to apply another policy strategy. For example, a high-quality school principal is needed to expand its Educational Leadership Program. The principal is the leader of the school. To have effective teachers, the principal also must be efficient and effective.

As mentioned previously, this study implemented two of Espinoza et al.'s (2018) policies: (a) Service scholarships and student loan forgiveness and (b) high-retention pathways into teaching. To address the service scholarship policy, the cost per course was reduced by 70% for teachers applying or renewing their professional certification. Providing the cost reduction tied to the second policy by monetarily supporting teacher retention. Research has shown that effective service scholarship and loan forgiveness programs leverage greater recruitment into professional fields and locations where individuals are needed and support retention (Espinoza et al., 2018).

How did collaboration and partnership play a role in improving teacher retention and the organizations involved?

Gimbel (2018) noted that collaborations between universities and school districts focus more on social responsibility. Besides, collaboration has taken the form of research studies, professional development, or joint technology and curriculum initiatives. Indeed, this initiative at the local South Florida university in this report took the form of professional development, distance learning, and curriculum development. The partnership was between school districts to provide continuing education for teachers in need of their teachers' licensures. The program was a fast-paced, 3-week online program. Because there are so many career changers, many school districts have done a great job in recruiting and implementing another policy strategy. For example, recruitment strategies have been implemented to expand the pool of qualified educators by hiring teachers with a degree in a field other than education.

Nevertheless, these teachers not only are not certified in the field but also lack the methodologies and pedagogy of teaching in the content area in K through 12. Because of the need to retain those teachers in the classrooms, the university was able to meet its needs by providing certification courses that would meet the professional section of their licensure requirements according to their letter of state of eligibility. In the long run, the authors believe this form of partnership not only will improve teacher shortages but also will provide teacher attractiveness in the field so that they will have longevity in the teaching profession. The NCTQ report (Education First, 2016) explored the crucial essential elements that a quality program must contain as the foundation on which methods courses, professorial quality, assignments, opportunities to practice teaching, and other course requirements all rest. If a program fails at these fundamentals, even excellence in the other areas will not sufficiently prepare teachers for their classrooms.

The results of the case study have proven to be a success for the teachers because they were able to take courses that are approved by the FLDOE. Most importantly, they were able to gain state certification. In addition, teachers were able to take graduate courses that are accepted and transferable to any program at the university at an affordable rate. The district benefited because it has helped them to retain yet another teacher instead of having to recruit for more teachers and classrooms with a high turnover rate. A. Brown (2019)

indicated that the partnership between the university and Broward Schools has benefited their district because Broward County Public Schools increased teachers' retention from 82% in 2016 to 90% in 2019.

Therefore, each partner must hold the other accountable, while the university must provide quality professional development and courses. The schools also must investigate to make sure the universities they are partnering with provide quality programs. In contrast, school districts can use the information the NCTQ (Education First, 2016) provides to hold crucial conversations with local institutions about what they can do to improve the quality of their graduates' preparation programs if they want the district to continue hiring them or a continued partnership. The university gained another stream of revenue and also an opportunity to recruit teachers into their Master of Science Program.

Recommendations

This case study was an overall success. It is recommended by the department that a Likert scale survey should be drafted with questionnaires about the certification program, certification status, employment status, and whether or not the students are interested in returning to the university to complete an M.S., Ed.D., or Ph.D. program. In addition, a more data-driven initiative is required to keep track of students who completed the program.

Conclusion

Over the past two decades, teacher shortage has been a dominant factor behind the demand for new teachers and the difficulties schools encountered to adequately staff classrooms with qualified teachers (Ingersoll, 2001). Districts across the country face challenges associated with teacher recruitment and retention. Leaders must effectively employ measures to staff schools with teachers in a time when there is a scarcity of aspiring teachers graduating from university teacher preparation programs and when teachers are abandoning the profession. Additionally, underprepared teachers who enter teaching through nontraditional routes are unable to pass state certification exams to become licensed teachers.

The qualitative case study outlines successful collaborative efforts implemented by a Catholic university and several school districts in South Florida: Miami Dade and Broward. The partnerships between the school districts and the education department at the

university proved useful in helping teachers to earn their professional certification and becoming licensed teachers.

