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The Effects of Rurality and Education Deserts on the Four-Year Degree Selection of
Aspiring Teacher Education Candidates in a Rural
Community College Setting

by

Alice Faye Sanders

May 2019

A Dissertation submitted to the Education Faculty of Lindenwood University in
partial fulfillment of the requirements for the degree of
Doctor of Education
School of Education

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This Dissertation has been approved as partial fulfillment
of the requirements for the degree of
Doctor of Education
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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

Full Legal Name: Alice Faye Sanders

Signature:  Date: 5-7-19

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Abstract

Teacher shortages exist across the nation, with greater shortages in middle school and secondary education (Center for Public Education, 2016). The purpose of this study was to determine the factors and barriers presented to teacher education candidates affecting the selection of their teacher education degrees in a rural community college setting. The research questions were designed to use quantitative survey questions administered to the teacher education candidate population of ABC College. Qualitative interview questions were used to gather data from the Director and Assistant Director of Enrollment Services/Student Development at ABC College. As a result of data analysis, misconceptions were identified regarding the existence and design of Teacher Cadet and Grow Your Own Teacher programs within the rural community college setting. Additionally, data indicated identifiable factors and barriers to the degree selection of aspiring teacher education candidates.

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Chapter One: Introduction

In 1895, John Dewey stated, “Education is, and forever will be, in the hands of ordinary men and women” (as cited in Goldstein, 2015, p. 9). Ordinary educators flee the classroom annually due to lack of student respect, societal distrust, lack of teacher efficacy, and political pressure (Paufler & Amrein-Beardsley, 2016). Teacher shortages at the middle and high school levels have been widely publicized for more than a decade (Paufler & Amrein-Beardsley, 2016). According to the Center for Public Education (2016), the enrollment decrease within traditional teacher preparation programs correlates to a decrease of approximately 260,000 professionals available to public-school districts (p. 5).

To date, one solution to the shortage of middle and high school teachers has been the initiation of alternative certification (Dittfurth, 2015). Alternative teacher certification by design makes it less cumbersome for individuals identified as talented within a specific discipline to acquire teaching credentials to enter the public-school classroom (Lincove, Osborne, Mills, & Bellows, 2015). A second initiative to meet the shortage of teachers across the nation includes Teacher Cadet or Grow Your Own Teacher (GYOT) programs (Learning First Alliance, 2017).

Teacher Cadet or GYOT programs are implemented during the junior or senior year of a student’s high school career (Missouri Department of Elementary and Secondary Education [MODESE], 2016). High school juniors or seniors are identified as potential teacher education candidates and are then chosen by students in younger grades and to assist teachers with managerial duties (Learning First Alliance, 2017). Grow Your Own Teacher programs mirror Teacher Cadet programs by design; however, GYOT

Programs contain a contractual component whereby potential teacher education candidate participants agree to return to the participating district as a beginning teacher in exchange for scholarships or tuition reimbursement (Center for Public Education, 2016).

The shortage of qualified middle school and high school teachers is heightened within rural public-school districts due to the existence of higher education deserts (Hillman & Weichman, 2016). According to Hillman and Weichman (2016), education deserts exist within communities where higher education opportunities are limited or nonexistent. Two conditions define an education desert: zero colleges or universities nearby, or only one community college as a public institution nearby (Hillman & Weichman, 2016).

One component of education deserts is rurality (Hillman & Weichman, 2016). Education deserts are drawn upon socioeconomic lines based on race, poverty, and finite resources (Hurwitz, Smith, & Howell, 2015). The existence of education deserts in rural communities symbolizes the significance of place and contributes to the shortage of qualified middle school and high school teachers (White, 2016). Gruenewald (2003) determined, “A theory of place is the concern with quality of human-world relationships, and we must first acknowledge that places themselves have something to say” (p. 624).

For decades, researchers have proven distance and geography play a large role in the college enrollment decisions of students (Hurwitz et al., 2015). According to Hillman and Weichman (2016), 57.4% of incoming freshman attending public four-year colleges enroll within 50 miles of their permanent homes (p. 2). In areas deemed education deserts, the opportunities for college choice are limited or non-existent (Hillman & Weichman, 2016).

Continued challenges are presented as demonstrated by middle school and high school teacher shortages due to the absence of understanding of cultural norms present in rural areas (Zeichner, 2014). Conventional attitudes, isolation, and poverty are examples of the cultural norms present in rural areas (Slama, 2004). Goodwin and Kosnik (2013) asserted teachers cannot teach what they do not understand; teachers who are not assimilated into the culture of rurality may not be effective with rural students.

Background of the Study

Traditional teacher preparation programs have long been responsible for the creation of the nation's teachers (Goldstein, 2015). Institutions of higher education have been charged with instilling philosophical and pedagogical knowledge to aspiring teacher education candidates in order to produce students for the industrial age (Noddings, 2016). As teacher shortages in middle school and high school grade levels became apparent in the early 1980s, alternative certification programs came into fruition (Jange & Horn, 2017).

In 1983, a northeastern state became the first to create an option to teacher certification through an alternative pathway (Jange & Horn, 2017). Since its inception, alternative certification has reached its pinnacle at one of every five new teachers entering the classroom. According to Jange and Horn (2017), programs such as Teach for America and New York City Teaching Fellows bring talented and passionate leaders to critical-need subject areas and critical shortage areas.

In January 2013, the Indiana State Board of Education revised Rules for Educator Preparation and Accountability to include a Career Specialist permit (Renga, 2015). The Career Specialist permit allows someone with a Bachelor of Arts, who graduates with a

3.0-grade point average on a 4.0 scale, to become a fully licensed teacher at the middle or high school education level. Opponents of the newly created permit pointed out that applicants may apply with any college degree and 6,000 clock hours in a related subject (Renga, 2015). Applicants are required to complete courses in pedagogy within two years of obtaining the permit (Renga, 2015).

What are the conditions that spur alternative certification programs? According to the American Association of State Colleges and Universities (2016), the U.S. Department of Education data suggest the shortage of qualified elementary education majors, middle school education majors, and high school education majors will climb by 14% between 2010 and 2021 (p. 6). Policymakers and public-school districts have continually searched for alternatives to meet the shortages (American Association of State Colleges and Universities, 2016).

Additionally, colleges and universities have cited specific challenges to current university-based teacher preparation programs as fewer students pursue careers in education (American Association of State Colleges and Universities, 2016). These challenges include the high cost associated with the choice of education as a degree path; ineffective recruitment of aspiring teacher education candidates; limited retention of diverse teacher candidates within teacher preparation programs; and continued criticism of teaching as a profession from policymakers, the media, and society (American Association of State Colleges and Universities, 2016). According to Andrews, Richmond, and Stroupe (2017), there continues to be no shortage of political influence on education.

Teacher preparation program regulations released in October 2016 by the U.S. Department of Education underscored the accountability of P-12 student success as a metric of teacher preparation programs (Andrews et al., 2017).

Federal data indicate a steady decline of 31% enrollment in teacher preparation programs between 2010 and 2014 (United States Department of Education [USDOE], 2016b, p. 12). College students are dismissing the profession of teaching citing lack of autonomy, increased pressure for performance, ineffectiveness within the classroom, and a perceived low base of pay (American Association of State Colleges and Universities, 2016). Retention in traditional university-based teacher preparation programs is further crippled by the high cost of majoring in education (Osam, Bergman, & Cumberland, 2017).

According to the Missouri Department of Elementary and Secondary Education (MODESE) (2015), students in traditional teacher preparation programs must complete a battery of standardized tests throughout their academic careers. Under the Missouri Educator Gateway Assessment umbrella implemented in 2015, students must complete a series of standardized tests (MODESE, 2015). Costs associated with the series of tests are approximately \$200 to \$300 (MODESE, 2015, p. 2).

Adding to the compilation of factors that deter college students from pursuing teacher education as a profession is diversification of the general population of the United States (USDOE, 2014). Traditional teacher preparation programs are continually scrutinized to increase diversity within their teacher education candidate pools (Ravitch, 2016). Many teacher preparation programs find themselves located within homogenous communities with limited pools of diverse candidates (Osam et al., 2017). In other areas,

testing cost factors have limited institutional abilities to recruit a diverse candidate base (American Association of State Colleges and Universities, 2016).

According to Akiba and LeTendre (2009), university teacher preparation programs continually seek ways to improve their curriculum and design. Policymakers, the media, and society as a whole play a pivotal role in setting the stage for mandated change to teacher preparation programs (Akiba & LeTendre, 2009). Public institutions are held accountable through financial contributions based upon both state and federal oversight (Andrews et al., 2017).

While private institutions may not receive federal or state compensation for their overall enrolled student population, their teacher preparation programs must be accredited by the same government oversight that applies to public institutions (MODESE, 2015). According to Andrews et al. (2017), society as a whole does not recognize nor reward the profession of teaching. Public-school district standardized test scores publicized as accountability data amplify the vilification of the teaching profession and public-school systems (Andrews et al., 2017). Cochran-Smith, Stern, Sanchez, Miller, Keefe, and Baker (2016) reported the continual political churn within both state and federal government policymakers routinely point toward both public-school teacher and teacher preparation programs as the instrument of change pivotal to the success of public-school districts.

According to Bailey (2016), critical public opinion of public-school districts and the teachers they employ, rural barriers to higher education for student's post-high school, continual declining enrollment within teacher preparation programs, and the lack of a diversified aspiring teacher education candidate pool are continual challenges faced

within higher education institutions. Further exemplified is the critical shortage of qualified middle school and high school teachers and the struggle to retain beginning teachers in rural school districts (USDOE, Office of Postsecondary Education, 2014).

Education deserts that exist within rural communities often limit aspiring teacher education candidates' choices regarding the selection of middle school and high school education degrees (Hillman & Weichman, 2016). The participating institution in this study, hereafter referred to as ABC College, is a community college in rural southeastern Missouri. The ABC College serves approximately 3,500 students with 55% of those students enrolled on a full-time basis.

Conceptual Framework

The significance of *place* in an individual's life guided this study. McClay and McAllister (2014) established the importance of place in their anthology of essays by scholars and historians. Consciousness of an individual's place is a core concept within environmental psychology (Allen, 2014). Significance of place proposes that an individual's identity forms based upon environmental factors such as cultural norms (McClay & McAllister, 2014). The House of Lords (2016) determined an individual's quality of life, prosperity, well-being, and happiness are influenced by the individual's concept of place in his or her environment.

Significance of place is demonstrated through the development of essential components of an individual's identity, reinforcing the individual's feelings of security and belonging (Entrikin, 1991). Developing an attachment to place grows from routines and experience and is strengthened through duration (Gordon, 2011). However, Gordon

(2011) determined the quality and intensity of an individual's experiences have more significance in place attachment than does duration of time.

Maslow proposed individuals must satisfy basic physiological and biological needs of air, food, drink, shelter, and warmth (Cannon, 2013). Fulfillment of biological and physiological needs allows the individual to satisfy safety needs of security, order, and stability (Cannon, 2013). Love and belongingness, friendship, intimacy, trust, and acceptance may only be realized upon the satisfaction of safety needs (Petty, 2014).

Bria, Spanu, Baban, and Dumitrascu (2014) found while accomplishment of basic needs of security and belongingness leads to increased performance, the lack thereof could result in a professional syndrome referred to as burnout. Maslach authored the Maslach Burnout Inventory (Maslach, Jackson, Leiter, Schaufeli, & Schwab, 2016). Maslach's Burnout Inventory is the most widely used research measurement within the field of burnout research (Maslach et al., 2016). Burnout is described as a three-dimensional framework comprised of emotional exhaustion, depersonalization, and professional efficacy (Maslach et al., 2016). Maslach's inventory was designed to measure the burnout syndrome of human services professionals; the inventory was then later revised to accommodate educators (Bria et al., 2014).

Statement of the Problem

Existing shortages in acute areas currently exist in many rural school districts located within education deserts, especially in the middle school and high school grades (American Association of State Colleges and Universities, 2016). Magnifying the deficit of qualified middle school and high school teachers in rural school districts are the challenges faced by colleges and universities to recruit and prepare highly qualified

middle and secondary teachers to fulfill the needs of school districts (Center for Public Education, 2016). Deepening the challenge for colleges and universities to recruit and prepare future educators is the ever-increasing focus on accountability (Cochran-Smith et al., 2016). According to Cochran-Smith et al. (2016), teacher education preparatory programs have become political fodder for both state and federal policymakers with the institution of the following initiatives: the U.S. Department of Education Higher Education Act; the Council for Accreditation of Educator Preparation (CAEP); the National Council for Teacher Quality (NCTQ); and a teacher assessment measurement developed at Stanford University Center for Assessment, the edPTA.

Limited literature is available about the relationship between rural education deserts and the preparation of qualified middle and high school teachers (Andrews et al., 2017). Education deserts have been identified in rural areas where no four-year higher education institutions exist or only one community college exists (Hurwitz et al., 2015). This study focused on ABC College, identified within an education desert encompassing nine rural counties (see Table 1).

Retention of qualified secondary teachers has been identified as a component of teacher shortages (American Association of State Colleges & Universities, 2016). The Learning First Alliance (2017), through collaboration with the National School Board Association for Public Education indicated in 2016 initial teacher certification applications had dropped by 20% over five years, with the most significant drop within middle school and secondary education (p. 4).

Table 1

ABC College District Counties

County	Population
County A	42,666
County B	30,119
County C	29,369
County D	13,564
County E	13,296
County F	12,306
County G	12,243
County H	6,275
County I	6,169

Note: Taken from survey responses.

Purpose of the Study

The purpose of this study was to identify the following: barriers to the success of aspiring teacher education candidates in a rural education desert, the impact of Grow Your Own Teacher/Teacher Cadet programs, and the four-year degree selection of aspiring teacher education candidates within the rural community college setting. Characteristic areas focused upon within this study included the various components which exist within education deserts, the characteristics of rural culture, the impact of Grow Your Own Teacher/Teacher Cadet programs, the effect of place consciousness, and student recruitment as related to degree choices of aspiring teacher candidates.

Research questions. The following research questions guided the study:

1. What are the factors of choice for aspiring teacher education candidates when choosing among Early Childhood Education, Elementary Education, Middle School Education, and High School Education teaching degrees?
2. What percentage of aspiring teacher education candidates at ABC College participated in a Teacher Cadet or Grow Your Own Teacher program during high school?
3. What are the barriers to completion of a bachelor's degree for teacher education students in rural areas who wish to complete a degree in Early Childhood, Elementary, Middle School, and Secondary Education?
4. How does ABC College recruit students to meet the need for teachers in education desert areas?

Significance of the Study

The findings of this study revealed barriers to successful degree completion for aspiring teacher education candidates. The impact of GYOT programs was determined, and the factors of choice for four-year degree selection of teacher education candidates were identified. While alternative certification and Teacher Cadet or GYOT programs have existed for years, teacher shortages still continue to plague the nation (USDOE, Office of Postsecondary Education, 2014). Declining enrollment in traditional teacher preparation programs coupled with high rates of teacher attrition contribute to continued teacher shortages (Marksbury, 2017).

Numerous urban-centric studies have been conducted to identify the barriers that contribute to the success or failure of urban students seeking access to higher education (Center for Public Education, 2016). However, current literature is lacking regarding the

success of students seeking higher education within rural areas identified as education deserts (Cannon, 2013). Likewise, multiple studies regarding the institution and effect of GYOT programs have been conducted within urban public-school systems (Center for Public Education, 2016). Grow Your Own Teacher programs were found to be largely unstudied in rural public-schools (Center for Public Education, 2016).

Definition of Key Terms

For the purposes of this study, the following terms are defined:

Alternative certification. Alternative certification is a process by which an individual is awarded a teaching license without the benefit of a traditional teacher preparation program (Dittfurth, 2015).

Burnout. Burnout is characterized by emotional exhaustion, depersonalization, and decreased professional efficacy (Maslach et al., 2016).

Distance elasticity. Distance elasticity indicates the further away a potential student is from an institution of higher education, the less likely he or she will enroll (Hurwitz et al., 2015).

Education deserts. Education deserts are areas without any colleges or universities located nearby, or with only one public broad-access community college (Zalaznick, 2016).

Funds of knowledge. Funds of knowledge include historically accumulated and culturally developed bodies of knowledge (Zalaznick, 2016).

Grow Your Own Teacher programs. Grow Your Own Teacher programs include partnerships among states, districts, and teacher preparation who work together and “grow” local residents to become teachers (Skinner, Garreton, & Schultz, 2011).

Place consciousness. Place consciousness is based upon the combination of physical components of a location and the personal and human connections that exist (Zeichner, 2014).

Rural brain drain. Rural brain drain is defined as losing the most talented young people in a geographical area to urban areas (White, 2015).

Rural standpoint. Rural standpoint is the intersection of a group's various positions, gender, class, and rurality (Roberts, 2014).

Teacher attrition. Teacher attrition is the rate at which new teachers leave the profession (Podolsky, Kini, Bishop, & Darling-Hammond, 2017).

Teacher pipeline. The teacher pipeline is an organized system for the recruitment, training, and retention of teachers (Bell & Aldridge, 2014).

Teacher retention. Teacher retention focuses on how factors such as school diagnostics and the demographics of teaching affect whether teachers stay in the schools, at which they practice, move to different schools, or leave the profession before achieving retirement (Zhang & Zeller, 2016).

Limitations and Assumptions

The following limitations were identified in this study:

Timeframe. This study was conducted during one academic year at a rural community college determined to be within an education desert. Data for this study were collected during one academic semester with a duration of 16 weeks. Survey data were collected over a 30-day period during the fall semester.

Survey response. Data collected via the survey were limited to those aspiring teacher education candidates who chose to respond to the survey. Survey response rate

as a percentage was 14%. Non-response and response bias must be considered as limitations to this study.

Sample demographic. The survey sample for the study was comprised of all aspiring teacher education candidates enrolled at ABC College during the 2018-2019 academic year. ABC College is a rural community college located within an education desert (Zalaznick, 2016). ABC College is an open-access college with a 100% acceptance rate.

Aspiring teacher education candidates at ABC College must adhere to the admission policies of ABC College, successfully complete introductory college writing with a grade of C or better, and maintain a cumulative 2.75-grade point average for admittance to the ABC College teacher preparation program. Survey data collected during the study reflected both male and female aspiring teacher candidates enrolled in Early Childhood Education, Elementary Education, Middle School Education, or Secondary Education.

The sample for this study was obtained from only one rural community college. ABC College is the only institution of higher education available to students within a 17-district rural community area. No higher education institutions with similar socioeconomic and cultural demographics exist within the research area.

