

# Building Special Education Teacher Capacity in Rural Schools: Impact of a Grow Your Own Program

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## Abstract

Rural education has a legacy of unique challenges, with highest priority needs in the South. Chief among these challenges are the conditions of poverty associated with many rural districts and the education of students with disabilities. Compared with their urban and suburban counterparts, rural teachers experience higher rates of turnover, and rural schools find it more difficult to recruit teachers from the start. The purpose of this study was to determine the extent to which a grow your own (GYO) program equitably increased special education teacher capacity in one Southern state's rural and non-rural school districts. The sample included 638 participants who completed special education teacher licensure programs over the 8-year period, 2003-2011. Statistical analysis revealed a significant difference in one demographic variable, licensure area. The rural group had disproportionately fewer program completers in emotional disabilities and more in multi-categorical. Additional analysis showed a significantly higher percentage of program completers in the rural group. Limitations and implications for future research are discussed.

*Keywords:* professional development, employment/work

Few would dispute the importance of rural students in the broader community of K-12 learners. Compelling data underscore their widespread presence. Rural students exceed 9.7 million, account for more than 20% of the nation's public school student population, and reflect one-third or more of public school enrollments in 16 states (Johnson, Showalter, Klein, & Lester, 2014). Acknowledging that growth rates of rural students have far outpaced that of their non-rural counterparts over many years, Johnson et al. rightly concluded "the scale and the scope of rural education in the United States continues to grow" (p. 27).

## *The Rural South*

A multi-faceted analysis by the Rural School and Community Trust (Johnson et al., 2014) ranked the overall status of rural education in each of the 50 states on five gauges: (a) importance, (b) student and family diversity, (c) educational policy context, (d) educational outcomes, and (e) longitudinal. The highest priority needs, as indicated by the aggregated average of gauge rankings, were found in the following five states (average ranking in parentheses): Mississippi (6.0), Alabama (8.2), South Carolina (10.6), North Carolina (11.2), and

Arizona (12.2). Observably, four of the five states are located geographically in the South (U.S. Census Bureau [USCB], 2014).

Southern rural communities are currently undergoing dramatic changes in terms of their racial, cultural, and economic profiles. For the first time in more than 40 years, the South was the only region in the nation where low-income children constituted a majority (54%) of public school students (Suitts, Sabree, & Dunn, 2013). In addition, the South was the singular region in the country in 2011 where most rural public school children resided in low-income households (51%). In comparison, percentages in the West, Midwest, and Northeast were 44%, 36%, and 29%, respectively. These economic shifts are pertinent in light of the fact that slightly more than half (51.4%) of the U.S. population (2000-2009) growth was concentrated in the South (Johnson & Kasarda, 2011; Parrado & Kandel, 2010).

Other changing demographics, such as race/ethnicity in the student population, are reshaping the way quality rural education should be delivered. The region of the country that realized the largest minority growth among school-age students over the 10-year period, 2001 to 2011, was the

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South, specifically, with Hispanics, American Indians/Alaska Natives, and multiple races (National Center for Education Statistics, 2014). In the five Southern states of Arkansas, Georgia, North Carolina, South Carolina, and Tennessee, the largest growth occurred with Hispanic students from 2000 to 2006 (USCB, 2006). Clearly, demographic changes are creating a new melting pot of students in rural schools. Forecasting a national education dilemma, Johnson (2009) described the situation as a “train wreck waiting to happen if we don’t figure out how to educate the new majority” (p. 22) of learners in America. By broadening instructional repertoires, for example, implementing culturally responsive teaching (Morgan, 2010; Richards, Brown, & Forde, 2006), rural teachers may maximize their effectiveness with minority students.

### *Rural Challenges*

**Student success.** Rural education has a legacy of unique challenges. Chief among them are factors influencing student success. In terms of retention, rural areas are experiencing an 11% dropout rate (Provasnik et al., 2007), a figure statistically comparable to the highest dropout rate of 13% found in urban areas (National Center for Education Statistics, 2014). Moreover, rural students are less likely to graduate late (i.e., through completion of a general educational development [GED] credential or equivalent) than their peers in urban or suburban areas (Center for Public Education, 2009). It follows that academic achievement is lower among rural learners (Graham & Provost, 2012; Graham & Teague, 2011). With regard to teacher impact, there is a greater likelihood that fewer highly prepared teachers are employed in rural schools (Gibbs, 2000; Monk, 2007). When compared with their urban and suburban counterparts, rural teachers experience higher rates of turnover, and rural schools find it more difficult to recruit teachers from the start (Hodges, Tippins, & Oliver, 2013).