Thus, they successfully addressed and improved teacher retention in the targeted counties. The outcome of this qualitative study is evidence that there is an increase in the recruitment and retention of licensed teachers when school districts work in tandem with higher education programs. Guarino, Santibañez, and Daley (2006) indicated that teacher recruitment and retention are two aspects of the overall labor market for teachers. From the standpoint of the districts and schools that hire teachers, recruitment and retention policies have a direct impact on their ability to fill the desired numbers of teaching slots. Policies that promote retention would focus on adjusting the rewards offered by teaching relative to those offered by completing occupations or activities. Therefore, collaboration among districts in South Florida and universities has implemented policies that have improved teacher recruitment and retention. This study implemented two of Espinoza et al.'s (2018) policies: (a) service scholarships and student loan forgiveness and (b) high-retention pathways into teaching.

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Appendix A

Teacher Certification Program

Year (s)	No. of students registered in certification courses in Miami-Dade, Broward, Palm Beach and other	No. of students completing certification courses with a passing grade	No. of transcripts sent to FLDOE
2015	25	23	20
2016	47	47	43
2017	137	129	85
2018	56	51	38
2019	44	44	42
	102	100	55

The table provides the number of enrollments from 2015 to 2019 in the Teacher Certification

Program. The Program began as a Summer Certification, but its last session in 2019 shows 44

students registered in the summer and 102 enrolled in both Fall and Spring sessions.

Preservice Teachers' Perceptions of Garden-Based Learning: Opportunities for Growth and Partnership

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Abstract

Though school gardens have become a popular addition to schoolyards across the United States, and research continues to demonstrate the positive effects of gardening on student health and academic performance, garden-based learning remains largely absent from traditional teacher preparation programs. This is a critical gap, as teacher preparation programs shape the practices of future teachers. To begin addressing this gap, we conducted a qualitative case study to explore preservice teachers' perspectives on and experiences with garden-based learning. In this article, we present recommendations for teacher preparation programs derived from these conversations with preservice teachers. Participants expressed enthusiasm about the idea of garden-based learning, though they did not necessarily feel confident in leading their future students in gardening. They shared a desire for exposure to garden-based content through an education elective or an additional unit in existing courses. We argue that many outside partners (non-profits, university extension services) are well-positioned to provide these desired additions to teacher preparation programs.

Introduction

Garden-based learning (GBL) is a growing movement in the United States education system. The 2015 USDA Farm-to-School Census recorded 7,101 school gardens in school districts across the United States, up from 2,401 recorded in 2013 (USDA, 2015). This increase may be a result of the benefits of GBL that have been clearly documented, ranging from health and nutrition to achievement on standardized tests (Berezowitz, Bontrager Yoder, & Schoeller, 2015; Klemmer, Waliczek, & Zajicek, 2005). Specifically, school gardens have been shown to boost physical activity, increase fruit and vegetable consumption, address food insecurity, improve student attitudes towards school, decrease problematic behaviors or behaviors associated with attention deficit disorder, and effectively engage students of diverse backgrounds and learning styles (Berezowitz, Bontrager Yoder, & Schoeller, 2015; Blair, 2009; Lautenschlager & Smith, 2007; Meinen, Friese, Wright, & Carrel, 2012; Roselle & Connery, 2016). Further, GBL can create memorable, hands-on learning opportunities that integrate gardening with math, science, social studies, and language arts (Graham, Beall, Lussier, McLaughlin, & Zidenberg-Cherr, 2005; Passy, 2014). Finally, school gardening is an important part of the broader movement toward "green schools" and sustainability education in public schools (Sterrett, 2016).