Instrument. Quantitative data for this study were obtained via a survey created by the researcher. Survey questions for this study were designed to gather data to answer the research questions of this study. Questions included in the survey were planned with subject-matter experts using careful design to minimize bias. Questions included in the

interviews were created by the researcher. Interview questions were designed to gather data to answer the research questions of this study.

The following assumptions were identified in this study:

The accuracy of the survey data was based upon the integrity of the survey respondents, the Assistant Director of Enrollment Services/Student Development, and the Director of Enrollment Services/Student Development. It was assumed all interview respondents, the Assistant Director of Enrollment Services/Student Development, and the Director of Enrollment Services/Student Development were truthful and forthcoming in their responses to questions administered during this study.

Information provided by aspiring teacher education candidates, the Assistant Director of Enrollment Services/Student Development, and the Director of Enrollment Services/Student Development were assumed to be accurate and unbiased.

Summary

Public education faces ever-increasing accountability to the public and to the policymakers who govern accreditation and funding (Andrews et al., 2017). Adding to the pressures is the problem of retention of qualified teachers, namely middle and high school teachers in the rural community setting (Center for Public Education, 2016). In addition, teacher shortages abound within rural public-school districts (Center for Public Education, 2016). Remedies for the challenges facing the nation's education system have been explored through alternative teacher certification programs and teacher candidate recruitment through Teacher Cadet or GYOT programs; however, teacher shortages and teacher attrition still plague the educational system (Marksbury, 2017).

Current research on teacher retention and college student success has focused on the struggles of urban areas; little research has been offered on rural education deserts and the barriers they present to a student's pursuit of higher education (Kline & Walker-Gibbs, 2015). This mixed-methodology study included an examination of rurality, education deserts, Teacher Cadet/Grow Your Own Teacher programs, and student recruitment to determine their effect on aspiring teacher candidates' selection of four-year education degrees at ABC College.

Chapter Two of this study includes a discussion of the conceptual framework of the study, the significance of place, as well as the literature review for the study. The Chapter Two literature review includes topics such as rurality and its role in the identities of aspiring teacher education candidates, education deserts and the limitations and effects on aspiring teacher education candidates, the significance of place consciousness in the formation of an individual's identity, the design and implementation of Teacher Cadet/Grow Your Own Teacher programs, and teacher preparation programs.

Chapter Two: Review of Literature

Retention of teachers within public-school districts has been identified as crucial to the success of students within the public-school arena (Center for Public Education, 2016). However, 8% of beginning teachers leave within the first five years of teaching, with higher attrition rates reflected in low-income schools (Pannell, 2016, p. 9). While attrition rates within rural public-schools reflect the national average, rural schools represent the largest percentage of schools employing teachers in areas outside their licensure certification (Center for Public Education, 2016).

In addition, traditional teacher preparation programs continue to experience declining enrollment, while at the same time teacher shortages exist within disciplines identified as highly qualified and rural (Zhang & Zeller, 2016). Efforts to address the need for more highly qualified teachers in the areas of science, technology, engineering, and mathematics (STEM) has fostered partnerships among higher education institutions, state departments, and public-school systems (Marksbury, 2017). Additionally, state departments of education have instituted adaptive licensure areas for alternative certification of specific individuals to enter the field of education (Learning First Alliance, 2017). According to Gist, Bianco, and Lynn (2018), both urban and rural public-school districts have initiated Teacher Cadet and GYOT programs in the hopes of identifying, mentoring, and retaining qualified aspiring teacher education candidates. Even considering the efforts of all stakeholders, teacher shortages exist in STEM areas and most particularly within rural public education settings (Center for Public Education, 2016).

Literature reviewed in Chapter Two on the components of rurality may serve to explain the cultural norms and limitations associated with rural communities. Education desert research specifies a frame of reference for conditions necessary to categorize an institution of higher education as a function of education deserts. Place consciousness establishes the foundation for the conceptual framework of the study. Teacher Cadet and GYOT program literature stipulates a lens for explanation of the impact of programs on the recruitment of aspiring teacher education candidates. Teacher preparation literature provides a framework for the contrast of teacher shortages within rural education deserts as opposed to their urban counterparts.

Conceptual Framework

The significance of connectedness can be placed only behind safety and basic physiological needs, as described by Maslow (Gao & Taormina, 2013). Tradition no longer encompasses an individual's identity, but attachment to an individual's place within his or her environment is the basis for identity (Gordon, 2011). According to Gordon (2011), the physical, social, and cultural environment an individual experience, along with human connections formed and maintained, provide the foundation of place significance.

Cultural and physical environments of rural communities help to establish place consciousness for the individual (Zalaznick, 2016). Historical experiences and cultural norms may develop what Zalaznick (2016) termed as funds of knowledge. These funds of knowledge may then be experienced as cultural wealth (Zalaznick, 2016). An individual's utilization of funds of knowledge in correlation with his or her concept of place consciousness may provide satisfaction, intrinsic motivation, and personal well-

being (Zalaznick, 2016). Funds of knowledge, cultural wealth, and place consciousness experienced by aspiring teacher education candidates in a rural community college setting provided the conceptual framework for this study. This conceptual framework established the foundation for the understanding of barriers experienced by aspiring teacher education candidates and the factors of choice when these students choose their degree areas.

Rurality

Rurality may be defined as a particular set of cultural norms or characteristics that are centric to rural communities (Koricich, 2014). The Department of Housing and Urban Development categorized a county as rural when not located in a Metropolitan Statistical Area and with a total county population less than 49,999 (Shoulders & Krei, 2016, p. 12). In the United States, a Metropolitan Statistical Area is a geographical region with a high population density and close economic ties that connect the region (Shoulders & Krei, 2016). The Center for Public Education (2016) found a critical factor in the categorization and responsiveness of rural communities is that they are essentially nonmetropolitan areas.

Corbett (2015) described rurality as a positional space believed to be receding in comparison to the modernity of urban areas. Conditions associated with rural counties include deep and persistent poverty, categorization as an education desert, and limited financial and/or academic resources within public-school districts located within the county (Center for Public Education, 2016). Existing literature depicts rural culture as banal, homogenous, and problematic (Wieczorek & Manard, 2018).

While poverty is often correlated with urban areas, poverty exists at higher rates and is more persistent in rural areas, commonly referred to as generational poverty (Center for Public Education, 2016). Azano and Stewart (2016) described rural areas as communities perceived to be plagued, peripheral, and isolated. In addition, Corbett (2015) found societal perceptions of rurality are defined based upon urban frames of reference. Urban areas are lauded with educational opportunities, plentiful public transportation, opportunities in business, and social interactions (Center for Public Education, 2016). In contrast, rural areas may rely on natural resources, struggle to sustain business opportunities, and lack educational opportunities (Wieczorek & Manard, 2018).

Historically, in the 1700s, approximately 90% of Americans lived within rural areas (Estes, Estes, Johnson, Edgar, & Shoulders, 2016, p. 10). By 1920, less than 50% of Americans resided in rural areas (Estes et al., 2016, p. 10). According to Green (2013), only 15% of Americans now live within a rural area. While the magnitude of rural brain drain has varied throughout the decades, the pattern of decline has remained consistent (Roberts, 2014). Mediocre gains have at times been represented on the fringe areas of urban growth, where housing costs in rural areas have been determined to be the enticement for peripheral living (Friesen & Pure-Stephenson, 2016). A proportion of modest peripheral population gain has been attributed to the diversification of rural areas through the growth of minority population (Green, 2013).

Rural brain drain within communities has not been lost on public education. According to Marksbury (2017), rural districts within the United States face constraints which are frequently overlooked when viewed through the lens of national data-based

research. The Learning First Alliance (2017) indicated teacher shortages are not evenly spread across the United States. Statistically, the greatest number of shortages are reflected in the southern portion of the nation (Learning First Alliance, 2017).

Gagnon and Mattingly (2018) found rural schools have amplified challenges to success when compared to urban schools; namely, higher allocated costs per pupil, lower starting salaries for beginning teachers, and the largest representation of teachers who are teaching outside their field of licensure certification. The Learning First Alliance (2017) found beginning teachers earn 17% less than their public sector equivalents (p. 23).

Various metrics have been offered by policymakers to measure teacher quality: college selectivity, standardized test performance, degree selection, and status of licensure certification (Center for Public Education, 2016). Highly qualified teachers were found to be less likely to return to rural areas to teach post-graduation (Center for Public Education, 2016). While teachers within rural districts were found to have more years of experience and were less likely to have gained licensure through alternative certification, these same teachers were less likely to have pursued post-graduate degrees (Center for Public Education, 2016).

Social disorganization theory suggests an individual's connectedness to his or her environment may be influenced by irregular suggestions of disorder (O'Brennan, Pas, & Bradshaw, 2017). O'Brennan et al. (2017) found physical disorder may lead to burnout and may influence a teacher's ability to form connected relationships. Aspects of rural school districts such as deteriorating infrastructures, large classroom sizes, and minimal financial resources may be identified as components of physical disorder (O'Brennan et al., 2017).

While rural public-schools may find it difficult to fill positions deemed as highly qualified, such as STEM and English language learner teachers, this continued struggle to find qualified teachers may affect current staff (Center for Public Education, 2016).

Current research abounds on the plight of recruitment and retention of qualified teachers in urban school districts (Corbett, 2015). However, there are limited rural-centric studies (Heffernan, Fogarty, & Sharplin, 2016). Estes et al. (2016) found of the 1,659 undergraduate students who came from a rural background, only 45.1% lived in a rural area six to seven years following their university graduation (p. 11). Continued out-migration from rural areas has been deemed rural brain drain (Estes et al., 2016).

As determined by Azano and Stewart (2016), a rural deficit view exists both within educational literature and within cultural contexts of aspiring teacher education candidates. The Center for Public Education (2016) found rural schools possess unique challenges often misunderstood outside the rural community lens. According to Green (2013), current research regarding teacher preparation has been urban-centric, without consideration to rurality. Klasnik, Blagg, and Pekor (2018) defined a rural education desert as lacking local educational access for students, having limited cost-effectiveness, and presenting limited admissions barriers. Additionally, the Center for Public Education (2016) pointed to the rise of rural diversity; namely, the influx of English language learners as a contributing factor to the obstacles faced by public-school districts located in rural counties. Furthermore, Green (2013) postulated continued disregard of rurality may result in the disappearance of rural communities.

Education Deserts

According to Hillman and Weichman (2016), place plays a significant role in determining if an individual seeks post-secondary education following high school graduation. McClay and McAllister (2014) determined individuals who live within rural areas may be deemed as place-bound, lacking the ability to leave the rural area. Adding to the definition of place-bound, individuals may be the factor of persistent poverty (McClay & McAllister, 2014).

While rural brain drain has consistently occurred for decades, individuals who live within impoverished rural communities are additionally affected by the lack of educational opportunities (Osam et al., 2017). Particularly significant is the role of rurality in terms of place significance and the pursuit of higher education (Zalaznick, 2016). Hillman and Weichman (2016) found geography was not the sole deterrent of a student's pursuit of higher education; institution type, race, and the student's ethnicity played a role as well.

The necessary factors present for a rural area to be determined an education desert have been debated in literature with one exception—geographical distance from educational opportunities (Pendola & Fuller, 2018). Hillman and Weichman (2016) defined an education desert as an area where students would be required to drive 50 miles or more to complete a four-year degree in higher education. Policymakers have pointed toward online learning as a possible answer to the needs of rural college students pursuing higher education who live within education deserts (Center for Public Education, 2016). However, many rural areas struggle with reliable and affordable internet infrastructure (White, 2016).

The further an individual lives from an institution of higher education, the less likely he or she is to pursue higher education (Zalaznick, 2016). Distance from an institution of higher education may be associated with higher transportation costs, either through the necessity to purchase a vehicle or the cost or lack of public transportation (Azano & Stewart, 2016). Additionally, students within education deserts forced to drive long distances to and from a higher education institution may experience loss of work time which in turn adversely affects household income (Azano & Stewart, 2016).

Non-traditional students pursuing higher education may experience negative effects to their family dynamics with additional childcare costs or the difficulties of additional responsibilities due to long hours of absence from their regular household routine (Corbett, 2015). Moreover, while the classification of a county as rural has numerous contributing factors, a preeminent factor is a rural county's isolation from opportunities of post-secondary education access (Green, 2013). Zalaznick (2016) defined isolation from higher education opportunities as an education desert.

Education deserts are areas where there are no colleges or universities nearby and only one community college is accessible (Hillman & Weichman, 2016). Friesen and Pure-Stephenson (2016) found potential college students within rural education deserts cite various obstacles to the consideration of higher education, particularly distance and cost. For many traditional rural college students within education deserts,

Friesen and Pure-Stephenson (2016) cited the potential necessity of moving from their rural communities to complete a four-year degree as a significant deterrent to college completion. Most importantly, Friesen and Pure-Stephenson (2016) found additional costs associated with distance are significant to the decision to pursue a college

degree. Students who grow up in persistent poverty idealize high-paying jobs which will elevate them away from poverty (Learning First Alliance, 2017).

Potential college students from rural education deserts anticipate costs of moving from home, establishing a residence in the university/college community, and the possible necessity of purchasing a vehicle as a hindrance to the pursuit of a college degree (Hillman & Weichman, 2016). Hillman and Weichman (2016) found 40% of college freshmen attend college within 50 miles of their childhood home, with one in four of those freshmen considered nontraditional students (p. 8). Nontraditional students are older, oftentimes have established a family, and are maintaining a full-time job (Hillman & Weichman, 2016). The Center for Public Education (2016) established limited attention is placed on rural education deserts particularly in the area of policy of academia.

Place Consciousness

As stated by Azano and Stewart (2016), mankind forms personal identity from various influences: an individual's gender, one's race, socioeconomic status, and place. Wieczorek and Manard (2018) determined a sense of place is experienced within rural communities. The term *sense of place* is defined as a strong coherence deeply associated by inhabitants of a community (Wieczorek & Manard, 2018). Wyatt (2015) concluded individuals contextualize their identities and sense of place from personal and cultural experiences. Cultural norms associated with rural communities contribute to the sense of place evidenced within many rural areas (Azano & Stewart, 2016).

While a sense of place was not identified as exclusive to individuals connected within a rural community, individuals within rural communities were identified as more

likely to experience connectedness to their rural community than were individuals within urban areas (Koricich, 2014). Rural communities often foster a sense of place through the mere definition of the limited resources and opportunities offered within rural communities (McClay & McAllister, 2014). O'Brennan et al. (2017) found the less personally connected an individual feels to his or her surroundings, the more likely the individual is to experience dissatisfaction within the environment. Furthermore, failure to form strong relationships and connections with one's surroundings may reduce commitment to continuing within the environment, particularly within a rural community (O'Brennan et al., 2017).

Piaget proposed the theory of constructivism, which places significance on an individual's past experiences and environment as the basis for forming future meaning (Wilkinson & Hanna, 2016). Aspiring teacher education candidates whose prior experiences evolved from the cultural norms of rurality may then assign meaning within their future classrooms based upon these experiences (Moll, Amanti, Neff, & Gonzales, 1992). Adding to Piaget's theory of constructivism, Rodriquez (2013) studied the concept coined funds of knowledge.

In premise, Rodriquez (2013) established an accumulation of historical and cultural indicators identified as funds of knowledge and deemed to be essential for an individual's well-being. The historical and cultural indicators of limited exposure to social influences, miniscule educational opportunities, and results of persistent poverty may be indicators of rural funds of knowledge (Rodriquez, 2013). Building upon Piaget's theory of constructivism and Rodriquez's (2013) reference to funds of knowledge, Azano and Stewart (2016) found aspiring teacher education candidates

whose personal identities assimilated with a rural context perceived themselves to be better prepared for the challenges of rurality than their urban counterparts. In addition, Wyatt (2015) found aspiring teacher education candidates whose personal identities were formed within the rural community setting felt a connectedness between themselves and the potential rural community in which they would teach.

Milatz, Luftenegger, and Schober (2015) found teachers identify a need for relatedness supported by the existence of student-teacher relationships as the framework for success within their chosen field. Relatedness was indicated as a central basic need for self-determined motivation (Milatz et al., 2015). Individuals who possessed a sense of place with their rural communities along with a connectedness to the communities in which they planned to teach indicated a level of intrinsic motivation for the success of their future classrooms (McClay & McAllister, 2014).

Individuals who were unable to identify a connectedness to their future teaching environments experienced dissonance (Moll et al., 1992). The dissonance between a teacher's cultural experience and the cultural experiences of his or her students may be erased utilizing a constructivist approach to instruction (Villegas & Lucas, 2002). A teacher's connectedness within the environment and relatedness to students were found to be an indicator of the teacher's wellbeing both personally and professionally (Milatz et al., 2015).

Cochran-Smith and Villegas (2015) found the most important responsibility of programs designed for the preparation of teachers is the incorporation of the understanding of connectedness and relationships within a particular environment, namely sociology. Aspiring teacher education candidates whose preparation includes an

understanding of the importance of connection to one's environment, the meaning of relationships with students, and the effects of rural cultural norms can be instruments of social change and social justice within their communities (Cochran-Smith et al., 2015).

Grow Your Own Teacher

Establishing teacher education pipelines has been an ongoing goal of rural communities to combat the teacher shortages they experience. The Learning First Alliance (2017) indicated resourceful partnerships must be built among teacher preparation programs, public-school districts, and state agencies to bolster an effective teacher pipeline. One such partnership identified was GYOT programs (Learning First Alliance, 2017). Researchers agree GYOT programs are still in their infancy and limited data have been collected regarding their existence let alone their effectiveness. Grow Your Own Teacher programs can be categorized in one of two ways: philosophically or operationally (Skinner et al., 2011).

Philosophically designed, GYOT programs are intended to diversify the teaching population by recruiting aspiring teacher education candidates of all races and ethnicities (Center for Public Education, 2016). Grow Your Own Teacher programs, created through operational design, aim to recruit top teachers and draw them to areas oftentimes overlooked as employment opportunities (Learning First Alliance, 2017). Additionally, these philosophical and operational designs are created to recruit aspiring teacher education candidates through either a pre-collegiate pathway or a community-focused design (Learning First Alliance, 2017).

Philosophical GYOT programs identify talented individuals within community resources and recruit these individuals with a particular community focus (Toshalis,

2014). Community-focused GYOT programs have been implemented by both community block grants and progressive traditional teacher preparation programs (Toshalis, 2014). According to Toshalis (2014), many of these GYOT programs with community focus are themselves urban-centric and are focused on being conduits of social change.