**Special education.** Educating students with disabilities poses extraordinary struggles for rural schools. Mitchem, Kossar, and Ludlow (2006) noted that lower available funding, coupled with higher implementation costs associated with providing specialized services, complicate special education delivery in rural school districts. Frequently, special educators may teach students outside their area of professional preparation and licensure (Berry, Petrin, Gravelle, & Farmer, 2011) and lack access to assistive technologies and instructional resources available in non-rural districts (Ault, Bausch, & McLaren, 2013). Special educators may be required to have additional expertise, such as assisting families in finding and/or providing support services not readily available in rural settings (Carr, 2000). Finding and retaining highly qualified teachers, particularly special educators, is exceedingly difficult in rural and low-wealth areas (Brownell, Hirsch, & Seo, 2004; Dadisman, Gravelle, Farmer, & Petrin, 2010).

**Poverty.** The conditions of poverty further compound the issues surrounding provision of equitable education in rural areas. Strange, Johnson, Showalter, and Klein (2012) maintained that “rural schools are becoming more complex with increasing rates of poverty” (p. 21), thereby bolstering the relationship between ruralism and poverty. Fully a decade ago,

Darling-Hammond (2004) held that, “Large disparities . . . exist in the educational opportunities available to rich and poor students in most states” (p. 1936). Further, teachers in high-poverty schools tend to be poorly and inadequately prepared (National Partnership for Teaching in At-Risk Schools [NPTARS], 2005). Elliot’s (2013) examination of 20 years of longitudinal data concluded that children living in poor families have lower academic achievement scores, lower high school graduation rates, lower college enrollment rates, and lower college graduation rates than children living in families that are asset sufficient. One problem characterizing high poverty schools is under-funding (Darling-Hammond, 2013). Moreover, evidence from a U.S. Department of Education study (Heuer & Stullich, 2011) found that public schools with students needing the greatest help tend to receive the least funding.

### *Building Teacher Capacity*

Central to the rural education challenges of student success, special education, and poverty is the inability of most states to employ highly qualified teachers. When the No Child Left Behind Act (NCLB, 2001) was enacted, many states were facing significant challenges in staffing schools with highly qualified teachers, particularly special education teachers (Fideler, Foster, & Schwartz, 2000; Shepard & Brown, 2003). The nationwide critical need for fully credentialed special education teachers has been characterized as severe, chronic, and pervasive (Billingsley & McLeskey, 2004; Gehrke, & McCoy, 2007; Olivarez & Arnold, 2006). Considerable shortages of special educators persist in most states (American Association for Employment in Education, 2007; Higher Education Consortium in Special Education, n.d.). Moreover, employment in special education teaching is expected to increase by 17% by 2020 (U.S. Department of Labor [USDOL], 2012) due to growth in the number of students with disabilities and teacher demand. Better job opportunities in special education may be available in certain regions of the country, specifically the South, West, and rural areas (USDOL, 2014b).

To address shortages and to build a qualified, credentialed special education teacher work force, many states have implemented grow your own (GYO) programs (Butler, 2008; Müller, 2012) that include alternative routes to certification (ARC) approaches (Dukes, Darling, & Doan, 2014; Rosenberg & Walther-Thomas, 2014; USDOL, 2014a). Yet, we know little about the nature/efficacy of ARC (Humphrey & Wechsler, 2007) and GYO programs. In addition, “unbridled program development and the scarcity of existing literature . . . [have] created a situation that cries out for additional research” (Rosenberg & Sindelar, 2005, p. 126). Interestingly, NPTARS (2005) has questioned the efficacy of teacher capacity-building initiatives, arguing,