Although there are numerous advantages to school gardening, many traditionally prepared classroom teachers are not equipped with the skills necessary to successfully integrate GBL into their pedagogy. In her evaluative review of the benefits of school gardening, Blair (2009) concluded that teacher comfort levels with GBL vary widely, and that there is often a fundamental tension between the philosophy of GBL and the traditional approach to elementary education that prevents school garden programs from reaching their fullest potential. This tension between the "messiness" of GBL and the relative rigidity of elementary education has been substantiated in more recent research, as well (Cramer, Ball, & Hendrickson, 2019). Additionally, a lack of teacher comfort with gardening is not surprising since GBL is for the most part still absent from formal early childhood and elementary teacher preparation programs (Desmond, Grieshop, & Subramaniam, 2004). This is a critical gap, as teacher preparation programs mold and define the beliefs and practices of future teachers (Pajares, 1993; Powers, 2004). In other words, if teachers are not exposed to garden-based education during their training, it is not surprising that

classroom teachers do not incorporate school gardening into their teaching. Teachers' knowledge of gardening and their comfort level of working with students in garden settings is essential when integrating gardening with daily classroom activities.

Beyond these limitations to school garden utilization by teachers, classroom teachers also face extreme demands on their time during the school day, are often expected to cover far more content than they are able, and are constrained by the expectations of high-stakes testing. It is, in part, due to these challenges, that school garden programming is often initiated and facilitated by outside entities such as non-profit organizations or cooperative extension services. While these models of GBL are effective in some ways, and certainly better for students than no GBL, they are no substitute for the full integration of gardening into the classroom curriculum. There is a legitimacy and efficacy to school gardening initiatives that comes only when the classroom teachers feel empowered to utilize the garden in their teaching (Cramer & Ball, 2019).

In a study examining preservice teachers' ability to teach for sustainability, specifically food sustainability, through school gardens, Carney (2011) concluded that teacher education programs can impact teachers' likelihood to incorporate sustainability into their practice. For this to occur, Carney recommends teacher education programs explicitly include sustainability principles throughout their curriculum. She further noted that preservice teachers should have field experiences where sustainability principles are evident such as school gardening programs. Moreover, Nolet (2009) states that to teach for sustainability, preservice teachers "need to interact with tangible examples that support integration of sustainability into their own developing knowledge of practice" (p. 432). The state of Washington highlights the importance of sustainability education by requiring teacher preparation programs to provide evidence that teacher candidates can teach for sustainability, particularly in preparing K-12 students to live in an environmentally sustainable and globally interconnected society (Nolet, 2009).

In light of the myriad benefits of GBL to students, teachers, and school culture overall, combined with the general absence of GBL in teacher preparation programs, we conducted a qualitative case study (Creswell, 2013) to explore preservice teachers' perceptions of and experiences with GBL. Methods and findings are presented below, along with recommendations for teacher preparation programs derived from the conversations

with preservice teachers. We argue that, in order for the GBL movement to continue to expand and flourish, garden-based content and teaching methods must be integrated into teacher preparation programs. Additionally, we argue that many outside partners, such as GBL non-profits or university extension services, are well-positioned to provide these additions to the curriculum.

Methodology

For this research, we utilized a qualitative case study design (Creswell, 2013; Merriam, 1998). Creswell (2013) states that qualitative methods are appropriate when "an issue needs to be explored" (p. 47), when "we need a complex, detailed understanding of the issue" (p. 48), or when "we want to empower individuals to share their stories, hear their voices, and minimize the power relationship that often exists between a researcher and the participants in a study" (p. 48). While each of these criteria aligns with our research purpose, and thus justify our qualitative inquiry, the central justification of a qualitative exploration into preservice teachers' perceptions of GBL is that we are truly exploring new territory with this investigation. To date, there is no published scholarship explicitly focused on preservice teachers and GBL. Within the broader umbrella of qualitative inquiry, we utilized case study methods to examine a tightly bounded system – preservice teachers from one teacher education program, interning within one school district – as both Stake (1995) and Yin (2003) deem appropriate.

Participants and data sources

The primary data from which our findings emerged are semi-structured interviews with eight purposively selected preservice teachers. At the time of the research, all eight participants were finishing their teaching internships in local elementary schools. All participants were women, nearing the completion of their bachelor's degrees in elementary education at a private university in Florida. We conducted one-on-one, semi-structured interviews with each participant, using an interview guide (Appendix) that explored their experiences with gardening, knowledge of GBL, reflections on their own teacher preparation, and suggestions for integration of GBL into teacher education programs. Interviews, ranging from 25 to 52 minutes, were recorded and fully transcribed.