Operational GYOT programs focus on pre-collegiate design (Learning First Alliance, 2017). Pre-collegiate focus is then categorized into selective recruitment or non-selective recruitment (Learning First Alliance, 2017). Selective recruitment pre-collegiate design is intended to recruit the highest achievers as well as home-grown students (Gist et al., 2018). One highly successful pre-collegiate selective program in South Carolina, the Center for Educator Recruitment, Retention and Advancement (CERRA), is a state-funded program located on the campus of Winthrop University (Learning First Alliance, 2017). According to the Learning First Alliance (2017), the CERRA boasts 39.4% of participants complete the program and enter the teacher education profession (p. 4). In 2015-2016, 32% of participants were non-Caucasian and 22% were male (Learning First Alliance, 2017, p. 4).

Pre-collegiate non-selective GYOT programs are initiated to recruit potential aspiring teacher education candidates based upon their service to the community, namely to youth services (Toshalis, 2014). Unlike their counterpart, pre-collegiate selective, pre-collegiate non-selective programs are not focused on selectively recruiting solely high academic excellence (Toshalis, 2014). Instead, these programs are focused on evidence of consistent community service and the potential for community leadership (Toshalis, 2014).

Gist et al. (2018) found academic, financial, and social supports are indicated in most GYOT programs. Supports offered to aspiring teacher education candidates in GYOT programs include tutoring services for both entrance and exit examinations, financial assistance toward licensure and certification, tuition reimbursement, scholarships, child care assistance, and stipends for transportation or other living expenses (Gist et al., 2018). Financial backers for the supports provided to aspiring teacher education candidates include private corporations, traditional institutions of higher education, community-based organizations, unions, school districts, federally funded initiatives, and private foundations (Gist et al., 2018).

Reauthorization of the Elementary and Secondary Education Act through Every Student Succeeds Act (ESSA) shined a light on new opportunities for states to leverage Title II Part A distribution federal funds for what many states are using for GYOT programs (Learning First Alliance, 2017). New opportunities under the ESSA allow for the expansion of funds used to support a comprehensive plan for human capital management (Learning First Alliance, 2017). Many states have initiated state-led as well as state-funded strategic plans that earmark dollars for GYOT programs (see Table 2).

More traditional GYOT programs originated to establish a partnership among traditional teacher preparation programs, state agencies responsible for teacher licensure, public high schools, and potential teacher education students (Skinner et al., 2011). Grow Your Own Teacher programs are used to identify potential teacher education candidates while students are still attending high school (MODESE, 2016). High school juniors or seniors who demonstrate an interest in the teaching field along with the desire to return to their rural communities to teach are identified by public-school

administrators, teachers, and counselors (MODESE, 2016). Upon identification, potential teacher education students enter an agreement to return to the sponsoring public-school system as a beginning teacher in exchange for scholarships and tuition reimbursement (Learning First Alliance, 2017).

Table 2

Current Grow Your Own States

State	Funding	Status
Illinois	State Funded	Active
Mississippi	Title II	In Strategic Planning
Missouri	Title II	In Strategic Planning
Tennessee	Grant Funded	Active
Washington	Private Funding	Active

Note. Adapted from Learning First Alliance, 2017.

According to Chiefs of Change (2016), 11 states have committed to the diversification of their teacher educator workforce by the year 2040 using resources identified within the ESSA and possible GYOT programs. Those states include Colorado, Connecticut, Illinois, Missouri, Mississippi, Nebraska, Pennsylvania, South Dakota, Tennessee, Virginia, and Wisconsin (Chiefs of Change, 2016). Educational researchers have pointed toward three areas for the support of GYOT programs: teacher retention within rural school districts, the creation of sufficient qualified teachers, and the development of rurally sociocultural teachers (MODESE, 2016). Data indicate one-third

of beginning teachers do not remain in the teaching profession after three years, at least one-half of current teachers leave the profession within five years, and nearly 60% of teachers return to teach within 20 miles of the school district from which they graduated high school (MODESE, 2016, p. 3).

The Center for Public Education (2016) found aspiring teacher education candidates who themselves completed their K-12 education within a rural community identified with the socioeconomic and academic barriers presented to rural students. O'Brennan et al. (2017) found teachers who believe they have the skillset needed to practice within their teaching environment are less likely to experience burnout and to remain in the profession long term. Establishing self-efficacy for aspiring teacher education candidates through GYOT programs may develop effective teacher education pipelines in rural communities (Center for Public Education, 2016). Previous research on school climate suggests a beginning teacher's self-efficacy and connectedness to community supports his or her perception of relatedness, and the relationships established become the most important factor of his or her success (O'Brennan et al., 2017).

The Center for Public Education (2016) found rural school districts statistically employ more beginning teachers annually than do urban school districts, especially in hard-to-staff positions of science, technology, engineering, mathematics, and English language learners. Pendola and Fuller (2018) pointed toward GYOT programs as a means to develop rurally significant sociocultural teachers.

Teacher Preparation

Students from rural areas are less likely to achieve a college degree than are their urban counterparts (Center for Public Education, 2016). The Center for Public Education

(2016) found, “62% of urban adults have attended at least some college, approximately 51% of rural students do not pursue any postsecondary education” (p. 14) (see Figure 1).

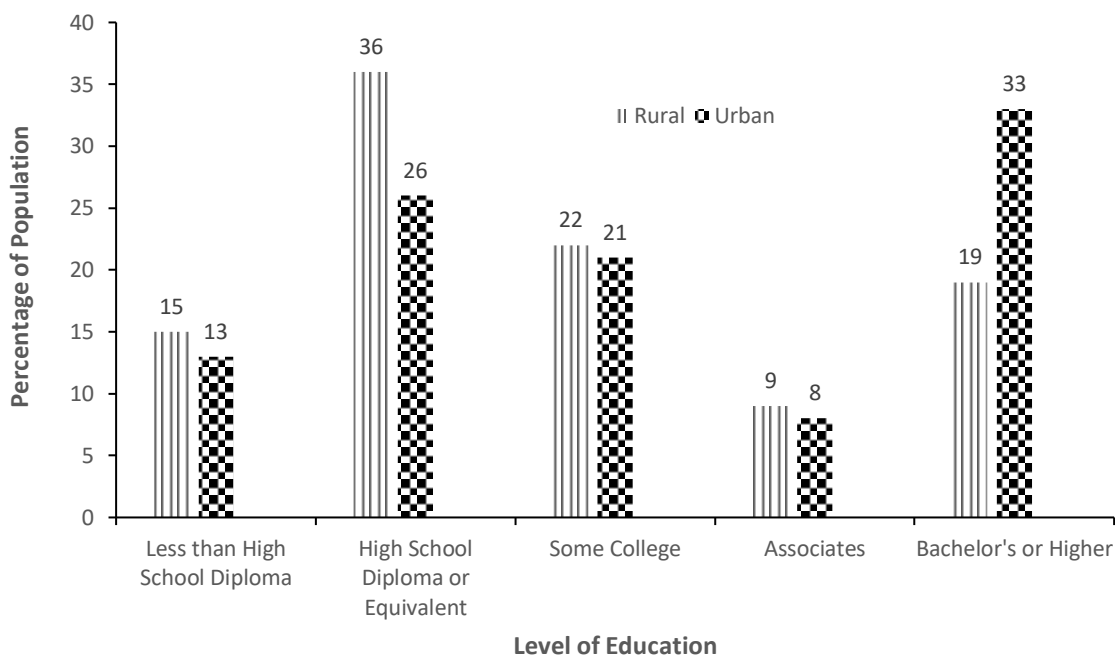


Figure 1. Educational attainment for adults 25 and up in the U.S. Adapted from “Fixing the Holes in the Teacher Pipeline: An Overview of Teacher Shortages” by the Center for Public Education, 2016. Copyright 2016 by the Center for Public Education.

Lincove et al. (2015) found traditional educator preparation programs have been designed around three curricula areas since the industrial age: human development, educational theory, and pedagogy. Traditional teacher education programs are viewed through both a public and governmental lens (Center for Public Education, 2016). Additionally, public institutions of higher education may be reliant on governmental funding to provide for the existence of their teacher education programs (USDOE, 2016a).

Enrollment in traditional teacher education programs has experienced a steady decline (Andrews et al., 2017). According to the American Association of State Colleges and Universities (2016), between 2008 and 2016, enrollment in traditional teacher education programs was down 23% (p. 3). Negative public view of teaching as a profession was cited as the number one reason potential college students are not enrolling in teacher education as a degree selection (American Association of State Colleges and Universities 2016).

Additional factors indicated in the AASCU's (2016) survey data were low wages, extensive budgetary cuts to public-schools, and lack of autonomy within the classroom. According to the Learning First Alliance (2017), between 2010 and 2015, there was a 35% reduction in enrollment in traditional teacher preparation programs (p. 10). Additionally, 8% of teachers trained through traditional teacher preparation programs left the profession early in their careers with significant numbers reflected through rural persistent poverty areas (Learning First Alliance, 2017, p. 10).

Gist et al. (2018) noted only 4% of the 1.9 million high school students who took the ACT expressed a desire to pursue teaching as a profession (p. 6). Additionally, 70% of those identified were Caucasian (Gist et al., 2018, p. 6). Researchers published in the 1990s and early 2000s identified more than 250 GYOT programs across the nation, but it is now estimated that less than half of those programs are still in existence (Gist et al., 2018, p. 15). Considering the limited research on GYOT programs and the lack of a consistent metric to measure the influence of the programs, their influence on the teacher education pipeline to traditional teacher preparation programs is unclear (Gist et al. (2018).

Conversely, alternative certification programs designed to prepare individuals for the teaching profession fall short in terms of traditional teacher preparation curriculum, human development, educational theory, and pedagogy (Aragon, 2016). Potential teachers completing alternative certification are treated as on-the-job trainees with discipline-specific candidates receiving a limited balance of educational theory, human development, and pedagogy coursework concurrent to teaching in the field (Lincove et al., 2015). Limited preparation associated with alternative certification programs correlates to increased attrition throughout teaching at two to three times the attrition rate of teachers who attended traditional teacher preparation programs (Learning First Alliance, 2017).

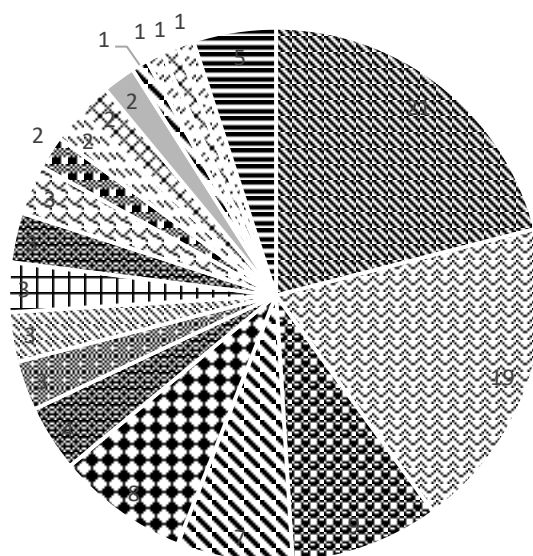
Alternative certification is viewed as a fast-track system to fill immediate teacher shortages when in reality it has created a “sink or swim” scenario (Learning First Alliance, 2017). Aragon (2016) found teacher shortages have impacted state teacher preparation program policy, certification licensure, and licensure transfer from state to state. In times of extreme teacher shortages, certification licensure is expedited and oftentimes altered (Aragon, 2016). However, when certification areas no longer reflect shortages, there has been no return to stringent licensure standards (Aragon, 2016).

One attempt to keep teachers in the classroom has been additional teacher education opportunities offered either through professional development or advanced degree completion programs designed to provide financial incentives to teachers who pursue a master’s degree or higher degree (Learning First Alliance, 2017). However, the opportunity for teacher postgraduate education drastically decreases when an area’s isolation increases, as with education deserts (Center for Public Education, 2016).

According to the Center for Public Education (2016), there is a 10% gap in the attainment of a master's degree when comparing urban and rural teachers (p. 15).

A means for countering postgraduate experience within public-schools has been high-quality professional development (Center for Public Education, 2016). Various indicators imply teachers within rural public-school districts may enter the classroom with a minimally selective educational base which may impact the academic growth of students (Center for Public Education, 2016). A deterrent for offering professional development opportunities within rural districts is their distance from universities and public providers (Center for Public Education, 2016).

While there is a nationwide teacher shortage, there is a definitive incongruity between the degree selection of aspiring teacher education candidates and the needs of public-school districts (AASCU, 2016). According to the AASCU (2016), elementary education majors' account for 21% of all undergraduate education majors (p. 6) (see Figure 2). Teacher shortages are identified in areas deemed as highly qualified including mathematics, science, engineering, and technology (Center for Public Education, 2016). Additionally, rural public-school districts report shortages in special education and discipline-specific areas within high school certification (USDOE, Office of Postsecondary Education, 2014).



- | | | |
|------------------------|-------------------|--------------------------------|
| ▣ Elementary Education | ▣ Non-Education | ▣ Special Education |
| ▣ Secondary Education | ▣ Early Childhood | ▣ English as a Second Language |
| ▣ General Education | ▣ Social Studies | ▣ ELA |
| ▣ Middle School | ▣ Math | ▣ Science |
| ▣ Music | ▣ PE | ▣ Multicultural |
| ▣ Health | ▣ Reading | ▣ Art |
| ▣ Curriculum | ▣ Other | |

Figure 2. Most popular education majors. Adapted from (USDOE, Title II, 2016a).

Summary

The fulfillment of an individual's social, physiological, and biological needs has been determined necessary for self-actualization (Gao & Taorminia, 2013). Deficiency in one's social, physiological, and biological needs leads to an inability to interact with others in a manner that provides for success (Petty, 2014). Aspiring teacher education candidates must proceed along the continuum of fulfillment of their own needs while

acquiring the skills to complete the competencies necessary to become effective educators (MODESE, 2016).

Rurality is based upon four dimensions: population, population density, the extent of urbanization, and distance to the nearest metropolitan area (Corbett, 2015).

Geographical areas determined as rural are often contributing factors to education deserts (Zalaznick, 2016). Place consciousness may be experienced in rural education deserts due to an individual's strong identification with the cultural norms of rurality (Wieczorek & Manard, 2018). Grow Your Own Teacher programs have been instituted within rural education deserts to meet the needs of rural public-school districts that struggle with teacher retention (Pendola & Fuller, 2018).

A review of literature focused on rurality, education deserts, place consciousness, Teacher Cadet/Grow Your Own Teacher programs, and teacher preparation as presented in Chapter Two. Chapter Three describes the methodology of the mixed-methods study to include: research design, study population, instrumentation, data collection, data analysis, and ethical considerations of the study.

Chapter Three: Methodology

Research is the logical and methodical pursuit to gather information regarding a particular problem (Galletta, 2013). Research must be an active, persistent, and systematic process of inquiry that analyzes the process in order to answer the problem's question (Rea, 2014). Chapter Three contains a discussion of the problem and purpose of the study, explanation of the development of the research questions, and a justification for the research design chosen for the study. In addition, Chapter Three contains a description of the population, census method, instrumentation, data collection, data analysis, and ethical considerations of the study.

Problem and Purpose Overview

Rural school districts face numerous barriers to success (American Association of State Colleges & Universities, 2016). One of the most significant barriers is the continued turnover in teachers at middle school and high school grade levels (American Association of State Colleges & Universities, 2016). Additionally, students from rural districts are faced with the limitations of education deserts barring many from pursuing higher education in the field of teacher education (Hurwitz et al., 2015). In a recent study, "57% of policymakers felt that rural education was unimportant to the United States Department of Education" (Center for Public Education, 2016a, p. 23).

The purpose of this study was to identify barriers presented to the success of teacher education candidates in areas determined as rural education deserts, the existence/absence of Teacher Cadet/Grow Your Own Teacher programs, and the identification of factors which influence four-year degree selection for aspiring teacher education candidates.

Research questions. The following research questions guided the study:

1. What are the factors of choice for aspiring teacher education candidates when choosing among Early Childhood Education, Elementary Education, Middle School Education, and High School Education teaching degrees?
2. What percentage of aspiring teacher education candidates at ABC College participated in a Teacher Cadet or Grow Your Own Teacher program during high school?
3. What are the barriers to completion of a bachelor's degree for teacher education students in rural areas who wish to complete a degree in Early Childhood, Elementary, Middle School, and Secondary Education?
4. How does ABC College recruit students to meet the need for teachers in education desert areas?

Research Design

A mixed-methods design was selected for this study. Mixed-methods research allows for both qualitative and quantitative data collection (Fraenkel, Wallen, & Hyun, 2015). Mixed-methods design expands the scope of a study, and the use of different methods of research inquiry results in a more comprehensive result (Creswell, 2014). In this study, mixed-methods research design allowed for investigation of barriers presented to teacher education candidates in rural education deserts and the factors which influence four-year degree selection of aspiring teacher education candidates.

Practices found within mixed-methods research design include identification of independent and dependent variables within the study, observation of standards of validity and reliability, and employment of statistical procedures (Creswell, 2014). Both open-ended and closed survey questions were constructed for this mixed-methods study

to provide for collection of quantitative data. Responses garnered from face-to-face interviews comprised the qualitative data.

Population and Census Method

The target population for this study was the total population of currently enrolled aspiring teacher education candidates at ABC College, a college determined to serve a rural education desert as defined in this study (Martin & Bridgmon, 2012). The total enrolled population of teacher education candidates at ABC College was 350 students. Total population sampling, or employing a census method, reduces the risk of missing probable insight during the study (Martin & Bridgmon, 2012). In addition, total population sampling provides the possibility of analytical generalizations within the study (Martin & Bridgmon, 2012).

A request for research was made and granted from the Office of Institutional Effectiveness at ABC College. Then, approval was acknowledged by Lindenwood University (see Appendix A). Email addresses were requested from the Director of Systems Administrator by a third party using the Colleague Computer Services Request form of ABC College. The data request resulted in the email addresses of 350 students currently enrolled in Early Childhood Education, Elementary Education, Middle School Education, and Secondary Education degrees.

Upon receipt of aspiring teacher education candidate email addresses by the third party, the researcher made the following documents available to the third party: Survey Information Letter (see Appendix B), Lindenwood Survey Research Information Sheet (see Appendix C), and the survey (see Appendix D). The documents and survey were

then distributed to the 350 participants via the password-encrypted email server of ABC College. Survey data were collected for 30 calendar days.

Instrumentation

Survey design. The data collection method for the quantitative portion of the mixed-methods study was a survey administered via Qualtrics. Survey data collection allows participants to provide candid and unambiguous responses (Rea, 2014). Questions included in the study survey were designed by the researcher to elicit the data needed to answer the research questions and to ensure content validity (Galletta, 2013).