Efforts to improve the quality of teachers in high-poverty, low-performing schools have been largely uneven and unfocused. States or districts may tackle the general problem of teacher supply, for instance, and assume that increasing the number of teachers will benefit all schools, including those that are hardest to staff. But . . . the positive effects of such broad efforts rarely trickle down to the most vulnerable schools. (pp. 3-4)

## *South Carolina Initiative*

In 2001, when NCLB was enacted, 36% of special educators in South Carolina were employed as full-time substitutes or were teaching on emergency licenses, and 32% of all teacher vacancies were in special education (South Carolina Center for Educator Recruitment, Retentions and Advancement, 2001). By 2002–2003, the number of teachers not appropriately licensed in special education in South Carolina public schools had catapulted to more than 400 (Sutton, Gurganus, Hodge, & Marshall, 2003). Difficulties meeting the NCLB mandate were further compounded by the long-standing problems associated with adequately staffing (Berry et al., 2011; Berry, 2012) and retaining special educators (Lemke, 2010; Ludlow & Brannan, 2010) in rural settings.

For purposes of curtailing the burgeoning population of non-licensed special educators, the South Carolina Department of Education (SCDE) Office of Special Education Services (OSSES) adopted a GYO goal. Subsequently, in 2003–2004, they funded Year 1 of Project CREATE (Centers for the Re-education and Advancement of Teachers in special education; Sutton et al., 2003) consisting of regional teacher re-education centers (Adelman, 1986; Kneedler & Sutton, 1987) at leading universities across the state. From the outset, the chief mission of CREATE has been to reduce the number of non-licensed special education teachers while simultaneously growing the number of highly qualified special education teachers in the state's public and charter schools.

By underwriting tuition and textbook costs, qualified participants have been able to complete needed course work through CREATE in order to obtain add-on, alternative, or initial licensure in special education, thereby better enabling them to teach students with disabilities more effectively. CREATE represents a three-way collaboration between SCDE, 84 local education agencies (LEA), and 13 institutions of higher education (IHE), each with its own unique contribution to the project: SCDE underwrites project costs; LEAs refer/recommend participants; and IHEs deliver licensure course work.

Collaboration of IHEs with LEAs and state departments of education is not a novel concept. Johnson and Kasarda (2011) have urged colleges and universities to play a more integral role in redirecting the decline in the quality of public education. They contend that primary attention be given to schools undergoing significant changes in social, economic, and cultural student demographics (i.e., rural schools). Specifically, IHEs must begin “moving away from their inward-focused ivory tower orientation and become more outward-focused” (p. 14). In a comprehensive study that examined the implementation of the Individuals with Disabilities Education Act (IDEA) in rural settings, Williams, Martin and Hess (2010) found that the challenges presented by rural conditions require that “state departments of education and local education agencies must be involved with institutions of higher education in the preparation of qualified personnel to meet the needs of students with disabilities in rural settings” (p. 33).

South Carolina's Project CREATE has been recognized nationally by the greater professional education community (e.g., DuRant, Poda, & Sutton, 2007; Njuguna, 2011; Poda & Sutton, 2007; Sutton, Bausmith, O'Connor, & Pae, 2009, 2010; Sutton, Bausmith, O'Connor, Pae, & Skinner, 2012,

2014; Sutton & DuRant, 2007, 2008a, 2008b; Sutton & Pae, 2012). Now in its 12th year of operation (2014–2015), CREATE may be the longest, continually operating initiative of its kind in the country. The National Association of State Directors of Special Education's (NASDSE) Personnel Improvement Center (Muller, 2011, 2012; Sutton & McGovern, 2013) has identified CREATE as one of only a few model, state-level GYO special education teacher preparation initiatives in the nation.

Data from the Year 10 CREATE final report (Sutton et al., 2014) provides empirical evidence that CREATE, as a personnel preparation initiative, has virtually erased the number of non-licensed special education teachers in South Carolina while simultaneously increasing teacher capacity; however, a shift in the national discussion (e.g., American Institutes for Research, 2014; Laine, 2012) focuses on whether equitable distribution of teachers from capacity-building efforts is actually occurring in schools, especially hard-to-staff, low-performing, high poverty schools found in rural areas.