Data analysis

Upon completion of data collection and interview transcription, we engaged in line-by-line coding of transcripts, then aggregated codes into categories and themes, and selected representative quotes to illustrate the findings. Though we utilized a case study framework for the research, we found the line-by-line coding of grounded theory to be most useful in teasing out clear categories and themes from the interview data (Charmaz, 2014). Participant names are all pseudonyms. We established the trustworthiness of the findings through researcher reflexive journaling, the maintaining of a comprehensive audit trail, and peer debrief (Creswell, 2013). While we make no claims of generalizability in our findings, which are unique to the bounded system, transferable lessons exist that may apply to other programs and school contexts (Stake, 1995; Yin, 2003).

Findings

Categories that emerged from our analysis of qualitative interview data are presented below in two general themes – preservice teachers' perceptions of GBL and recommendations for teacher education programs derived from these perceptions.

Preservice teachers' perceptions of garden-based learning

"Just to give you a heads up, I know nothing about gardening."

Though all eight participants mentioned some prior exposure to gardening at home, school, or in the community, they all also consistently downplayed any gardening knowledge they may have possessed. Some participants, like Katie, had negative associations with gardening or the outdoors, saying things like "My experiences with gardening? As a child I hated it. My mom was like 'let's go pull weeds,' and I'm like, 'no.' That was the extent of that experience." Others repeatedly assured us that, though they had gardened before, they were never successful. Emma said, "We used to have a garden in our backyard when I was little. But didn't really grow anything. We tried but nothing would grow. But I've always wanted to garden but I just haven't."

All but two of the participants, Julia and Molly, had done their teaching internships at schools with some sort of outdoor classroom or school garden space. Participants' exposure to gardening during their internships varied greatly depending upon their cooperating teacher's comfort with taking students outside. Katie's cooperating teacher, for example, was in charge of her school's gardening committee, so Katie spent a lot of time in the garden with students both during and after school. Melissa, alternately, said, "I just don't

know anything much about it because our class, and none of the other fourth grade classes, used the plots that we have out in front of our [classrooms]." Jordan planted Brussels sprouts and sunflowers with her class and then took them out two more times to check on the plants' growth.

An interesting trend in the interviews that paralleled the participants' downplaying of their own gardening experience and knowledge, was their downplaying of their ability to integrate gardening into the curriculum. When they shared an example of taking their students outside or gardening with them during their internship, they would often provide the caveat that it was not academic, as Amelia did when she said, "I took my kindergarten students out to the garden to use our five senses. So we got to feel the leaves and smell, but it was nothing curriculum-based." This modulation is noteworthy because, in fact, learning the five senses is a part of the state standards for kindergarten science. It demonstrates Amelia's lack of awareness of how GBL fits into the curriculum, which highlights the importance of including garden integration topics in teacher preparation programs (see recommendations below). It also speaks to larger questions about how we define "academic" knowledge, and about unaddressed biases we may possess against non-formal or non-traditional epistemologies.

"I have never heard of garden-based learning. Is this something I should know?"

Another frequent category of response among participants was never having heard the term "garden-based learning" before, and certainly never learning about GBL in their college classes. The quote that gives this category its name, attributed to Emma, reflects the anxiety that many of them felt when asked to define "garden-based learning." They were all within months of graduating with degrees in education, and they panicked because we asked them something about education with which they were completely unfamiliar. Despite this lack of prior knowledge of GBL, most participants got close to a correct definition once they started processing through what it might mean. Over the course of Amelia's response to being asked to define GBL, she went from total unfamiliarity to improvising potential lesson plans and saying, "there's actually so many things you could do with garden-based learning!" Amelia, and others, immediately jumped to science as the only natural subject fit for GBL (though by the end of Amelia's revelatory response, she recognized language arts and other connections, too). Melissa said, "I guess it would fall under science, different science

standards that have to do with health and nutrition and things like that. Using a garden to supplement the standards." Emma said, "A health class maybe...learning about vegetables and growing them? I don't know." Julia captured the accepted definition of GBL in her response, though, again, she said she did not know for sure. She stated:

> I picture school ... There would be a garden and kids would work in the garden and you would use that garden to teach them. I feel like it could be either science or you could do it for social learning or just ... I mean, this is a guess because I have really no idea. You just have this garden and you're pulling learning opportunities from it whenever possible.