To ensure internal validity, careful consideration was given to ensure questions were specific, direct, and tailored for the study respondents (Fowler, 2014). Warm-up questions were asked to set the tone and to support external validity (Fowler, 2014). Questions were placed within a meaningful order, and transition questions were added to create logical links for respondents (Galletta, 2013). Limited contingency questions were designed to avoid boredom by respondents (Fowler, 2014). Survey question content was formulated based on the literature review of the study. Survey questions were designed to address rural cultural norms (Koricich, 2014) and the identifiable characteristics of education deserts (Zalaznick, 2016).

Survey questions were piloted with subject-matter experts using careful design to minimize bias (Frankel et al., 2015). Field testing the survey using subject-matter experts allowed for identification of needed corrections and established reliability (Rea, 2014).

The following considerations were addressed during the survey field test:

- Are questions worded to achieve the desired results?
- Are questions organized in an appropriate order?

- Is question language designed to be understood by all classes of respondents?
- Are additional questions or explanations warranted?
- Are the instructions provided to respondents adequate?
- Are there questions which should be revised?

Face-to-face interview design. The data collection process for the qualitative portion of the mixed-methods study was face-to-face interviews. Interviewing provides for the convenience of the interviewees, ensures added validity based upon the expertise of the respondents, and allows for clarification of questions by the interviewer (Rea, 2014). Interview questions were designed to address the questions of the research study (Galletta, 2013).

Open-ended interview questions were used to allow the interviewees latitude in constructing their answers (Leighton, 2017). In addition, open-ended questions allow for the transition to subsequent questions (Leighton, 2017). To ensure validity and reliability, questions were placed within a meaningful order and question wording was developed using the appropriate academic language of the interviewees (Galletta, 2013). Interview questions were designed to be direct and to provide a logical flow throughout the interview process (Leighton, 2017). Interview questions were designed considering the literature review of the study. Questions were formulated to address education deserts, Teacher Cadet/Grow Your Own Teacher programs, teacher shortages, and teacher recruitment. Interview questions were piloted with subject-matter experts using careful design to minimize bias (Fraenkel et al., 2015).

Field testing interview questions using subject-matter experts allowed for corrections to be made to the questions and established reliability (Rea, 2014). The

following considerations were addressed during the interview pilot test to ensure validity and reliability of the interviews:

- Are the questions worded to acquire the appropriate data to answer research questions?
- Does the order of the questions lead to the desired data?
- Will the academic language of the questions be understood by the interviewees?
- Are additional questions or explanations to questions needed?
- Are there questions which should be eliminated from the interviews?

Based on feedback, suggestions, and recommendations provided by subject-matter experts, interview questions were revised to support the research questions of the study.

An interview appointment was requested with the Assistant Director of Enrollment Services/Student Development at the Assistant Director's convenience. Additionally, an interview appointment was requested with the Director of Enrollment Services/Student Development at the Director's convenience. Prior to the start of the interviews, the Assistant Director and Director were provided with an Interview Information Letter (see Appendix E), the Lindenwood Research Information Sheet-Interview (see Appendix F), and the interview questions (see Appendix G). The Assistant Director and Director were informed that the interviews would be audio recorded, transcribed, and that the recordings would be secured in a locked office.

Data Collection

Following approval of the Lindenwood Institutional Review Board and the participating college, data for this mixed-methods study were collected by a third party. Email addresses of all aspiring teacher education candidates enrolled in Early Childhood Education, Elementary Education, Middle School Education, and Secondary Education at ABC College were requested from the Director of Systems Administration by a third party using the Colleague Computer Services Request form of ABC College. The data request resulted in the email addresses of 350 students enrolled in Early Childhood Education, Elementary Education, Middle School Education, and Secondary Education degrees at ABC College.

Upon receipt of the email addresses by the third party, the researcher made the following documents available to the third party: Survey Information, Lindenwood Survey Research Information Sheet, and the survey. The documents and survey were then distributed to the 350 participants via the password-encrypted email server of ABC College by the third party. Survey data were collected for 30 calendar days. Quantitative data were gathered by the third party, and all student identification was redacted to ensure anonymity of participants and confidentiality of data collected.

The qualitative phase of the mixed-methods study included face-to-face interviews with the Director of Enrollment Services/Student Development and the Assistant Director of Enrollment Services/Student Development of ABC College. The researcher conducted the interviews at the convenience of the Director and Assistant Director. An audio recording of the interview sessions was made to ensure the validity of the interview process (Leighton, 2017).

Staff and faculty contact information for the Director of Enrollment Services/Student Development and the Assistant Director of Enrollment Services/Student Development can be found on the website of ABC College. An Interview Information Letter, a Lindenwood Research Information Sheet-Interview, and the Interview Questions were presented to the Director of Enrollment Services/Student Development and the Assistant Director of Enrollment Services/Student Development prior to the start of the interviews.

Data Analysis

Quantitative analysis of the online survey responses was conducted using descriptive statistics. Descriptive analysis allows for data to be described, shown, and summarized in a meaningful way (Martin & Bridgmon, 2012). Measures of central tendency were used to analyze data gathered in the survey, specifically the mode (Martin & Bridgmon, 2012). Using the mode allowed the researcher to clarify and examine the results of the survey.

Qualitative analysis was conducted using open and axial coding methods. Open coding was used to identify distinct concepts and categories within the gathered data (Martin & Bridgmon, 2012). During the transcription process of interview data, various themes and trends began to emerge (Creswell, 2014). Review and analysis of the transcribed data multiple times allowed for the creation of open codes based upon recurring patterns (Creswell, 2014). The researcher examined the repetition of words and phrases within the context in which they were used (Creswell & Poth, 2018).

Additionally, data were identified through color coding to deconstruct the transcriptions, identifying relationships and patterns to open code (Creswell & Poth,

2018). Open coding revealed categories which merged into themes and subthemes through the use of axial coding (Creswell & Poth, 2018). Therefore, the categorization of themes and connections revealed within the open codes evolved into axial codes and the resulting themes (Creswell & Poth, 2018). Following data analysis, tables and figures were constructed and interview data were organized into four major themes supported by interview data (Martin & Bridgmon, 2012).

Ethical Considerations

The participants in this study were assured anonymity; therefore, no information was collected nor retained in regard to the respondents' identities. Informed consent forms were provided to all direct participants prior to participation. Additionally, emails, survey responses, interview recordings, and interview transcriptions were kept confidential. There were no identified or anticipated risks to participants in this study. No deception was used during this study. Furthermore, no data regarding sensitive topics were gathered during this study.

Study participants were assured all paper records gathered would be stored in a protected location within a locked cabinet. Interview participants were guaranteed all audio recordings collected during the research process would be erased following transcription. Participants were assured all electronic data would be retained for a period of three years in a locked office with encrypted username and password protection. All documents and files obtained and utilized during the study will be destroyed three years following completion of the study.

To assure the anonymity of participants within the study, all student identification and interview participant data were modified to ensure the anonymity of the participants.

Pseudonyms were used for participants and for the rural community college participating in the study. A third party was used to avoid the possibility of conflict or bias.

Summary

Chapter Three contained the purpose of the mixed-methods study, the research questions, the research design, a description of the population and sample, the instrumentation chosen, data collection/analysis procedures, and ethical considerations. In Chapter Four data analysis is presented in descriptive text as well as tables and figures. Additionally, the study findings are discussed along with the emergent themes of the study.

Chapter Four: Analysis of Data

The purpose of the study was to examine the effects of rurality, education deserts, and Teacher Cadet/Grow Your Own Teacher programs on the education degree selection of aspiring teacher education candidates. Based on data collected, a study such as this may be significant in support of Teacher Cadet/Grow Your Own Teacher program initiatives. The outcomes of this study may allow public-school districts, institutions of higher education, and aspiring teacher education candidates to form relationships which lead to the establishment of teacher pipelines within rural communities.

The study was conducted using a mixed-methods design. Quantitative and qualitative methods were exercised through data collection utilizing an email survey and face-to-face interviews. Three hundred and fifty aspiring teacher education candidates enrolled at ABC College received a survey via Qualtrics. Forty-eight participants returned responses to the survey. Survey data collected revealed factors leading to the teacher education degree choices of survey respondents. Additionally, barriers to successful four-year degree completion of aspiring teacher education candidates were identified.

Identification of public high schools that offer GYOT programs or Teacher Cadet programs was completed. Data collected through face-to-face interviews revealed misconceptions regarding both education deserts and teacher shortages. Furthermore, interview data revealed the similarities and differences between Teacher Cadet and GYOT programs. Finally, interview data revealed the model of student recruitment currently practiced within ABC College. Results from this study may be used to design both teacher education advising and teacher education recruitment efforts for higher

education institutions. Findings of this study will add to the literature regarding rural teacher education candidates, factors affecting potential college students in areas deemed as education deserts, barriers to four-year degree completion, and the influence of Teacher Cadet/Grow Your Own Teacher programs.

Survey Data Analysis

Survey data were collected from 48 aspiring teacher education candidates who were enrolled in the teacher education department of ABC College. Aspiring teacher education candidates at ABC College were enrolled in Early Childhood Education, Elementary Education, Middle School Education, or Secondary Education at ABC College during the 2018-2019 academic year.

Findings

Research question one. What are the factors of choice for aspiring teacher education candidates when choosing among Early Childhood Education, Elementary Education, Middle School Education, and Secondary Education teaching degrees?

The first eight survey questions were designed to gather data to answer research question one.

Survey question one. List the county from which you graduated high school.

The survey sample was comprised of 46 respondents. The mode, or most frequent response, was XYZ County (a pseudonym) with nine of the 46 respondents. XYZ County is the county in which ABC College is situated.

Survey question two. Do you intend to return to this county to teach upon the completion of your four-year degree?

The survey sample was comprised of 46 respondents. The mode, or most frequent response, was Yes ($n = 24$). Therefore, 52.17% of respondents expressed their intention to return to the county from which they graduated high school to begin their teaching careers (see Figure 3).

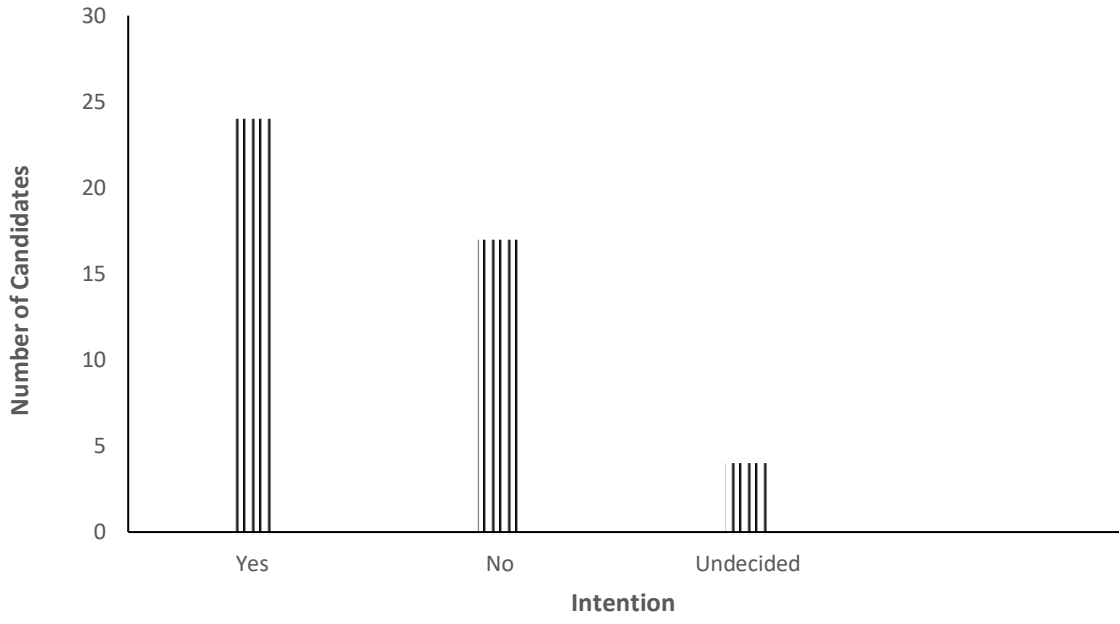


Figure 3. Intention to return to county as a beginning teacher.

Survey question three. If you are not returning to the county to teach, please explain why.

The survey sample was comprised of 15 respondents. The mode, or most frequent response, was the indication respondents desired more opportunities than the county offered ($n = 8$) (see Figure 4)

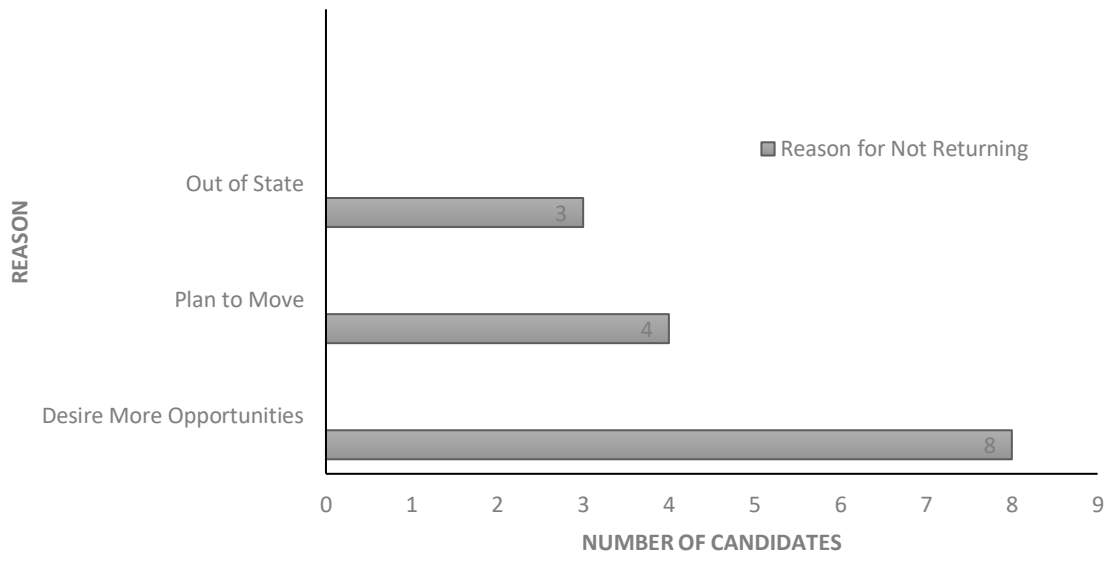


Figure 4. Reason for not returning to county.

Survey question four. What is your intended degree within the college of education?

The survey sample resulted in 44 respondents. The mode, or most frequent response, was Elementary Education ($n = 48$) (see Figure 5).

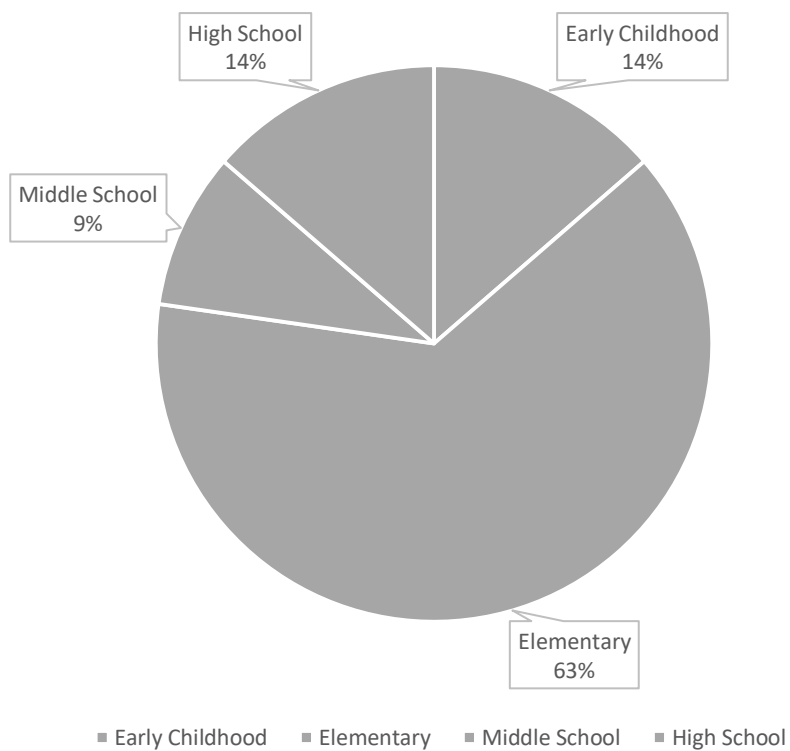


Figure 5. Intended education degrees.

Survey question five. Do you plan to teach within the grade levels of the degree for which you currently have declared a major?

Of the 44 survey participant responses, the mode, or most frequent answer, was Yes ($n = 38$). Therefore, 86% of aspiring teacher education candidates indicated they plan to teach in the grade levels associated with the teacher education degree they selected (see Figure 6).

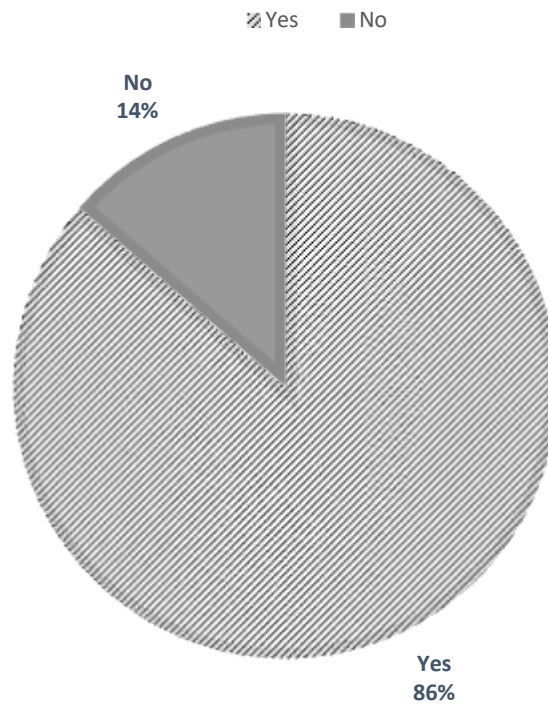


Figure 6. Likelihood of teaching within degree selected.

Survey question six. Which of the following factors have contributed to your teacher education degree selection?

Of the 48 aspiring teacher education candidate respondents, the mode, or most frequent answer, was that previous classroom experience was the greatest factor in determining degree selection ($n = 19$) (see Figure 7).