The purpose of this study, then, was to determine the extent to which CREATE's capacity building success has resulted in equitable distribution across South Carolina rural and non-rural school districts. We investigated the following questions: (a) Does the demographic representation of program completers vary significantly in rural and non-rural school districts? and (b) Does the magnitude of special education teacher capacity differ significantly in rural and non-rural school districts?

## **Method**

### *Sample*

The sample included 638 participants who completed special education teacher licensure programs of course work through Project CREATE over the 8-year period, 2003–2011. All participants were employed full-time in South Carolina public or charter schools. Table 1 provides sample demographics. Participants were predominately female (88%), a gender imbalance that was expected, given the disproportionate representation of female educators (85.1%) in the national special education teacher work force (USDLE, 2010). Minority ethnicities, including African-American, American Indian, Asian-American, and Hispanics, comprised 26% of the total sample, a rate that exceeded the minority presence (15%) found in the national special education teacher population (USDLE, 2010).

More than half of the participants (53%) were pursuing licensure in teaching learning disabilities (LD), a figure commensurate with the percentage of LD students (49.3%) enrolled in the state's special education programs (South Carolina Department of Education [SCDE], 2014c). An overwhelming majority of participants (93%) pursued alternative/add-on licensure programs, which reflects the preparation emphasis that characterized the first 8 years of the project. Most of the sample participants (86%) were employed as special education teachers who (a) held general education licensure and were completing add-on licensure in special education as career changers, (b) were completing a second area of special education licensure, or (c) were completing the state's alternative licensure program in teaching Emotional Disabilities (ED).

## Procedures

The first research question required assigning the 638 program completers to 1 of 2 groups (i.e., rural or non-rural) based on county affiliation of the employing school districts. To accomplish this, we adopted the rural classification of South Carolina counties provided by the U.S. Department of Agriculture (USDA, 2013). Of the state's 46 counties, 20 (43%) are classified as rural or non-metro. Accordingly, 33 of the state's 84 (39%) school districts are geographically situated within rural counties. We determined that 141 of the sample participants were employed in rural county school districts. The remaining 497 participants were employed in school districts located in non-rural counties (see Table 1).

For the second research question, we devised a data point called the special education *teacher capacity index* (TCI). The Great Schools Partnership (2013) described *building capacity* as "any effort being made to improve the abilities, skills, and expertise of educators" (para. 2). Therefore, the project's mission of growing a highly qualified special education teacher work force is a true capacity-building initiative. The TCI is a percentage calculated by dividing the number of teachers completing special education licensure programs through the project by the total number of teachers employed in the respective school district and multiplying by a factor of 100. Individual school district TCI data points are provided in Table 2.

**Table 1.**

*Special Education Teacher Program Completers (N=638) by Rural School District Affiliation, Project CREATE (2003-2011)*

Variable	Rural Districts <sup>a</sup> (n=141)		Non-Rural Districts <sup>b</sup> (n=497)		Total Districts <sup>c</sup> (N=638)	
	n	%	N	%	N	%
<b>Gender</b>						
Female	119	84.4	441	88.7	560	87.8
Male	22	15.6	56	11.3	78	12.2
<b>Ethnicity</b>						
African-American	34	24.1	121	24.4	155	24.3
American-Indian	1	0.7	5	1.0	6	0.9
Asian-American	1	0.7	1	0.2	2	0.3
Caucasian	104	73.8	365	73.4	469	73.5
Hispanic	0	0	2	0.4	2	0.3
Undisclosed	1	0.7	3	0.6	4	0.6
<b>Licensure Area</b>						
Emotional Disabilities	17	12.1	137	27.6	154	24.1
Generic Special Education	1	0.7	1	0.2	2	0.3
Hearing Impairment	1	0.7	0	0	1	0.2
Intellectual Disabilities	18	12.8	74	14.9	92	14.4
Learning Disabilities	87	61.7	249	50.1	336	52.7
Multi-categorical	14	9.9	24	4.8	38	6.0
Severe Disabilities	1	0.7	7	1.4	8	1.3
Visual Impairment	2	1.4	5	1.0	7	1.1
<b>Licensure Approach</b>						
Add-on/Alternative	133	94.3	462	93.0	595	93.3
Initial Bachelor's	8	5.7	12	2.4	20	3.1
Initial Master's	0	0	23	4.6	23	3.6
<b>Employment Status</b>						
General Education Teacher	9	6.4	30	6.0	39	6.1
Special Education Teacher	122	86.5	430	86.5	552	86.5
Teacher Assistant	6	4.3	25	5.0	31	4.9
Other Non-instructional	4	2.8	12	2.4	16	2.5

*Note.* Sample represents <sup>a</sup>33 of 84 school districts; <sup>b</sup>51 of 84 school districts; <sup>c</sup>84 of 84 school districts.