Opportunities and challenges

Participants' discussions of the potential benefits of GBL mirrored what we see in the literature. Reflecting on the role of GBL in behavior management, Katie said, "I feel we spend a lot of time in the classroom, so it's good to get them out doing something. That's a good way to release energy in a productive manner, too." Katie, who disclosed her personal struggle with dyslexia in our interview, also remarked on the potential for GBL to engage diverse learning styles, stating:

> The different learner in me says that I think gardening is a really cool thing to incorporate for your students who are not strong in reading and writing. Give them another outlet that is very project-based, and hands-on, to give them an activity to do. I think that would be a really good way to be like, hey, look, you're successful. Your plant is growing. This is a very clear indication that you are succeeding.

Participants spoke about the value of providing concrete, hands-on learning opportunities to supplement "in-class" content. Emma said, "If you're learning about something like that in science, then it's definitely a benefit to go out there and actually experience it instead of just reading about it." Julia, Molly, Vanessa, and Jordan talked about the social-emotional benefits of caring for something, working within a community, and learning patience through gardening. Jordan also said that based on her experience at her internship, she believed parents loved to see gardens at their children's schools, and even her principal would say at faculty meetings, "Look at the garden! Make sure you're walking by, taking your kids by it. It's really growing!" Melissa reflected on the health-, confidence-, and morale-boosting nature of the school garden, saying:

I think they would really like to know that they had a part in creating this food. Knowing that they are able to grow their own food, maintain a healthier lifestyle. Also, it would boost classroom morale. I think if they have the plot outside the classroom and every day they're coming in, they're seeing it's growing and growing, that gets them excited.

Finally, Amelia spoke to the place-based nature of GBL, commenting on the particular ease of gardening with students in a place like Florida and saying, "With the Florida weather, it's just nice to be outside, even if it's just for a few minutes."

Though all eight participants enthusiastically believed in the positive potential of GBL, they were realistic about its challenges. Amelia said, "Sometimes when I go outside I'm like, oh my gosh I should be teaching, I'm not going to get to this today, and I feel guilty cause they're outside playing. But that's what they need." In addition to the guilt expressed explicitly by Amelia, others shared similar concerns about time. Katie said, "We definitely could find the time. It's just it's hard. There's just so many other things that we're thinking about and trying to get done," and Melissa stated, "… five minutes is even so precious from thing, to thing, to thing, subject to subject. Once 7:30 hits, we're working non-stop. I think especially in the springtime as it gets closer to FSA, the pressure is on both the students and the teachers." In addition to finding time in the school day to incorporate trips to the garden, participants were also concerned about the time to maintain the garden itself. Amelia said, "It takes a lot of time and work. During teacher duty days I see like three of them [garden committee members] go out there and they're just pulling weeds and planting stuff and I'm like, you could be lesson planning and stuff - why did you choose to do this?" Participants wondered who would take care of the garden over the summer as well.

Julia expanded her reflections on the challenges of GBL to incorporate a larger critique of the rigidity and structure of public education. She said:

I just feel like it's more a larger scale issue and if you were going to integrate, you'd have to address that larger-scale issue of how we're doing science and … How this kind of framework that's being given to teachers with no flexibility affects student learning. They have the principals and administrators coming through and checking and making sure they're on the daily schedule and stuff.

Like, a lot of fun things that I was trying to do, like experiments and stuff, it

was like this huge ordeal try to take us outside for experiments.

Julia's reflections provide a helpful transition from simply discussing preservice

teachers' perceptions of GBL, to considering concrete ways to include GBL in teacher

preparation programs. Additionally, as she notes, incorporating GBL into these programs

may also call to the forefront larger, potentially uncomfortable, questions about the overall

paradigm of public education in Florida. The integration of GBL into accredited teacher

preparation programs not only stands to benefit students and future teachers, but may also

help to disrupt the inflexibility of the educational landscape by demonstrating an

institutionalized legitimacy of GBL.