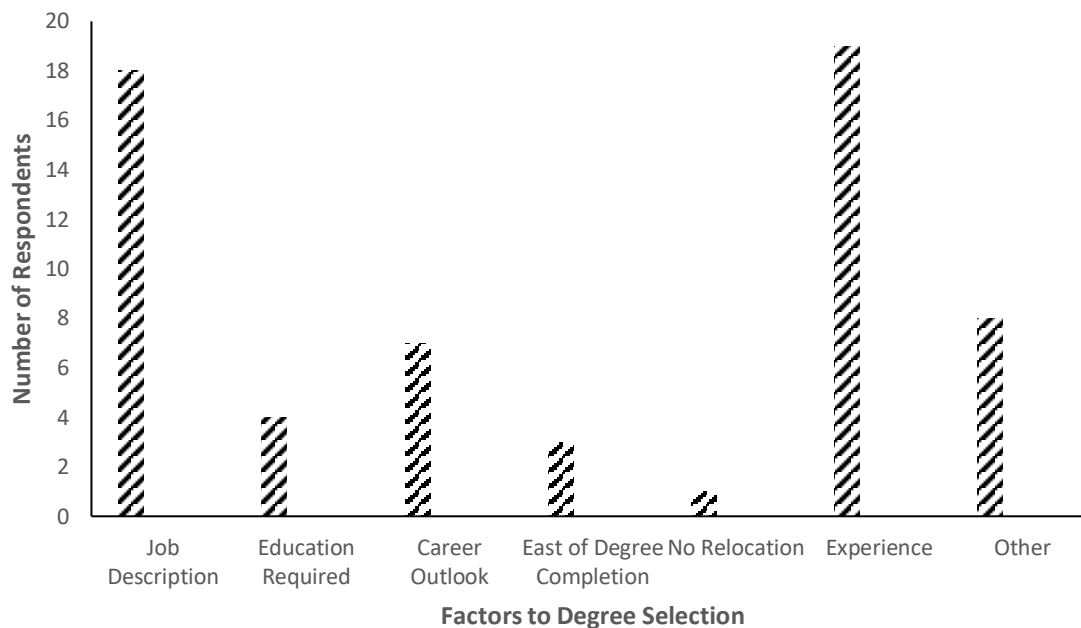


Figure 7. Contributing factors to intended degree selection.

Survey question seven. Have you changed your selection of major (grade level of teaching degree) while attending this college?

The survey sample consisted of 44 respondents. The mode, or most frequent response, was No ($n = 29$). Therefore, 66% of aspiring teacher education candidates have not changed their degree selection while enrolled at ABC College (see Figure 8).

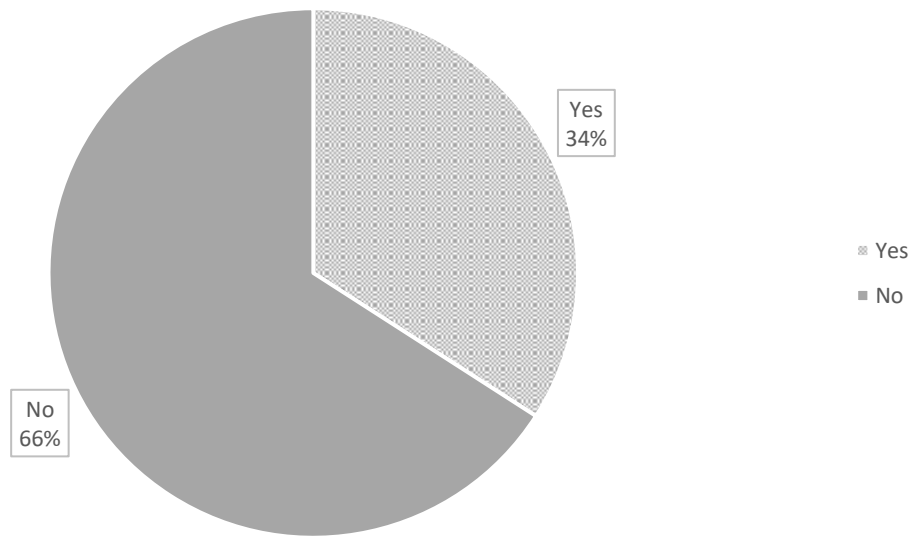


Figure 8. Change of degree while attending ABC College.

Survey question eight. Was this change of major due to any of the following conditions?

The survey sample consisted of 20 respondents. The mode, or most frequent answer, was Other ($n = 9$). Therefore, the reason for the change of major of these nine respondents is undetermined (see Figure 9).

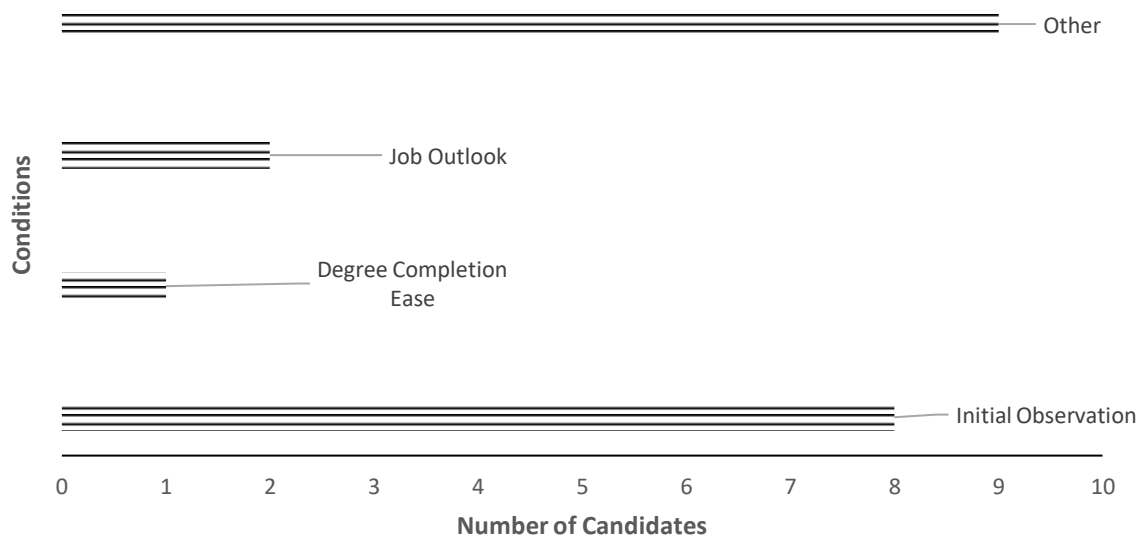


Figure 9. Conditions affecting degree change.

Research question two. What percentage of aspiring teacher education candidates at ABC College participated in a Teacher Cadet or Grow Your Own Teacher program during high school? (Survey questions nine through 15 were designed to answer research question two.)

Survey question nine. Did the high school from which you graduated offer a teacher cadet program? A teacher cadet program offers high school students the opportunity to work within an existing classroom as a tutor/cadet teacher.

The survey sample resulted in 44 aspiring teacher education respondents. The mode, or most frequent answer, was Yes ($n = 24$). Therefore, 54.5% of aspiring teacher education candidates indicated the high school from which they graduated offered a Teacher Cadet program (see Figure 10).

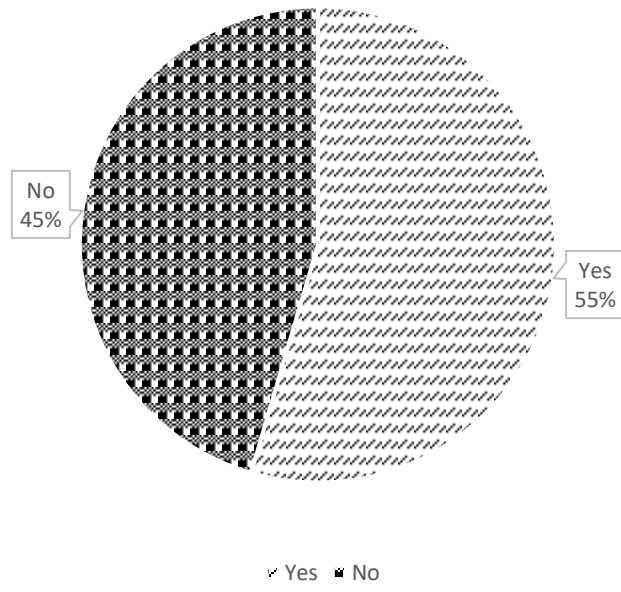


Figure 10. High school teacher cadet program.

Survey question 10. Please list the name of the high school.

The survey sample consisted of 24 aspiring teacher education candidates. The mode, or most frequent answer, was JHK High School (a pseudonym) ($n = 3$). The JHK High School is located within the city in which ABC College is located (see Table 3).

Table 3

High Schools with Teacher Cadet Programs

High School	Number of Aspiring Teacher Education Candidates
JHK	3
TYU	2
DHG	2
EC	2
DSC	2
SCC	2
GNI	2
BVN	1
KLM	1
FDS	1
HBU	1
LSK	1
ERR	1
IKI	1
WER	1
NVB	1

Note. Information taken from the survey responses.

Survey question 11. If the high school from which you graduated offered a teacher cadet/tutor program, did you participate in this program?

The survey sample consisted of 36 respondents. The mode, or most frequent response, was Yes ($n = 22$). Therefore, 61.11% indicated they had participated in a teacher education cadet program while attending high school (see Figure 11).

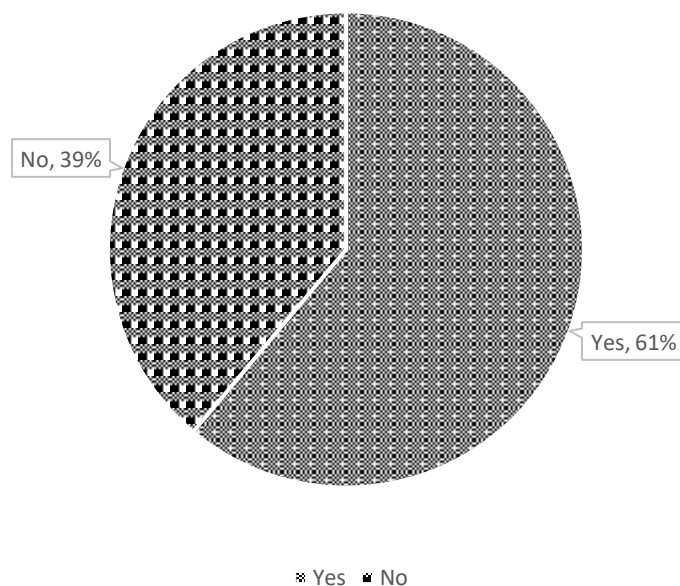


Figure 11. Participated in teacher cadet program.

Survey question 12. Please explain why you did not participate.

The survey sample consisted of 11 aspiring teacher education candidates. The mode, or most frequent response, was “The teacher cadet program was not offered to me while I was in high school” ($n = 8$). Therefore 73% of respondents indicated they were not offered the opportunity to participate in the teacher cadet program in high school (see Figure 12).

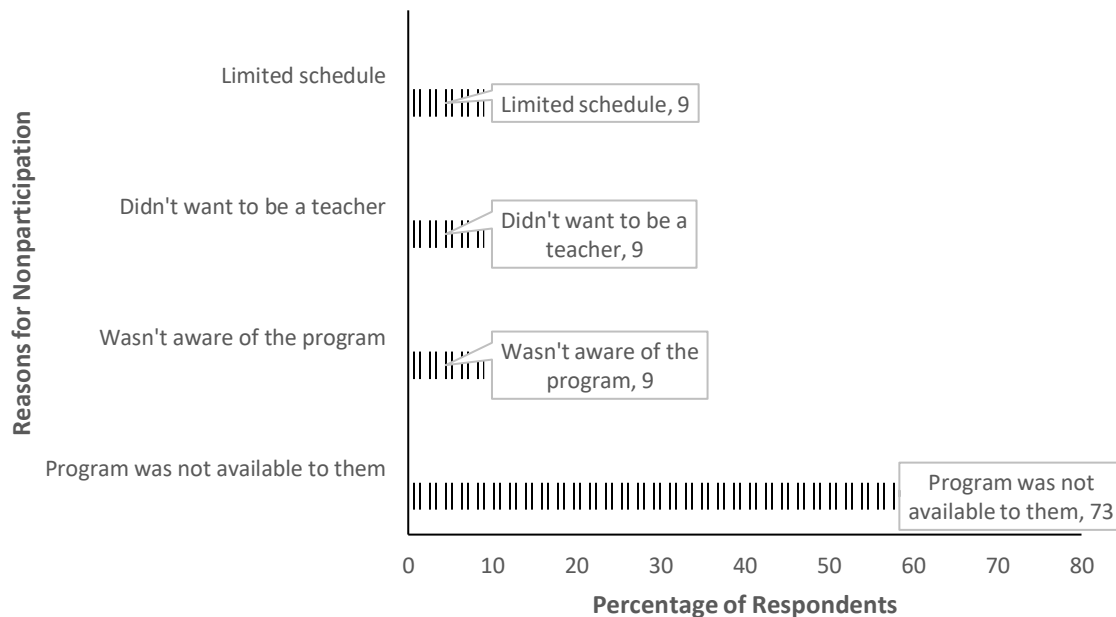


Figure 12. Reason for nonparticipation in teacher cadet program.

Survey question 13. Does the high school from which you graduated participate in a Grow Your Own Teacher program?

The survey sample was comprised of 42 aspiring teacher education candidate respondents. The mode, or most frequent response, was Unsure ($n = 20$). Therefore, 47.6% of survey respondents indicated they were unsure if their high school offered a Grow Your Own Teacher program (see Figure 13).

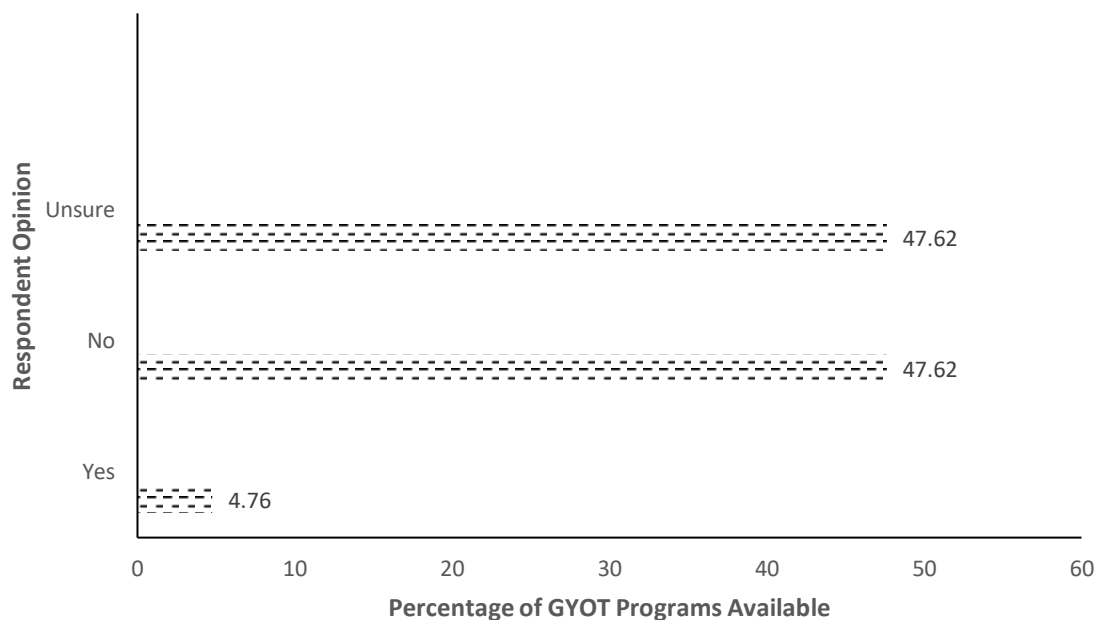


Figure 13. Grow Your Own Teacher program available.

Survey question 14. Are you a participant in a Grow Your Own Teacher program?

The survey sample for this question was 41 respondents. The mode, or most frequent response, was No ($n = 39$). Therefore, 95.1% of aspiring teacher education candidate respondents responded they did not participate in a Grow Your Own Teacher program during their high school career (see Figure 14).

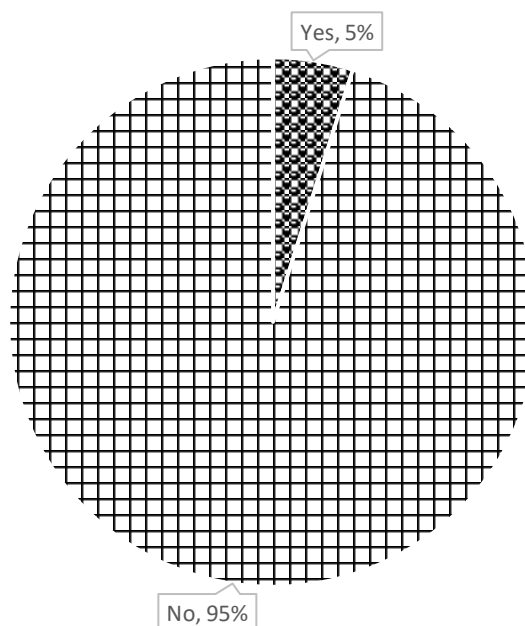


Figure 14. Grow Your Own Teacher program participants.

Survey question 15. Please list the participating high school.

The survey sample for this question was two participants. The mode, or most frequent response, was TDC High School (a pseudonym). Therefore, 100% of the survey sample respondents who participated in a Grow Your Own Teacher program did so at TDC High School.

Research question four. How does ABC College recruit students to meet the need for teachers in education desert areas?

Survey questions 16 and 17 were designed to provide data to answer research question four.

Survey question 16. Upon the completion of your associate’s degree, to which four-year institution do you intend to transfer to complete your bachelor’s degree?

The survey sample for this question was 44 aspiring teacher education candidate respondents. The mode, or most frequent answer, was “I plan to transfer to one of the three partner institutions on the campus of ABC College” ($n = 28$). Therefore, 63.6% of respondents indicated they would remain on the campus of ABC College to complete their four-year teacher education degrees (see Figure 15).