*Design and Analysis*

We used the non-parametric chi-square ( $\chi^2$ ) statistic to test for disproportionalities in the observed versus expected frequencies of program completers across the categorical demographic variables (Research Question One). Pooling subgroup cells with fewer than five participants (McDonald, 2009) allowed for maximum probability of detecting significant

differences. We employed a quasi-experimental research design to assess differences in the sample groups on the magnitude of teacher capacity (Research Question Two). We summed TCI scores for individual school districts within each group and then divided by the total number of school districts to generate a mean TCI for each group. We used analysis of variance (ANOVA) to test for differences among the group TCI means.

**Table 2.**

*South Carolina School District Teacher Capacity Indices (TCI) by Rural Affiliation*

Rural				Non-Rural							
District	n <sup>1</sup>	n <sup>2</sup>	TCI <sup>3</sup>	District	n <sup>1</sup>	n <sup>2</sup>	TCI <sup>3</sup>	District	n <sup>1</sup>	n <sup>2</sup>	TCI <sup>3</sup>
Abbeville 60	6	228	2.63	Aiken 01	13	1571	0.83	Lancaster 01	13	728	1.79
Allendale 01	0	132	0	Anderson 01	5	514	0.97	Laurens 55	4	343	1.17
Bamberg 01	3	91	3.3	Anderson 02	3	211	1.42	Laurens 56	2	187	1.07
Bamberg 02	3	62	4.84	Anderson 03	0	168	0	Lexington 01	9	1543	0.58
Barnwell 19	3	62	4.84	Anderson 04	1	204	0.49	Lexington 02	6	608	0.99
Barnwell 29	4	66	6.06	Anderson 05	18	817	2.2	Lexington 03	3	126	2.38
Barnwell 45	2	170	1.18	Beaufort 01	5	1428	0.35	Lexington 04	4	211	1.9
Cherokee 01	1	568	0.18	Berkeley 01	17	1862	0.91	Lexington 05	10	1194	0.84
Chester 01	5	370	1.35	Calhoun 01	2	119	1.68	Pickens 01	7	1020	0.69
Clarendon 01	0	55	0	Charleston 01	30	3275	0.92	Richland 01	27	1808	1.49
Clarendon 02	5	176	2.84	Chesterfield 01	6	475	1.26	Richland 02	17	1743	0.98
Clarendon 03	0	70	0	Darlington 01	20	656	3.05	Saluda 01	7	147	4.76
Colleton 01	5	402	1.24	Dorchester 02	9	1331	0.68	Spartanburg 01	2	373	0.54
Dillon 01	2	52	3.85	Dorchester 04	3	157	1.91	Spartanburg 02	2	575	0.35
Dillon 02	5	195	2.56	Edgefield 01	4	272	1.47	Spartanburg 03	0	180	0
Dillon 03	1	95	1.05	Fairfield 01	4	263	1.52	Spartanburg 04	2	167	1.2
Georgetown 01	4	695	0.58	Florence 01	27	1062	2.54	Spartanburg 05	8	523	1.53
Greenwood 50	14	517	2.71	Florence 02	3	77	3.9	Spartanburg 06	3	670	0.45
Greenwood 51	5	71	7.04	Florence 03	2	242	0.83	Spartanburg 07	10	620	1.61
Hampton 01	6	175	3.43	Florence 04	2	56	3.57	Sumter 01	32	1040	3.08
Hampton 02	4	71	5.63	Florence 05	0	85	0	Union 01	4	285	1.4
Lee 01	2	166	1.2	Greenville 01	77	4277	1.8	York 01	8	315	2.54
Marion 01	3	59	5.08	Greenwood 52	0	106	0	York 02	3	422	0.71
Marion 02	8	153	5.23	Horry 01	38	2561	1.48	York 03	8	1134	0.71
Marion 07	0	102	0	Jasper 01	5	225	2.22	York 04	1	661	0.15
Marlboro 01	3	56	5.36	Kershaw 01	12	635	1.89				
McCormick 01	2	307	0.65								
Newberry 01	10	413	2.42								
Oconee 01	12	785	1.53								
Orangeburg 03	2	211	0.95								
Orangeburg 04	4	263	1.52								
Orangeburg 05	5	481	1.04								
Williamsburg 01	11	313	3.51								