Recommendations for teacher education programs

From a foundation of our (the authors') own combined expertise in teacher education

and GBL and the perspectives of the preservice teachers we interviewed, we have

developed a series of recommendations for teacher education programs to integrate GBL

into their curricula. There is a clear demand for exposure to GBL among preservice teachers,

as expressed by Emma who stated plainly during her interview, "You should do a class on

this because I would take it." Indeed, we propose the following recommendations to fill this

void.

Incorporate an education elective or unit in the science methods course.

All eight participants expressed that they wished they had been exposed to GBL at

some point during their college education. When asked how they saw this content fitting into

their current education program, they presented two recurring suggestions – develop a GBL

elective course or add a unit on GBL to the current science methods class. Acknowledging

curricular and scheduling constraints, Amelia said, "I want to say I would make it its own

course, but then I don't know if we could make it a requirement cause there's so many

classes in the education department we were required to take." Emma asked for a full

course on GBL, stating, "I think being able to take a class that's centered around it would be

good. And then, with all of our education classes, we do field experience. So, being able to

go somewhere that actually integrates that into their curriculum and doing it hands-on,"

while Katie, Julia, and Molly suggested a combination of science units, guest lectures in their

"professional educator" course, or even a professional development opportunity on a weekend or over a break.

No matter the format, full course or shorter unit, participants agreed that one could not learn about GBL without the hands-on experience Emma mentioned. Or as Vanessa said, "until your hands are in the dirt," you will not understand GBL. Melissa suggested incorporating an education student-led pilot project:

> Even if it was an elective for garden-based learning, one of your projects could be you go into a school and show them. You help them start a garden and walk them through. Every week you check in with them and that sort of thing. You're teaching, so you're getting your teaching practice in, but you're also incorporating the garden-based learning.

Include specific content for preservice teacher GBL education.

Preservice teachers expressed a need for instruction in the following areas to effectively incorporate GBL into their future classrooms.

Maintaining a school garden.

Once more, because participants believed they possessed very limited knowledge about gardening, they voiced a desire for instruction in basic gardening fundamentals so that their GBL endeavors would be set up for success. Vanessa said, "I would need to specifically know just the basic foundations of gardening," and Molly said, "I would need to know what kind of plants can we plant? Where can we put them? Can I have them in my classroom? What are the limitations that I have?" Along with desiring training in basic gardening skills, Amelia asked for information on funding a school garden. She asked, "How could someone, like a first-year teacher, if I was just trying to do my own small garden bed, how could I find funds for that?"

Curriculum integration.

Participants were, rightly, very concerned about spending any school time on something that would not help their students meet state standards. Emma said:

> I think the principal would wanna make sure mostly it aligns with standards, I think, because that's really what they're focused on is "are you teaching the standards?" I think parents would like it because all the kids are interested in

gardening, but some might also wanna know "why are you doing this? Is it necessary? Is it helping them learn?"

Vanessa expressed frustration that something as important as learning about the environment or learning to feed yourself did not naturally fit into the curriculum. She said, "If there's something valuable for kids to be learning, but it's not in the module or in the curricular map... I feel like I could go on a tangent about why that's not acceptable..." Additionally, though participants acknowledged the myriad benefits of GBL, they felt ill-equipped to adapt indoor lesson plans to a garden setting, and in general, they did not know where to look for resources on GBL lesson planning. Participants wanted clear instruction on how GBL aligns with state standards. We provide specifics below about how to meet this recommendation by engaging outside partners and utilizing existing garden-based curricula.

Behavior management in the school garden.

Finally, participants stated that, overall, they had not received instruction in outdoor behavior management techniques, and that this was an additional concern that kept their cooperating teachers from taking students outside. Julia worried about bugs and safety, while Katie worried about managing students' energy levels and reminding them that it was not recess. Incorporating focused instruction on outdoor classroom management into teacher preparation programs may further reduce a barrier that keeps otherwise interested teachers from taking their students outside.

Engage outside partners.

Though we lay out a basic framework, above, of garden-based content to include in teacher preparation programs, we acknowledge that the concrete processes of incorporating GBL into these programs may vary widely according to school and location. It is for this reason, in addition the general place-based nature (Sobel, 2004) of GBL, that we suggest engagement with outside partners as a viable means of teaching garden-based content to preservice teachers.