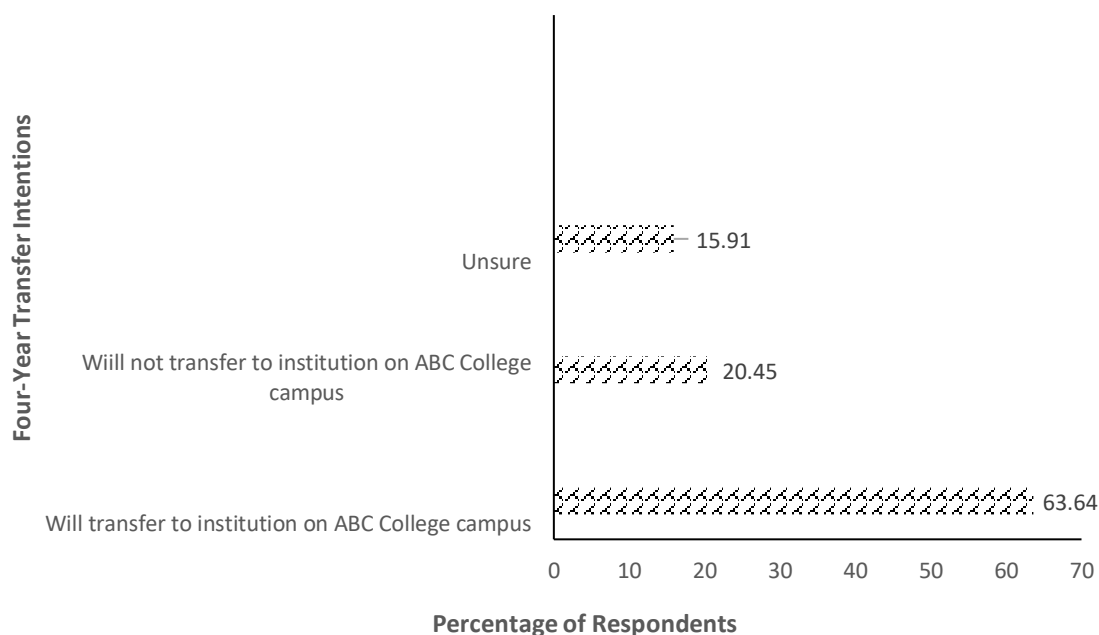


Figure 15. Transfer intention.

Survey question 17. Why have you chosen the particular institution listed in question 16?

The survey sample for this question was 41 aspiring teacher education candidate respondents. The mode, or most frequent response, was “I am unable to relocate from the

area to complete a four-year degree” ($n = 19$). Therefore, 46.3% of the respondents indicated they were unable to relocate from the geographical area to complete a four-year degree (see Figure 16).

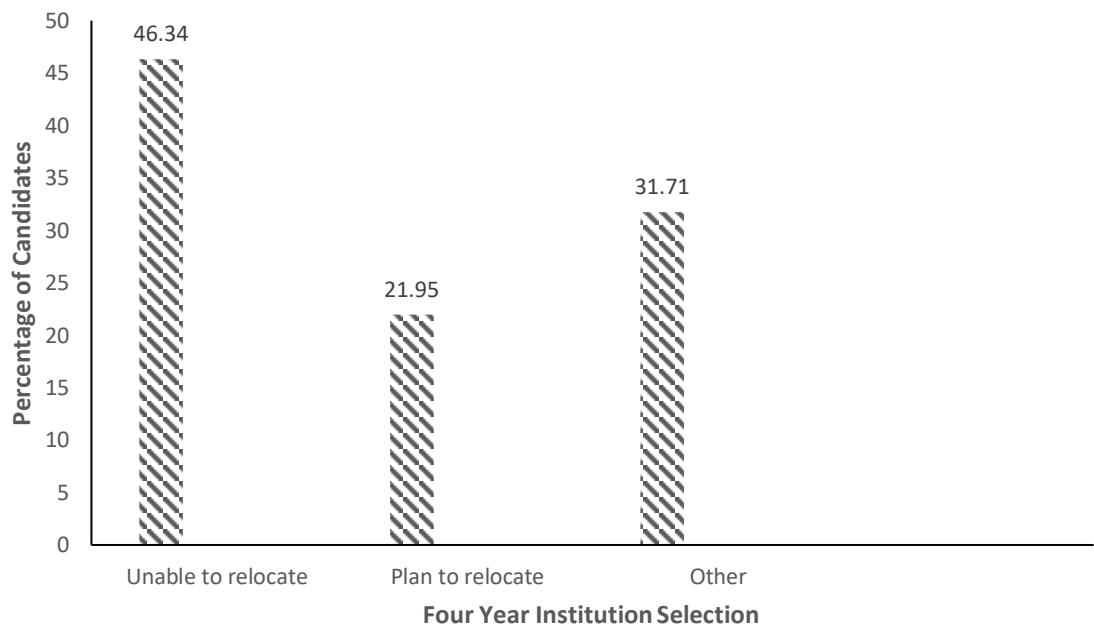


Figure 16. Four-year institution selection.

Research question three. What are the barriers to completion of a bachelor’s degree for teacher education students in rural areas who wish to complete a degree in Early Childhood, Elementary, Middle School, and Secondary Education?

Survey question 18 was designed to collect data to answer research question three.

Survey question 18. Please check any barriers that have been presented to you during your pursuit of your teaching degree.

The sample size for this question was 44 aspiring teacher education candidate respondents. The mode, or most frequent response, was work/college conflicts ($n = 26$). Therefore, 59% of aspiring teacher education candidates indicated work/college conflicts were a barrier to their education (see Figure 17).

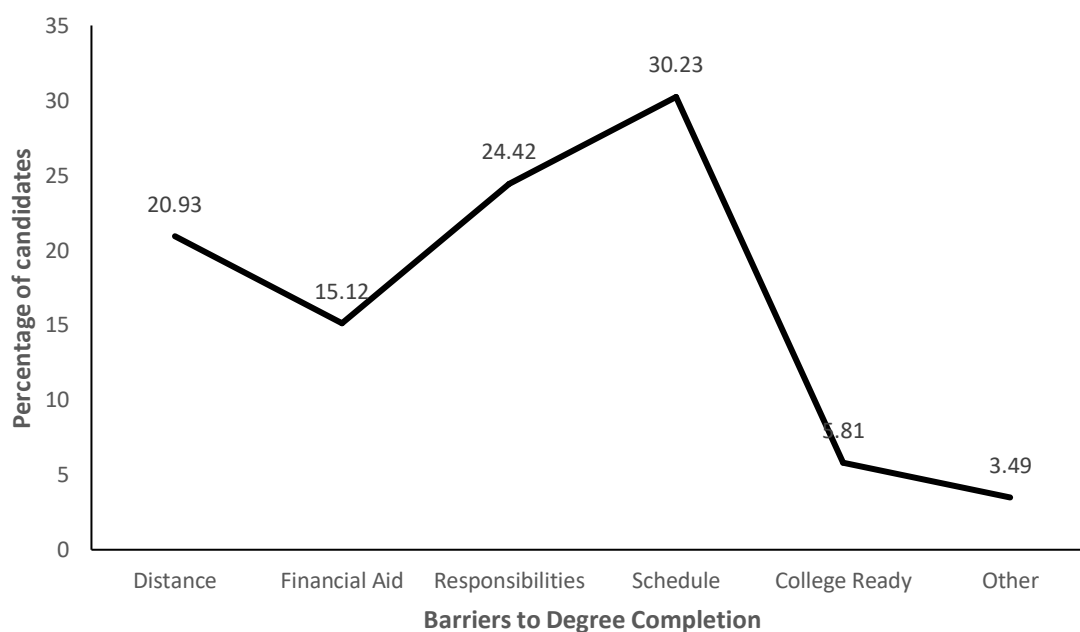


Figure 17. Barriers to degree completion.

Face-to-Face Interview Data Analysis

For the qualitative portion of this study, the Assistant Director of Enrollment Services/Student Development and the Director of Enrollment Services/Student Development at ABC College were interviewed. The interviews were audio recorded, with permission of the interviewees, and then transcribed. The responses were authentic

and in the spoken language of the interviewees. Therefore, interview responses noted in this study are genuine and informal due to the casual environment at the time of the interviews.

Interview data were analyzed using open and axial coding techniques to distinguish connections and relationships by classifying portions of data trends and themes (Creswell & Poth, 2018). Discrete trends and themes began to emerge through the process of transcription (Creswell, 2014). Open codes were created following the dissection of transcribed data upon the completion of multiple readings (Creswell, 2014).

Relationships and patterns revealed in the open codes formed recognizable classifications and ultimately allowed for development of themes and subthemes through the application of axial coding (Creswell & Poth, 2018). Interview questions were designed to address research question four. The process used to evolve from axial coding, where connections and relationships among classifications were merged and themes were developed, is shown in Table 4.

Table 4

Emerging Themes Interview Data

Education Desert Concepts	Teacher Cadet/ Grow Your Own Teacher Program Inconsistencies	Teacher Shortage Perceptions	Recruitment Gaps
Limited access	Scholarship programs	Uncertain outcome	College-wide focus
Online solution	No recruitment	Unavailable data	Resource limitations
	Funding stream	Communication	Organization

Data for the qualitative portion of the study were gathered through face-to-face interviews with the Director of Enrollment Services/Student Development and the Assistant Director of Enrollment Services/Student Development at ABC College. The interviews were conducted at the convenience of the interviewees, and the interviews were audio recorded with the permission of the interviewees. Following the face-to-face interviews, the audio recordings were transcribed in the spoken language of the interviewees. Therefore, responses given within the interviews were genuine and frequently spoken in higher education jargon, acronyms, or language specific to higher education enrollment services. For clarification, brackets [] were inserted to more accurately explain the higher education jargon, acronym, or language specific to higher education enrollment services. Interview data were analyzed using open and axial coding techniques to identify connections and relationships by categorizing segments to identify themes or trends (Creswell, 2014).

Descriptive matrix. Shown in Table 5 and Table 6 are an arrangement of the four major themes which emerged during data collection, organized in a descriptive matrix. During qualitative data collection, data displayed in Table 5 are only a sample of the supporting data collected from the Director of Student Enrollment Services/Student Development. During qualitative data collection, data displayed in Table 6 are only a sample of the supporting data collected from the Assistant Director of Student Enrollment Services/Student Development. Additional data collected from the interviews were used to reinforce major themes.

Table 5

Descriptive Matrix: Major Themes Supported by Director Data

Education Desert Concepts	Teacher Cadet/ Grow Your Own Teacher Inconsistencies	Teacher Shortage Perceptions	Recruitment Gaps
<p>An education desert is a term that I recognize within higher education conversations, conferences I have attended, and publications. However, this term has not been one of significance to me, largely in part because I have given limited attention to the specifics of the idea.</p>	<p>Grow Your Own Teacher programs have been a topic of conversation among collaborative circles between high schools and institutions of higher education for a few years. However, the funding stream to institute and sustain a Grow Your Own Teacher program has been unclear to this point.</p>	<p>The enrollment of aspiring teacher education candidates in the elementary education degree appears to remain constant year after year. It is unclear if the need for elementary education majors in the area served by ABC College is leading to a surplus of elementary education teachers.</p>	<p>Student recruitment is the main focus of our department. When college fairs are offered on campus, we highlight all degree programs.</p>

Table 6

Descriptive Matrix: Major Themes Supported by Assistant Director Data

Education Desert Concepts	Teacher Cadet Grow Your Own Teacher Inconsistencies	Teacher Shortage Perceptions	Recruitment Gaps
An education desert, in my understanding, is a geographical area that has no opportunity to continue an education beyond high school.	While I am aware of Teacher Cadet programs at area high schools, I have not counseled a student through our development program who has shared their involvement in a Teacher Cadet program while advising.	When grants or initiatives are made available through the state or the federal government, these become our department's focus. In my time working in higher education there have been no dedicated funding streams which address teacher education.	Our department has limited resources, as does everyone in higher education. This forces us to focus on the big picture of recruitment.

Major Themes

Education desert concepts. Through the process of qualitative data examination, one of the first major themes that emerged was a limited understanding of the term *education deserts*. The Director of Enrollment Services/Student Development stated:

An education desert is a term that I recognize within higher education conversations, conferences I have attended, and publications. However, this term has not been one of great focus to me, largely in part because I have given limited attention to the specifics of the idea. I believe I have an accurate understanding of

the terminology if nothing more than the premise of the term desert. My definition of an education desert would describe an area where there are limited opportunities for higher education. However, due to the availability of distance learning within institutions, particularly online learning, I am unsure of my understanding of an education desert is valid.

Even though the Director expressed his lack of understanding of the term education desert, he mentioned the limitations concerning distance learning. The Director believed the availability or lack of availability of high-speed internet is one particular barrier to distance learning. He also commented that many areas in the ABC College district do not have access to the quality of internet required for students to be successful in the distance learning environment. Additionally, the Director commented:

I'm unsure what demographics and socioeconomic components have to be present within a geographical area in order for an institution to fall within an education desert. I don't know if ABC College qualifies for this definition.

The Director later revealed the uncertainty of the focus of the importance of location within an education desert.

While discussing the definition of an education desert as defined by this study the Director stated:

It [an education desert] does not seem to be as relevant within higher education now. Online learning has opened higher education for people of all ages and locations. Again, however, we do have many areas within our service district that do not have high-speed internet. For these particular areas, we have relied upon the ITV modality of our distance learning components to reach these students.

Through continued discussion, the Director revealed the ITV modality of course delivery was created due to an understanding by ABC College students who must drive more than 30 miles to college either will not enroll in college or fail to persist. The Director shared his belief while ABC College might fit the definition of an education desert institution, he was not sure that would be considered a stumbling block to achieving a college degree, given the various modalities of courses offered through the institution.

During the interview with the Assistant Director, responses were centered on the definition of and the barriers associated with education deserts. According to the Assistant Director, the total lack of access to an institution of higher education defines an education desert. The Assistant Director of Enrollment Services/Student Development specified:

An education desert, in my understanding, is a geographical area that has no opportunity to continue an education beyond high school. Typically, when I think of an education desert I think of areas of the northwest of the United States where institutions of higher education are few and far between. I would also define an education desert as an area where an individual would be forced to move in order to attend college.

According to Zalaznick (2016), an education desert is an area with no colleges or universities, or only one broad-access community college. During the continued discussion of this definition, the Director indicated:

A desert by definition is a barren area where the growth of plants and animals is impossible for the vast majority of species. Any form of life that survives the

desert environment is resilient. So by using this definition of a higher education desert, I believe the students of ABC College share this resilience.

The Assistant Director expressed her views on the depth of definition of an education desert and availability of higher education in and around ABC College. The Assistant Director added while ABC College is an open-access college, not every student who enrolls in ABC College comes “college ready” [able to enter college-level mathematics, English and reading]. The Assistant Director stated:

Because so few of our students present to the college able to enroll in college-level courses, I believe this adds to the depth of an education desert. ABC is the only higher education institution available to students in the 17 district area. The nearest higher education option to students other than ABC College is more than 80 miles away.

An education desert, according to Hillman and Weichman (2016), is an area where there is an absence of opportunities for higher education, or the existence of only one community college institution considered broad-access. Both the Director and Assistant Director of Enrollment Services/Student Development for ABC College possessed a small amount of previous knowledge in relation to education deserts.

Additionally, both the Director and Assistant Director had differing viewpoints of the importance of ABC College and whether the geographical area of the college qualified as an education. Klasnik et al. (2018) found education deserts produce an unfairness for students who wish to pursue an education beyond high school. Moreover, Zalaznick (2016) found individuals living within education deserts experience various factors associated with education deserts: additional financial burdens, the possibility of relocation, and limited resources.

Teacher Cadet and Grow Your Own Teacher program inconsistencies.

Throughout qualitative data examination, the second major theme that emerged was the difficulty of the interviewees to distinguish between a Teacher Cadet program and a GYOT program. Participation in Teacher Cadet programs is offered to high school juniors and seniors to assist public classroom teachers in their district with tutoring students and managerial duties (MODESE, 2016). Often these programs are made available to all eligible students regardless of their interest or desire to enter the education profession (MODESE, 2016).

Frequently, Teacher Cadet programs are created within public high schools to provide an opportunity for students to complete community service hours during regularly scheduled classroom hours (MODESE, 2016). This model of Teacher Cadet programs enables students to fulfill scholarship guidelines without the additional concern of transportation, time, and financial obligation (MODESE, 2016). Fulfillment of community service hours within this model framework meets the requirements of scholarship qualifications while at the same time providing a service for the school district (MODESE, 2016). Teacher Cadet programs may offer scholarships funded through the school district and financed by state grants (MODESE, 2016).

Grow Your Own Teacher programs are collaborative arrangements among public high schools, institutions of higher education, and the aspiring teacher education candidate (MODESE, 2016). High school juniors or seniors who have been identified with the essential characteristics of a potential educator and who have the desire to return to their communities as beginning teachers are offered a contractual agreement (Skinner et al., 2011). Scholarships and tuition reimbursement may be offered to aspiring teacher

education candidates in exchange for the agreement to return to the participating districts for a designated number of years (Toshalis, 2014). During the interview, the Director of Student Enrollment/Student Development stated:

Many of our area high schools offer programs in order to provide students the opportunity to complete community service hours to qualify for state-funded scholarship programs. While each school district can add addendums to the criteria that students must complete in order to qualify, the basic design of programs is established by the state.

Throughout the continued discussion, the Director shared that his department works closely with high school counselors to utilize state-funded scholarships as a means to complete a two-year degree “debt free.” Initially, the programs were designed around attendance, GPA, and community service. As state budgetary concerns consistently grew each year, qualifying criteria was added. Now students must attend the same high school for three consecutive years, have a 95% attendance rate over their high school career, and achieve a specific score on the required standardized testing for high school graduation. Discussion regarding Teacher Cadet programs led to the question of the existence of GYOT programs within the high schools serviced by ABC College. The Director shared:

Grow Your Own Teacher programs have been a topic of conversation among collaborative circles between high schools and institutions of higher education for a few years. However, the funding stream to institute and more importantly to sustain a Grow Your Own Teacher program has been unclear to this point.

Continued discussion with the Director revealed GYOT programs have existed across the nation for at a decade, at least in urban areas. The Director discussed the research that has been shared at conferences in regard to GYOT programs. The Director added:

Grow Your Own programs have been discussed at state meetings I attend. The topic is always initiated by an institution either located within a large city or at least in close proximity to a large city. Many of the private institutions within the state have started GYOT programs. These private institutions often have private high schools as their feeder school [a school which works in relation to the higher education institution to provide students] and private corporations or donors to fund the program.

During the interview with the Assistant Director, she shared her perceptions of both Teacher Cadet and GYOT programs:

While I am aware of programs at area high schools referred to as Teacher Cadet, I have counseled only a small number of students through our enrollment process who have shared they participated in the program with the intention to enter the teacher education field.

While continuing the conversation with the Assistant Director, she shared that Teacher Cadet programs have changed a great deal over the past 10 years. As state budgets become tighter, the requirements for students to qualify for these scholarships have become harder. The Assistant Director was of the opinion that GYOT programs do not exist within the public-school systems which are serviced by ABC College.

Additionally, the Assistant Director expressed her belief there were no GYOT programs outside the metropolitan areas of the state.

Funding drives education, both in the K-12 realm and the higher education realm. Whether funding originates from the state or federal level, it is accompanied by parameters (Center for Public Education, 2016). As funding streams become weaker, inversely the qualifications to receive funding become more stringent, thereby allowing fewer and fewer high school students to earn an opportunity to pursue a higher education (American Association of State Colleges and Universities, 2016).