*Note.* n<sup>1</sup>=number of program completers; n<sup>2</sup>=total number of teachers employed in district; TCI<sup>3</sup>= n<sup>1</sup> divided by n<sup>2</sup> multiplied by 100.

**Table 3.***Chi Square Analysis of Program Completer Demographics by Rural Affiliation*

Variable	df	$\chi^2$	p
Gender	1	1.92	.165
Ethnicity	2	0.00	.996
Licensure Area	4	19.20	.001*
Licensure Approach	1	0.32	.567
Employment Status	2	0.29	.861

\*p $\leq$ .001**Table 4.***Analysis of Variance of School District Teacher Capacity Indices by Rural Affiliation*

Source	df	SS	MS	F	p
Between groups	1	26.34	26.34	11.60	.0001*
Within groups	82	186.19	2.27		
Total	83	212.53			

\*p $\leq$ .0001

We adopted an alpha level of .05 as a minimum for statistical difference for both the chi-square and ANOVA tests.

**Results**

Table 3 provides chi-square analysis results on the demographic representation of program completers. There were no significant differences in gender, ethnicity, licensure approach, and employment status among the rural and non-rural subgroups. Licensure area, however, was significant,  $\chi^2(4, N = 638) = 19.20, p = .001$ , with disproportionalities occurring in the rural group. The observed frequency of 17 program completers in emotional disabilities was only half as many as the expected frequency of 34. In addition, the observed frequency of 14 program completers in multi-categorical special education was two-thirds more than the expected frequency of 8.4.

TCLs for the 84 school districts (see Table 2) ranged from 0% to 7.04% with ranges per group as follows: (a) rural school districts (0% to 7.04%) and (b) non-rural school districts (0% to 4.76%). Group means and standard deviations were as follows: (a) rural school districts ( $M = 2.54; SD = 2.04$ ) and (b) non-rural school districts ( $M = 1.39; SD = 1.03$ ). The ANOVA produced a statistically significant outcome,  $F(1,82) = 11.60; p = .0001$ , in favor of the rural school district group (see Table 4).

**Discussion**

The purpose of this study was to investigate whether CREATE's capacity building success has resulted in equitable distribution of teachers across South Carolina rural and non-rural school districts in terms of demography and magnitude. Statistical analyses yielded two key results. First, from Research Question One, we found a significant difference in one demographic variable, licensure area. There were significantly fewer program completers with emotional disabilities (ED) licensure and more program completers with multi-categorical (MC) special education licensure in rural school districts. Second, from Research Question Two, we found a significantly higher percentage of program completers in rural school districts.

Fewer ED program completers and more MC program completers in rural school districts was not a surprising finding. South Carolina has struggled for years with employing ED teachers. Traditionally, special educators of ED students have been extremely difficult to staff in metropolitan area public schools that should be more economically attractive to potential hires. Staffing ED classrooms has presented an even greater challenge in more remote, rural areas. SCDE's response to the ED critical needs area has been development of an alternative licensure program called *Programs of Alternative Certification for Educators* (PACE; SCDE, 2014a).

We surmised that the smaller rural school districts may likely have had fewer candidates to qualify for the PACE-ED program, since the entrance requirement into PACE-ED is possession of a bachelor's degree in either psychology or sociology.