For teacher preparation programs housed in land-grant institutions, we encourage education faculty to reach out to their colleagues in colleges of agriculture for collaboration. Horticulture faculty, for example, could guest lecture in an education class on basic gardening principles, or provide a series of Saturday workshops on the topic. Additionally, though the cooperative extension service originated in the land-grant institution, it is

extension's mandate to serve all residents of the state and disseminate research from the institution. Each county in Florida has an extension office staffed with horticulture and food systems professionals, among other areas of expertise (UF/IFAS Extension, 2019). While these trained professionals also possess knowledge of gardening and food production like their on-campus colleagues, extension agents are generally trained in non-formal education methods, too, and are well-equipped to assist preservice teachers in developing both gardening knowledge and pedagogical content knowledge. Florida Agriculture in the Classroom also has a full, Florida-specific GBL curriculum available for download on their website (2019).

Beyond the land-grant and cooperative extension system, countless non-profits throughout the country have been leading the way in the GBL movement. Sources like the Edible Schoolyard Network (2019) have helped aggregate information about the diversity of programs and locations in one place. Education faculty can use this network to locate organizations in their vicinity and invite non-profit leaders to take part in developing additions to teacher preparation curricula. These collaborations not only benefit the preservice teachers who will be exposed to a greater diversity of educational models, but they also help fulfill a more global goal of the GBL movement, which is to bring more of the broader community into the educational environment through gardening (Langhout, Rappaport, & Simmons, 2002). Some larger, older, and more established organizations, such as Life Lab in Santa Cruz, California, even offer professional development training either on-site in California, or at a school location anywhere in the country (Life Lab, 2019). Life Lab also produces free webinars from time to time on relevant topics such as classroom management in the school garden or funding the school garden (topics that were mentioned specifically by our preservice teacher participants). These archived webinars could easily be integrated into an established course in a teacher preparation program, or a full Life Lab training could be held on campus for preservice teachers. Finally, Life Lab publishes a curriculum book, *The Growing Classroom*, which may be of use to preservice teachers during their internships.

Conclusion

There are exciting opportunities for preservice and new teachers to take the lead in furthering the garden-based learning movement in Florida and beyond. The preservice

teachers we spoke to were enthusiastic about the prospect of gardening with their future students and understood the benefits of GBL to students, families, and communities. However, they lacked the preparation and confidence to be able to effectively integrate gardening into their teaching. It is our hope that these exploratory findings and suggestions serve as a catalyst to start thinking about incorporating GBL into teacher education programs. Additionally, due to the wealth of garden-based knowledge held by entities outside of the traditional teacher education realm, we strongly encourage teacher preparation programs to engage these outside partners in exposing preservice teachers to GBL. Just as it is unrealistic to expect new teachers to be able to garden with their students without proper exposure and preparation during their own education, it is unrealistic to expect education faculty in teacher preparation programs to be able to single-handedly incorporate GBL into their curricula. We believe that effective partnerships with land-grant faculty, extension services, and school garden non-profits can help meet shared goals of exposing future teachers to GBL and establishing the legitimacy of GBL in public education (Cramer & Ball, 2019), while limiting the undue burden on teacher educators.

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Appendix

Interview protocol – Pre-service teachers and garden-based learning

*Semi-structured interview, questions and order will shift based upon conversation with participant

1.   Tell me about your experiences with gardening in general.

-If participant does not have much experience with gardening, ask about other experiences with food, agriculture, or in nature

2.   Why do you want to be a teacher?

3.   What comes to mind when I say the phrase "garden-based learning"?

-Follow up: do you have a garden at your internship site? Did you have a garden at a school you attended as a student? Explore answers...

4.   What have you learned about garden-based learning, outdoor education, or place-based education in your college classes?

-What have you learned about GBL at your internship site?

5.   Would you want to garden with your future students? Why or why not?

-Explore knowledge of benefits of garden-based learning, challenges associated with GBL, prior exposure.

6.   How do you think administrators, parents, classroom teachers, or community members perceive garden-based learning?

7.   Would you like to learn more about garden-based learning? If so, where would you look for information, lesson ideas, or resources?

8.   What would it look like for [University] to integrate garden-based learning into its teacher education program?

9.   Any other thoughts on garden-based learning, teacher education, or public education?