Grow Your Own Teacher programs are rarely funded by the same streams as are Teacher Cadet programs (Toshalis, 2014). While the first two years of higher education might be funded through a scholarship generated and earned through a Teacher Cadet program, the final two to three years must be funded through private funding sources (MODESE, 2016). The interview data revealed a belief pattern of both the Director and Assistant Director in regard to Teacher Cadet programs and GYOT programs; Teacher Cadet programs are neither designed nor promoted as a vehicle for the creation of future educators in the state serviced by ABC College. Additionally, the Director and Assistant Director believed with the possible exception of private institutions of higher education located in metropolitan areas, GYOT programs, as defined by this study, do not exist in the school districts serviced by ABC College.

Teacher shortage perceptions. The third major theme to emerge through analysis of qualitative data was the misconception of teacher shortages within the area serviced by ABC College. Aragon (2016) found teacher shortages exist across the nation. Significant shortages are indicated within areas of mathematics, science, special

education, and computer sciences (Center for Public Education, 2016). Additionally, teacher shortages exist across all grade-level certifications in rural demographic areas; specifically, within public-school districts located within education deserts (Hillman & Weichman, 2016). The Director shared:

The vast number of graduates from the teacher education department of ABC College are elementary education majors. This ratio seems to be consistent across the state among our partner community colleges and even within four-year institutions of higher education. The enrollment of students interested in teaching as a profession appears to remain constant in terms of the degree they select. I'm unsure if the number of elementary education majors we graduate annually is equal to the need for teachers in our area.

Throughout the interview with the Director, he determined the feedback he receives in terms of graduates of ABC College is largely based upon the certification workforce, areas which require a one or two-year certificate that leads to gainful employment. The Director discussed the frequency of telephone calls received by ABC College from area businesses and employers looking for an individual who might have recently graduated with a particular certification and be available for immediate employment.

Continued discussion with the Director indicated there are very limited inquiries from area public-school systems searching for certified teachers for immediate employment. In addition, discussion revealed it is unclear if the limited search for certified teachers through the Director's office is based upon the immediate need for teachers within the area of ABC College or because as a two-year institution, ABC

College does not certify teachers for employment. Teacher shortages have been identified in middle school education and secondary education certification areas across all disciplines (Learning First Alliance, 2017). The factors that contribute to these shortages vary per discipline. During the interview discussion regarding teacher shortages the Director emphasized:

Through our memberships in organizations that focus on student enrollment, a great deal of demographic information is shared. Data is shared regarding worker shortages for all aspects of society. Usually, the data which is shared with our department is centered on workforce areas that have received a recent initiative in funding streams based upon political and legislative pushes. Higher education receives the vast majority of their funding from these streams. When grants or stimulus funds become available, we have no choice but to compete for those funds. This competition then drives the focus of our program development. I cannot remember a time when funding was made available to higher education institutions that was earmarked for the production of new teachers.

During the interview discussion with the Assistant Director, she shared her indecision about the existence of teacher shortages in the area serviced by ABC College. The Assistant Director expressed statistical data her office receives does indicate identifiable shortages in specific academic disciplines; namely mathematics and special education. The Assistant Director indicated:

I am unclear about the status of teacher shortages in our area. However, because we are a two-year institution our place in the chain is hard to determine. I assume one reason the vast majority of teacher education graduates at our college are

elementary majors are the limited options for continuing with a bachelor's degree in the middle school or high school areas.

Research found through the literature review of this study indicated beginning teachers are twice as likely to leave the profession as any other profession (Zeichner, Payne, & Brayko, 2015). Through discussion with the Assistant Director, she agreed that a concept of teacher shortages is confusing to her department, particularly the role of ABC College and circumstances that contribute to the shortages. The Assistant Director shared:

As a community college, we are only responsible for the first two years of a teacher's education. Tracking the progress of students after they transfer to a four-year institution has always been a challenge. After a student graduates from ABC College, we struggle to keep in contact with these graduates. As a portion of our exit counseling, students are asked a series of questions regarding their career plans and transfer intentions. Typically, we are able to gather very limited data post-graduation. The state's department of higher education attempts to gather similar data and provide that information to community colleges.

Unfortunately, they have limited success with these surveys. Because we are unable to coordinate this information, it is difficult to decide what role as a community college, we serve in the teacher pipeline.

Aragon (2016) proposed teacher shortages exist in identifiable patterns.

Shortages exist in areas categorized as highly qualified by the U.S. Department of Education: science, mathematics, engineering, computer sciences, and special education (USDOE, Office of Postsecondary Education, 2014). Additionally, Zalaznick (2016) found rural school districts struggle to recruit and retain teachers in all grade-level

certifications. Both the Director and Assistant Director expressed an understanding of teacher shortages. Interview data revealed the influence of ABC College on teacher shortages within the area serviced by ABC College was undetermined.

Recruitment gaps. The fourth major theme to emerge during the coding process was the identified gaps in aspiring teacher education candidate recruitment. Throughout continued discussion regarding collaboration between ABC College and area high schools in regard to recruitment of students who have participated in either Teacher Cadet or GYOT programs, the Director stated:

ABC College Student Enrollment Services works continuously with area high schools to recruit students for our various programs of study. The state-funded grant program which supports the programs commonly referred to as Teacher Cadet within area high schools is a substantial portion of the student body which enrolls in ABC College each fall as incoming freshmen. The teacher education programs offered by ABC College are always advertised and marketed by the Department of Enrollment Services during recruitment efforts.

Continued discussion with the Director revealed the design and model of student recruitment for ABC College. The Department of Enrollment Services is responsible for the organization and execution of recruitment events for all programs of study at ABC College. The recruitment model for ABC College is largely designed around recent high school graduates and makes initial contact with these potential students through college fairs. Each spring, area high schools are invited to recruitment fairs on the campus of ABC College.

High school counselors are invited to bring both juniors and seniors in high school to this event. Recruitment fairs begin shortly after fall enrollment begins and fairs run continuously for four to five weeks each spring. The Assistant Director indicated:

The Department of Enrollment Services continually offers advising in regard to teacher education at recruitment fairs, high school visits, and highlights the various teacher education programs offered by ABC College when collaborating with area school counselors. When advising students who have participated in A+ scholarship programs, we do not assume the student is a potential teacher merely because they participated in a Teacher Cadet program. These programs have been instituted by area high schools to offer an alternative for participating students to gain the required community service hours during the regular school attendance day. It appears the terminology of Teacher Cadet has been coined based upon the action the students are performing during the community service hours and does not necessarily indicate their desire to entire the field of teaching.

Even with the increased digital presence institutions of higher education have established, the greatest gain in student recruitment results from dedicated on-ground events (Aragon, 2016).

The Director shared through discussion that student recruitment is the main focus of his department. While his office is responsible for many college functions, the recruitment of students is his department's most vital role. Additionally, discussion revealed resources for recruitment are limited for his department, both monetary and human. The Director indicated:

Because of these limited resources, we try to get the most “bang” for our buck. We invite numerous high schools to attend the recruitment fairs on the same day. We may have 600+ students on the campus at the same time. Because our department is small, five employees, we must rely on the cooperation of other departments to operate these events. All programs of the college are invited to participate in this event, and students are encouraged to visit with the informational tables set up within the auditorium. Students are encouraged to speak with faculty and staff regarding the programs they are interested in.

When asked about the training that the department has in regard to the teacher education department and the various teacher education degrees offered at ABC College, the Director shared all employees in his department are trained both in general education degrees offered at ABC College as well as specific programmatic degrees, like teacher education. In addition, the Director voiced his concern regarding the intricacies of each program offered by ABC College.

The Director expressed his concern regarding the consistent change that occurs in programs and the possible breakdown of communication between program managers and his department. The Director indicated:

We have realized that communication does break down in terms of curriculum changes, changes to degree-specific testing requirements, and the working relationships between our community college and their four-year partners.

In addition, the Assistant Director shared concerns regarding recruitment training. The Assistant Director explained the mock advising seminars designed for faculty and staff. In these mock advising seminars, the faculty or staff are provided a scheduling

scenario and are then asked to create a degree plan for the case scenario student. The Assistant Director expressed her confidence the training is helpful both for advisement but also as a recruitment tool.

Practicing the advising scenario oftentimes reveals misconceptions and problems that must be solved. Oftentimes the faculty or staff will express to the Assistant Director they had never considered the multiple facets of the scheduling and advising process. Being able to identify these potential issues allows their department to improve the processes; however, it does reveal gaps in their recruitment system.

Communication among college departments is essential to the student recruitment process and the success of the institution. Both the Director and the Assistant Director agreed communication between college departments is problematic. Higher education budget cuts have resulted in the downsizing of departments, which leads to work overload for the remaining staff. Increased workload has led to additional struggles with communication. With limited time to complete tasks, often program managers fail to convey critical changes to all departments of the college, specifically to the Department of Enrollment Services.

According to Azano and Stewart (2016), numerous challenges exist at the junction of rural communities and the availability of higher education. Cochran-Smith and Villegas (2015) indicated effective teacher preparation techniques are framed around the cultural norms associated with the district in which the future educator will teach. Recruiting potential teacher education candidates from within rural communities to then return to those same rural communities as beginning teachers may be one solution for teacher shortages in rural districts (Corbett, 2015).

Summary

A mixed-methods design, using both quantitative and qualitative data, was used to complete this study. The results of the survey revealed barriers to aspiring teacher education candidates and factors affecting their choice of degree programs. Additionally, the survey was created to evaluate the influence of Teacher Cadet and GYOT programs. Interviews with the Director and Assistant Director of Enrollment Services/Student Development revealed the department's perception of education deserts, Teacher Cadet/Grow Your Own Teacher programs, teacher shortages, and the recruitment practices of ABC College. The qualitative data gathered from the face-to-face interviews proved imperative to the study.

When interviews were completed and transcribed, four major themes emerged based on open and axial coding. These major themes included the following: (1) education desert concepts, (2) Teacher Cadet and GYOT program inconsistencies, (3) teacher shortage perceptions, and (4) recruitment gaps. Chapter Five includes discussion of study findings, conclusions, and recommendations resulting from the analysis of this study.

Chapter Five: Summary and Conclusions

Teacher shortages continue to be present throughout areas identified as highly qualified, and shortages extend beyond just highly qualified in rural public-schools (Learning First Alliance, 2017). In an effort to address teacher shortages across the nation, state departments charged with certification and licensure of teachers have created alternative routes to licensure (Dittfurth, 2015). Even with the initiation of alternative certification for subject-matter experts, rural public-schools consistently struggle with recruiting and retaining highly qualified teachers (Green, 2013). Exacerbating the teacher shortage issue is the existence of education deserts which limit access to higher education for students within rural communities (Hillman & Weichman, 2016).

The purpose of this study was to identify the barriers to aspiring teacher education candidates in the rural community college setting and to identify factors of choice for teacher education degree selection. Additionally, the researcher examined the influence of Teacher Cadet and GYOT programs within the area, which is served by the rural community college of the study. Chapter Five includes a discussion of the findings, conclusions, and recommendations for further research based on this study.

Findings

An online survey was sent via electronic mail to the total aspiring teacher education population of ABC College via Qualtrics. Of the 350 surveys sent, a total of 48 surveys were returned over a 30-day period. Quantitative survey data were analyzed, and tables and figures were created to illustrate the results based upon questions posed.

For the qualitative portion of the study, the Director of Enrollment Services/Student Development and the Assistant Director of Enrollment Services/Student

Development were interviewed. The interviews were conducted face-to-face and at the convenience of the interviewees. The interviews were audio recorded, with the permission of the interviewees, and then transcribed. The interviews were authentic and in the spoken language of the interviewees. Interview data were analyzed using open and axial coding methods to classify trends and themes (Creswell & Poth, 2018). Based on the deliberate analysis of all data collected, responses to the research questions were resolved.

Research question one. What are the factors of choice for aspiring teacher education candidates when choosing among Early Childhood Education, Elementary Education, Middle School Education, and High School Education teaching degrees?

Using data collected from the survey was constructive in determining a basic understanding of the components that influence potential teacher education students to select their respective degrees. Aspiring teacher education candidates enrolled at ABC College indicated previous classroom experience was the largest factor for choosing their education degree (31.67%). Overall understanding of the job description associated with a particular teacher education degree was indicated by 30% of aspiring teacher education candidates. Survey questions one through eight were designed with the intent to gather information regarding the components of rurality which affect degree selection of aspiring teacher education candidates.

The results of the first eight survey questions revealed previous classroom experience within the grade level associated with each candidate's associated degree was the largest factor in teacher education degree choice. Additionally, aspiring teacher education candidates indicated their overall understanding of the responsibilities and

opportunities associated with the degrees they had chosen was instrumental in their degree choice. Finally, the potential job outlook for the teacher education degree selected was an identifiable factor in teacher education degree selection. The data alone do not qualify the understanding of aspiring teacher education candidates in terms of the extent of accuracy for the factors identified.

Research question two. What percentage of aspiring teacher education candidates at ABC College participated in a Teacher Cadet or Grow Your Own Teacher program during high school?

The existence of both Teacher Cadet and GYOT programs were indicated within various high school settings of the aspiring teacher education candidates completing the survey. Qualifying statements were offered to survey recipients in regards to the design and model of both Teacher Cadet and GYOT programs. Aspiring teacher education candidate respondents indicated Teacher Cadet programs were widespread through the service area of ABC College; however, GYOT programs were revealed to be limited.

Following examination of the criteria that define a Teacher Cadet program, data analysis provided a level of certainty that aspiring teacher education candidate respondents have a complete understanding of Teacher Cadet programs. However, criteria examined revealed misconceptions in regard to GYOT programs according to literature researched during this study. Survey questions nine through fifteen were formulated with the intent to gather information about the existence and participation of both Teacher Cadet and GYOT programs within the service area of the rural community college of this study.

Research question three. What are the barriers to completion of a bachelor's degree for teacher education students in rural areas who wish to complete a degree in Early Childhood Education, Elementary Education, Middle School Education, and Secondary Education?

Aspiring teacher education candidate respondents indicated the greatest barrier to degree completion was conflicting work and college course scheduling. The identification of this barrier may indicate teacher education respondents are working either part-time or full-time jobs while pursuing a teacher education degree. Whether teacher education survey respondents were part-time or full-time students was not included as a qualifier for the survey.

Additionally, teacher education survey respondents indicated child care and family responsibilities were barriers to their successful degree completion. Finally, financial aid for the completion of their college degrees was indicated as a barrier to successful completion. Survey question eighteen was designed with the intent to gather information in regard to the barriers inhibiting the successful completion of a teacher education degree at the rural community college of this study.

Research question four. How does ABC College recruit students to meet the need for teachers in education desert areas?

Interview data collected from interviews with the Director and Assistant Director of Enrollment Services/Student Development at ABC College detailed their experience with Teacher Cadet programs and GYOT programs as defined by this study (MODESE, 2016). The analysis of interview data provided detailed information regarding the existence or lack thereof of Teacher Cadet and GYOT programs. Interview data

collected revealed an uncertainty regarding the model and role of Teacher Cadet programs within area high schools serviced by the rural community college in this study.

Discussion regarding Teacher Cadet programs and GYOT programs in the ABC College service area by the Director and Assistant Director of Enrollment Services/Student Development revealed Teacher Cadet programs are misleading by their title. An outsider to education might assume a Teacher Cadet program was designed to “train or grow” a future teacher. While this may have been the original intent, this study revealed these programs are not utilized as programs for the recruitment of teachers. Many area high schools offer programs for students to earn community service hours, some of these programs are referred to as Teacher Cadet programs. The study indicates there are no specific guidelines for student participation that indicates the participating student has an interest in teaching as a profession.

In regard to GYOT programs, the study indicates that GYOT programs, as defined by this study, do not exist in the service area of ABC College. You’re your Own Teacher programs are contractual agreements between aspiring teacher education candidates, public-school districts, and institutions of higher education. Data collected from this study revealed GYOT programs as defined by this study do not exist within the areas serviced by ABC College.

In addition, data gathered from interviews revealed a lack of understanding of the term education desert as defined throughout the study. Zalaznick (2016) defined an education desert as any area without colleges or universities located nearby, or with only one community college, similar to ABC College. Discussions with both the Director and

Assistant Director of Enrollment Services/Student Development revealed misconceptions of the term education deserts.

Finally, interview data revealed ABC College has a broad model for student recruitment that includes all programs of study at the college. However, ABC College's model of recruitment does not specifically recruit for teacher education. Interview data collected identified gaps within the recruitment of potential teacher education candidates. Throughout the discussion regarding teacher education program recruitment, the Director and Assistant Director's responses pointed toward a breakdown in communication between college departments, limited recruitment resources, and uncertainty of teacher shortages as possible gaps in teacher education recruitment.

Additional interview data collected indicated that both the Director and Assistant Director possessed some background knowledge of the existence of teacher shortages. However, both interviewees indicated while they were aware that literature frequently circulated where teacher shortages were mentioned, they were unsure of the extent or the causation. Furthermore, the Director and Assistant Director expressed their uncertainty regarding teacher shortages specific to the area serviced by the rural community college in this study.

Data collected during interviews indicated the understanding of large numbers of vacant teaching positions annually within the public-school districts serviced by ABC College. Both the Director and Assistant Director were uncertain if the vacancies are representative of teacher shortages or the cyclical ebb and flow of all professional careers. However, the causation of these vacancies was undetermined by the data collection of this study.

Conclusions

Survey data collected from aspiring teacher education candidate respondents revealed identifiable factors for their selection of teacher education degrees. Teacher education respondents indicated prior classroom experiences to be the greatest factor in their degree selection. McClay and McAllister (2014) substantiated the importance of place to be instrumental with an individual's well-being. Moreover, Milatz et al. (2015) found teachers express a need for the connection between teacher and student; this relatedness provides the platform for the teacher's success within the classroom.

Prior classroom experiences, as expressed by teacher education respondents, was supported by Wyatt (2015), who indicated individuals understand their own identities when viewed from personal cultural experience. Additional factors indicated by teacher education respondents included overall understanding of the expectations of teaching and potential job outlook. These factors were supported by the research of Cochran-Smith and Villegas (2015), who marked the importance of connectedness to the individual's environment and relatedness to socioeconomic status.

Teacher Cadet programs and GYOT program data were consistent with the literature reviewed for this study. Programs referred to as *Teacher Cadet Programs* are widespread within area high schools serviced by the rural community college in this study (MODESE, 2016). However, the design, model, and function of these Teacher Cadet programs were not indicative of a participant's desire to choose teaching as a profession.