This may explain in part why rural school districts concurrently had a disproportionately greater percentage of program completers with multi-categorical (MC) special education licensure. We believe that LEA administrators in rural school districts recognized the implausibility of growing ED teachers through the PACE-ED program. Therefore, when currently employed teachers indicated interest in obtaining licensure in special education (or another area of special education licensure), they were advised to pursue add-on in MC special education. The more versatile MC licensure allows for broader preparation in teaching students with a wide range of mild-moderate forms of disability, including ED, LD, intellectual/mental disabilities (I/MD), and other cognitive impairments including autism spectrum disorder. Consequently, administrators have maximum flexibility in assigning MC licensed teachers to virtually any special education setting (i.e. inclusion, resource, and/or self-contained), including hard-to-staff ED classrooms.

We found no significant differences among program completers in the remaining four demographic variables of gender, ethnicity, licensure approach, and employment status. A comparison of rural and non-rural subgroup sample numbers revealed observably equivalent percentages for the most part. Only the chi-square analysis for gender produced a result that may have been trending toward significance ( $p = .165$ ). Inspection of the gender subgroups revealed a disproportionately higher percentage of males in the rural group. Yet, recent data from the South Carolina Department of Education (as cited in Center for Educator Recruitment, Retention, and Advancement [CERRA] of South Carolina, 2014) indicates the current representation of male teachers employed in rural schools (19.4%) is comparable to non-rural schools (18.8%). We believe the scarcity of industrial and trade job opportunities in rural South Carolina communities (Burris, 2013) may be the catalyst driving more male workers toward public school employment in rural schools.

The non-significant difference between the rural and non-rural groups on ethnicity is noteworthy. Statistical analysis generated a rare  $\chi^2$  of 0.00 ( $p = .996$ ), suggesting the proportions of ethnicities among the subgroups were virtually the same. In fact, the differences in the percentages of African-American program completers (rural, 24.1%; non-rural, 24.4%) and Caucasian program completers (rural, 73.8%; non-rural, 73.4%) was less than half of one percentage point for each of the sample groups. Therefore, a strong case can be made that CREATE is ensuring near-perfect equity among ethnicities; however, one could argue that more should be done to grow particular ethnicities of special education teachers to reflect their current representation within school districts. CERRA (2014) data reveal that twice as many African-American teachers are actually employed in rural schools (29.4%) than in non-rural schools (15.0%) in South Carolina. The instructional implications of the latter argument are especially pertinent in light of a growing body of research (e.g., Anderson, 2014; Villegas & Irvine, 2010) suggest-

ing that students of color show significantly greater academic outcomes when taught by teachers of the same color.

Licensure approach (i.e., alternative/add-on, bachelor's, or master's) also resulted in a non-significant difference for the rural and non-rural samples. The percentage of alternative/add-on program completers in rural districts (94.3%) was essentially the same as non-rural districts (93.0%; however, the combined percentage of bachelor's or master's degree program completers in rural districts (5.7%) was observably less than that of program completers in non-rural districts (8.0%). This finding was not a surprise. Many CREATE applicants employed in South Carolina rural school districts, needing a bachelor's or master's degree in order to obtain initial licensure, resided in remote areas of the State and had no access to an on-campus degree program. As a result, these applicants were unserved by CREATE. Responding to the need, one of the CREATE consortium colleges recently developed a fully distance/online master's program (i.e., MAT). In 2014, CREATE began sponsoring its first cohort of 18 applicants who are pursuing initial licensure in LD through the new distance MAT program (South Carolina Department of Education, 2014b).

CREATE's contribution in supporting rural area individuals in the completion of bachelor's or master's degrees is laudable. Only 24.4% of the national population age 25 and older has earned a bachelor's degree or higher; for South Carolina, the figure drops to 20.4%. In the non-rural/metro areas of South Carolina, the percentage is 22.0%, compared to 15.6% in rural/non-metro areas (Rural Policy Research Institute, 2006). The capacity to increase the educational status of rural residents, in particular, for the purpose of obtaining a professional teaching credential is an important accomplishment of CREATE that should translate into increased local pride and positive academic effects for students enrolled in South Carolina rural schools.

The second key result of this study, a significantly higher percentage of program completers in rural school districts can be explained by the project's recruitment policy. CREATE matriculates a broad, representative pool of candidates each year from all areas of the state on a first-come basis as funds allow. School district principals, special education directors, and human resource directors are all notified by email memo at the beginning of each grant year of the ongoing availability of project. We believe this approach mathematically favors smaller school districts in rural areas. For example, one program completer from a rural school district that may have only three schools, and, therefore, a smaller total teacher faculty, would generate a higher TCI percentage figure (i.e., number of program completers divided by total teachers x 100). Comparatively, one program completer from a non-rural school district that may have 25 schools with a larger total teacher count would generate a much lower TCI.

This finding refutes the claim by NPTARS (2005) that capacity-building efforts like CREATE "rarely trickle down to the most vulnerable schools" (pp. 3-4) found in rural areas. Further, the inextricable relationship between ruralism and poverty (Bassett, 2003) suggests that this result may have potentially far greater positive impact for South Carolina when poverty figures are factored. Sable and Plotts (2010) reported that South Carolina rural students living in poverty have

increased to 57.1%. In addition, the alarming number of children in South Carolina under age 18 who live in poor families with annual incomes below the federal poverty level of \$22,350 occur mostly in the non-white (42%) and Hispanic (42%) populations as opposed to their white (14%) counterparts (Currie, Roberts & Drost, 2011). Moreover, 66% of South Carolina's children whose parents do not have a high school diploma, and 37% of children whose parents have a high school degree but no college education, live in poor families (Currie et al.). In an analysis of South Carolina's 84 school districts, Sutton, Bausmith, O'Connor, and Pae (2014) determined that 24 of the State's 33 (72.7%) districts classified as rural fell in the upper-third of the highest percentage of school-age students residing in poverty families, ranging from 32.9% to 45.7%.

## Limitations and Future Research

The results of the current study must be viewed in light of several limitations and with respect to directions for future research. One limitation is generalization of results. South Carolina's top five states ranking for highest priority rural education needs (Johnson et al., 2014) and for highest percentage of Hispanic growth (USCB, 2006) could prevent transfer of this study's results to other states. For example, in more non-rural states where equitable distribution of quality teachers is not as much of a critical concern, generalization of results from this study may be less likely. Implementing a CREATE-like initiative in a non-rural state would allow for replication of the current study for comparison of results.

A second limitation is aging extant data. We employed a data set from the project that spanned an 8-year period (i.e., 2003 to 2011), in part, to maximize statistical power. At the time this study was conducted, some of the data from earlier years were a decade old, although it was the impact of a collective, multi-year sample of program completers that were being analyzed. The popularity of extant data in educational and social research (Hurvitz, Hajat, & Schultz, 2014), notwithstanding, time boundaries of extant data (Bickman & Rog,

2009), combined with ever-changing student demographics, also have the potential to adversely affect generalization of findings. With CREATE's recent expansion that includes 13 of South Carolina's leading teacher preparation IHEs, and potentially greater numbers of program completers each year, we could avoid aging extant data by conducting similar studies in the future by using samples that span, for example, only a 3-year period of time.

One other limitation is that the study focused on one rural, Southern state's effort to build special education teacher capacity through various approaches, including add-on, alternative, and initial licensure (bachelor's and graduate-level). NASDSE Personnel Improvement Center (Müller, 2012), however, has identified several other highly rural states with model, ongoing capacity-building GYO programs, specifically, Arizona and Utah, both of which concentrate on paraprofessional-to-teacher (PtT) preparation. Future research might include an interstate partnership study that would determine similarities and differences among the three state's PtT preparation approaches and whether equitable distribution of teachers among rural and non-rural areas is consistently occurring across states.

## Conclusion

This study demonstrated that SC's GYO initiative, CREATE, is ensuring demographically equitable distribution of special education teacher program completers across rural and non-rural school districts with regard to gender, ethnicity, type of licensure (add-on/alternative and initial), and employment status. As for magnitude of program completers, CREATE is exceeding equitable distribution of special education teachers in rural school districts. In other words, on a percentage basis, these data showed that greater teacher capacity-building is occurring in the rural areas. An added success of the project is that it is concurrently fostering greater special education teacher capacity-building in higher poverty school districts in South Carolina where needier students are educated.

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