Literature reviewed in this study indicated GYOT programs are primarily urban-centric (Toshalis, 2014). Survey respondent data collection and analysis revealed no

clear indication of GYOT programs within high schools serviced by the rural community college in this study. While two survey respondents indicated their participation in GYOT programs, interview data dispute this identification. This discrepancy lends itself to implications for further study of GYOT programs. Gist et al. (2018) determined while numerous states have committed to the establishment or expansion of GYOT programs, these programs are centered in or near urban areas.

Consequently, Teacher Cadet and GYOT programs cannot be considered influential in the recruitment or creation of future teachers. The existence or effective nonexistence of GYOT programs was indicated by the literature review of this study. Gist et al. (2018) recorded while various states have committed to a GYOT initiative, the majority of these programs are urban-centric.

Interview data collected and analyzed suggested gaps in the recruitment of teacher education candidates. Interviewee responses revealed the break-down of communication and limited resources in the form of funding and personnel, which contributes to gaps in the effective recruitment of teacher education candidates.

Implications for Practice

Rural school districts consistently face the challenge of recruiting and retaining qualified teachers (Learning First Alliance, 2017). Furthermore, traditional teacher preparation programs consistently experience declining enrollment (Center for Public Education, 2016). In areas identified as education deserts, potential college students struggle with limited access to higher education opportunities (Zalaznick, 2016).

One implication identified through data analysis is the potential to use existing Teacher Cadet programs as effective recruitment tools for the creation of a teacher

pipeline. Teacher Cadet programs identified within this study are both well-established in area high schools and consistently funded by the state. Numerous area high schools within the service area of the rural community college in this study utilize Teacher Cadet programs to provide scholarships to potential college students.

Interview data collected revealed ABC College has a preexisting working relationship with area school counselors. Collaboration among the teacher education department of ABC College, the office of Enrollment Services/Student Development, and area high schools could potentially lead to the design and implementation of a student recruitment model utilizing existing Teacher Cadet programs. The first step would be to identify potential future teachers in high schools. School districts might collaborate to determine effective and desirable characteristics for future teachers who would then return to their school districts as beginning teachers.

Following the establishment of these criteria, school counselors, teachers, and administrators might review all students who qualify for the already existing parameters of current Teacher Cadet programs. Students who possess the desirable characteristics of teachers might then be mentored through the Teacher Cadet programs. Additionally, identified candidates might be provided specific placement within classrooms where their involvement and engagement with students would go beyond the tutoring and managerial duties which exist in current Teacher Cadet programs. Providing these potential students with opportunities to expand on their interest in teaching could provide an incentive to explore teaching as a profession.

Mentoring within the public-school district might then expand to pre-collegiate advising from an institution of higher education either through recruiters or student

advisors. Higher education advising might involve meeting with aspiring teacher education candidates and school counselors each semester to ensure students stay on-track for high school graduation.

In addition, pre-collegiate advising would allow aspiring teacher education candidates to select the appropriate high school coursework to be better prepare for college. Pre-collegiate advising preparing aspiring teacher education candidates to be college ready would allow for the maximization of the scholarships associated with the existing Teacher Cadet programs. Aspiring teacher education candidates who had been mentored to select college preparatory coursework would then reserve a larger quantity of scholarship funds for use through their first two years of college tuition.

Additionally, these potential future teachers could be counseled by ABC College in regard to the various teacher education programs offered at the rural community college setting. This counseling could then be expanded to allow aspiring teacher education candidates to explore elementary education, middle school education, and secondary education through their Teacher Cadet programs. Increasing their engagement and observation at the public-school level might assist these aspiring teacher education candidates to better determine the teacher education degree that best fits their characteristics. With established relationships already in existence between area high schools and the rural community college, expanding this connection might be easily accomplished.

A second implication identified through the analysis of data from this study is the need for stronger collaboration and consistent communication among college departments within institutions of higher education. Governmental budget cuts, limited

resources, and responses to changes within political initiatives were indicated as deterrents effective recruitment efforts of ABC College. Additionally, misconceptions regarding teacher shortages and education deserts might contribute to gaps identified within teacher education candidate recruitment efforts.

Collaboration between the Teacher Education Department of ABC College and the Department of Enrollment Services/Student Development of ABC College might be the first step in addressing the breakdown of communication. Establishing consistent communication in regard to revised teacher education curriculum, teacher education certification requirements, and teacher education shortages prevalent in the area served by the rural community college might then initiate conditions to address leaks in the teacher pipeline.

Additionally, this collaboration might be expanded to encompass area public-school districts to identify probable teacher vacancies and impending needs. This collaboration between stakeholders could be expanded to encompass the collaboration between pre-collegiate advising within Teacher Cadet programs to further solidify the teacher pipeline within the rural community college service area. Initiating contact at the high school level and mentoring these potential students throughout their high school career and ultimately the college enrollment process could identify potential candidates for teacher education preparation. While funding for Teacher Cadet programs is already in existence and not necessarily perceived as a “new” funding stream, the design of a collaborative Teacher Cadet program could potentially create an expansion of the existing student body utilizing this program, fundamentally creating a wider funding stream.

Recommendations for Future Research

This study could be strengthened through additional research on Teacher Cadet and GYOT programs. Additional research might include specific research on Teacher Cadet programs currently available in the high school setting. Additionally, this research might be expanded to determine the placement criteria used to enroll high school students in these programs.

High School Principals and School Counselors from public-school districts with existing Teacher Cadet programs might be interviewed to evaluate the potential for designing these programs as vehicles for teacher preparation. Expanding this focus may lead to a better understanding of Teacher Cadet programs in terms of how they are independently designed at area high schools.

Grow Your Own Teacher programs could be researched to determine if institutions of higher education and public-school districts are utilizing these programs for teacher education preparation beyond urban areas, which would expand the literature available to institutions of higher education located within rural settings. Public-school districts might be surveyed to determine the existence of GYOT programs, the evaluation of their design, and any contribution to the teacher pipeline. Data collected in this study were inconclusive in regard to the existence of GYOT programs in rural areas. Furthermore, GYOT research might provide insight into possible funding streams for the creation of these programs.

Summary

Teacher shortages are prevalent in rural communities throughout the nation (Learning First Alliance, 2017). Science, mathematics, engineering, and special

education shortages exist across the nation (Center for Public Education, 2016). Rural school districts share these same shortages as well as shortages in all grade levels and subject areas (Center for Public Education, 2016). Measures to address these issues have included the institution of alternative certification (Dittfurth, 2015). However, significant teacher shortages still exist.

Adding to the plight of teacher shortages is the declining enrollment in traditional teacher preparation programs (Jange & Horn, 2017). Adding to the circumstances of teacher shortages is the existence of education deserts—areas identified as having no institutions of higher education or only one community college (Hillman & Weichman, 2016).

This study was designed to provide information regarding the factors that affect teacher education degree selection by teacher education candidates in the rural community college setting. In addition, the study was intended to determine the existence and possible influence of Teacher Cadet and GYOT programs on the degree selection of aspiring teacher education candidates. Furthermore, this study was aimed at identifying any barriers presented to aspiring teacher education candidates in the successful completion of their teacher education degrees. Finally, the study was designed to provide information regarding the methods designed specifically to recruit teacher education candidates at the rural community college in this study.

Survey data revealed factors associated with place consciousness to be a significant influence on the degree selection of aspiring teacher education candidates. In addition, survey data revealed a possible misconception of the purpose of Teacher Cadet programs in the service area of the rural community college of this study. Survey data

disclosed the absence of GYOT programs in the public-school districts served by ABC College. Barriers to the successful completion of a teacher education degree were revealed to center around components of work/life balance experienced within rural communities. While these components are not exclusive to rural communities, they are historically relevant in rural communities.

Interview data divulged misconceptions of numerous areas identified in the literature review of this study. Interviewees indicated limited background knowledge of education deserts and teacher shortages. In addition, interview data exposed obvious gaps in recruitment efforts of potential teacher education students.

The purpose of this study was to address areas of concern that may contribute to teacher shortages in rural school districts. The findings of this study may influence the practices of both public-school districts and institutions of higher education in relation to models for the design and implementation of teacher pipelines. The methodology and data analysis in this study could be applied to any higher education institution located within a rural education desert.

Appendix A

Lindenwood IRB Approval Letter

Oct 25, 2018 4:11 PM CDT

RE:

IRB-19-55: Initial - The Effects of Rurality and Education Deserts on the Four-Year Degree Selection of Aspiring Teacher Education Candidates in a Rural Community College Setting

Dear Alice Sanders,

The study, The Effects of Rurality and Education Deserts on the Four-Year Degree Selection of Aspiring Teacher Education Candidates in a Rural Community College Setting, has been Exempt.

Category: Category 1. Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

The submission was approved on October 25, 2018.

Sincerely,

Lindenwood University (lindenwood) Institutional Review Board

Appendix B

Information Letter

< Survey >

<Date>

My name is Alice Sanders, and I am pursuing a Doctorate of Educational Leadership degree at Lindenwood University in St. Charles, MO. You are invited to take part in this research study, which I am conducting as a part of the requirements of my degree. The title of my study is, *The Effects of Ruralty and Education Deserts on the Four-Year Degree Selection of Aspiring Teacher Education Candidates in a Rural Community College Setting*.

The purpose of this study is the identification of barriers presented to the success of aspiring teacher education candidates in areas determined *rural education deserts*, the existence/absence of Grow Your Own Teacher (GYOT)/cadet programs, and the identification of factors which influence the four-year degree selection of aspiring teacher education candidates.

If you choose to take part in this study, you will be asked to complete an online survey. The information will be presented in a dissertation in which your identity will not be revealed. All data collected will be stored securely for three years after the conclusion of the study and will then be destroyed.

I do not anticipate any risk associated with your participation in this research study. Participation in this project is voluntary. You are free to withdraw at any time, and there will be no penalty for doing so.

If you would like to take part in the study, please read the consent form. You may access the survey by clicking the designated link.

Thank you for your time,

Alice Sanders
Doctoral Student

Appendix C

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Alice Sanders at Lindenwood University. We are conducting this study to identify the barriers presented to the success of aspiring teacher education candidates in areas determined *rural education deserts*, the existence/absence of Grow Your Own Teacher (GYOT)/cadet programs, and the identification of factors which influence the four-year degree selection of aspiring teacher education candidates.

It will take about 20 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Alice Sanders at [REDACTED]

Dr. Julie Williams at [REDACTED]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael

Leary (Director - Institutional Review Board) at 636-949-4730 or
mleary@lindenwood.edu.

By clicking the **link** below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Appendix D

Survey

1. List the county from which you graduated high school.
2. Do you intend to return to this county to teach upon the completion of your four-year degree?
 - a. Yes
 - b. No
3. If you are not returning to the county to teach, please explain why.
4. What is your intended degree within the college of education?
5. Do you plan to teach within the grade levels of the degree for which you currently have declared a major?

For example: If your major is elementary education, do you intend to teach within grades 1 through 6? If your major is middle school education, do you intend to teach within grades 5 through 9? If your major is secondary (high school) education, do you intend to teach within grades 9 through 12?

- a. Yes
 - b. No
6. Which of the following factors have contributed to your teacher education degree selection?
 - *Overall job description (your understanding of the responsibilities of the particular grade level for which the degree will allow you to teach)*
 - *Training or education required for the completion of the degree (courses required, standardized testing required for certification)*
 - *Expected career outlook (availability of open teaching positions in the particular field)*
 - *Ease of completion of bachelor's degree (degree completion is provided on this campus)*
 - *Completion of bachelor's degree does not require relocation*
 - *Previous experience (have worked within the grade level/levels as a substitute, paraprofessional, or teacher's aide)*
 - *Other.*
 7. Have you changed your selection of major (grade level of teaching degree) while attending this college?
 - a. Yes
 - b. No

8. If you answered yes to Question #7, was this change of major due to any of the following conditions? Please select all that apply:
- *After initial required classroom observations/engagement hours in the public-school setting, I reconsidered the grade level/levels I wish to teach.*
 - *Courses required for completion of the degree (middle school and/or high school teacher education degrees require more discipline-specific coursework). For example, a middle school history teacher must complete approximately 24-30 additional hours of history or social science coursework.*
 - *Geographical ease of completion of bachelor's degree (the degree I selected can be completed on the campus of this college without relocation/travel to a four-year higher education institution).*
 - *Expected career outlook (more available teaching positions are offered annually in the area to which I have changed my degree).*
 - *Other*

9. The following four questions address Teacher Cadet programs and Grow Your Own Teacher programs.

Teacher Cadet programs may be offered during the junior or senior year of high school to students who feel they may have an interest in teaching as a profession. Typically, Teacher Cadet programs do not obligate the participating student to return to the participating school district to teach upon graduation with a four-year bachelor's degree.

Grow Your Own Teacher programs are designed by public-school districts to identify juniors or seniors in high school who display the qualities the school district deems to be desirable for future teachers. Grow Your Own Teacher programs are deemed as recruitment programs for the school district, and enrollment in these programs may offer participating students scholarship opportunities that may be applied to the pursuit of a teacher education degree. Acceptance of such scholarships is perceived as a contractual obligation to return to the participating school district to teach for a specified number of years.

Did the high school from which you graduated offer a teacher cadet program? A teacher cadet program offers high school students the opportunity to work within an existing classroom as a tutor/cadet teacher. If answering yes, please provide the name of the participating high school in questions #10.

- a. Yes
- b. No

10. If you answered yes to Question #9, please list the name of the high school.

11. If the high school from which you graduated offered a teacher cadet/tutor program, did you participate in this program?

- a. Yes
- b. No

12. If answering No to question #11, please explain why you did not participate.

13. Does the high school from which you graduated participate in a Grow Your Own Teacher program?

Grow Your Own Teacher programs are implemented by public-school districts and community partners and may identify prospective teacher education candidates. These candidates may be offered scholarships or tuition reimbursement in exchange for the agreement to return to the participating school district as a beginning teacher.

- a. Yes
- b. No

14. Are you a participant in a Grow Your Own Teacher program?

- a. Yes
- b. No

15. If you answered yes to Question #14, please list the participating high school.

16. Upon the completion of your associate's degree, to which four-year institution do you intend to transfer to complete your bachelor's degree?

- I plan to transfer to one of the three participating institutions found upon the Poplar Bluff campus
- I plan to transfer to an institution not found upon the Poplar Bluff campus
- I am unsure where I will transfer

17. Why have you chosen the particular institution listed in Question #16?

- I am unable to relocate from this area in order to complete a four-year degree
- I plan to relocate to complete a four-year degree
- Other

18. Please check any barriers that have been presented to you during your pursuit of your teaching degree. *Please check all barriers that apply.*

- Distance to college campus
- Financial aid available to complete degree
- Child care/family responsibilities
- Work/college schedule conflicts
- Academic preparedness (required completion of transitional courses prior to college-ready courses)
- Other

Appendix E

Information Letter

< Interview >

<Date>

My name is Alice Sanders, and I am pursuing a Doctorate of Educational Leadership degree at Lindenwood University in St. Charles, MO. You are invited to take part in this research study, which I am conducting as a part of the requirements of my degree. The title of my study is *The Effects of Rurality and Education Deserts on the Four-Year Degree Selection of Aspiring Teacher Education Candidates in a Rural Community College Setting*.

The purpose of this study is the identification of barriers presented to the success of aspiring teacher education candidates in areas determined *rural education deserts*, the existence/absence of Grow Your Own Teacher (GYOT)/cadet programs, and the identification of factors which influence the four-year degree selection of aspiring teacher education candidates.

If you choose to take part in this study, you will be asked to participate in a face-to-face interview. The information will be presented in a dissertation in which your identity will not be revealed. All data collected will be stored securely for three years after the conclusion of the study and will then be destroyed.

I do not anticipate any risk associated with your participation in this research study. Participation in this project is voluntary. You are free to withdraw at any time, and there will be no penalty for doing so.

If you would like to take part in the study, please read the consent form. Then, with your permission, I will contact you to schedule a day and time convenient to conduct the interview.

Thank you for your time,

Alice Sanders
Doctoral Student

Appendix F**LINDENWOOD**

<Interview>

Research Information Sheet

You are being asked to participate in a research study. I am conducting this study to identify the barriers presented to the success of aspiring teacher education candidates in areas determined *rural education deserts*, the existence/absence of Grow Your Own Teacher (GYOT)/cadet programs, and the identification of factors which influence the four-year degree selection of aspiring teacher education candidates.

During this study you will complete a face-to-face interview with the primary investigator of the study. It will take about 30 minutes to complete the interview. The interview will be audiotaped to assure I record your responses accurately.

Your participation is voluntary. You may choose not to participate or to withdraw at any time.

There are no risks from participating in this project. There are no direct benefits for you participating in this study.

We will not collect any data which may identify you.

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data include members of the research team, qualified staff of Lindenwood University, and representatives of state or federal agencies.

Who can I contact with questions?

If you have concerns or complaints about this project, please use the following contact information:

Alice Sanders at [REDACTED]

Dr. Julie Williams at [REDACTED]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

Appendix G

Face-to-Face Interview Questions

1. What is your definition of the term *education deserts*?
2. Zalaznick (2016) defined an education desert as an area without any colleges or universities located nearby, or with one public broad-access community college. Considering this definition, do you feel ABC College resides in an education desert?
3. Are you familiar with Teacher Cadet programs? If so, please describe the design.
4. Approximately how many Teacher Cadet programs exist in area high schools within the service area of ABC College?
5. What influence do Teacher Cadet programs have on ABC College, if any?
6. Are you familiar with Grow Your Own Teacher Programs? If so, please describe the design of the Grow Your Own Teacher Programs with which you are familiar.
7. Approximately how many Grow Your Own Teacher Programs exist in area high schools within the service area of ABC College?
8. What influences do Grow Your Own Teacher Programs have on ABC College, if any?
9. What is your perception of possible teacher shortages in the service area of ABC College and the public-school districts served within this area?
10. Does your department address possible teacher shortages through recruitment strategies?
11. Please describe the recruitment model used by ABC College.
12. Please describe the teacher education recruitment efforts used by your department, if any.

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Vita

Alice Faye Sanders was born and raised on her family farm in Southeast Missouri. Her career in education began as a school bus driver in Bloomfield, Missouri. Following the completion of her Bachelor of Science degree in education, she became a high school science teacher in the Bloomfield R-14 School District. From there, she moved to Three Rivers College in Poplar Bluff, Missouri, as an instructor in Teacher Education. Mrs. Sanders then became the Coordinator of Teacher Education and Distance Learning Specialist at Three Rivers College, where she continues to serve.

Alice holds a Bachelor of Science degree in Middle School Education with a concentration in Mathematics and Science and a Master of Education degree in Secondary Administration from William Woods University in Fulton, Missouri.