

A Decade of Growing Our Own in South Carolina:

Efficacy Studies on Project CREATE

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Abstract

Project CREATE's chief mission is to reduce the number of non-certified special education teachers while simultaneously growing a highly qualified special education teacher work force in the State. Nationally recognized for grow your own (GYO) and alternative routes to certification (ARC) emphases, project leadership implemented an aggressive research agenda that has spanned CREATE's 10 years of operation to date. In this article, we summarize five peer-reviewed studies on the efficacy of CREATE, all focusing on aspects of outcome data from special education teachers who were program completers. These studies, emanating from different perspectives and research interests, provide a framework for other similar teacher preparation initiatives in assessing program efficacy.

Introduction

Project CREATE¹ (Centers for the Re-education and Advancement of Teachers in Special Education) was established in 2003 by the South Carolina Department of Education's (SCDE) Office of Exceptional Children (OEC). From the outset, CREATE's chief mission has been to reduce the number of non-certified special education teachers while simultaneously growing a highly qualified special education teacher work force in the State. Through a collaborative partnership with local education agencies (LEAs) and SC institutions of higher education (IHEs), all with NCATE/State-approved teacher preparation programs, the project has assisted qualified individuals in obtaining add-on, alternative, or initial certification in special education by underwriting course tuition and textbooks costs. The evolution of CREATE's accomplishments (Sutton, Pae, Bausmith, O'Connor & DuRant, 2010) has been traced in terms of its continued emphasis on increasing the supply of special education teachers as well as building capacity for the preparation of future generations of qualified personnel.

CREATE has been recognized nationally by the broader professional education community (Njuguna, 2011, DuRant, Poda, & Sutton, 2007; Sutton, 2007; Sutton & DuRant, 2007, 2008;

Sutton & Pae, 2012). In addition, the National Association of State Directors of Special Education's (NASDSE) Personnel Improvement Center (Mueller, 2011; 2012; Sutton & McGovern, 2013) has identified CREATE as one of only a few model, state-level grow-your-own (GYO) initiatives in special education teacher preparation. Largely characterized for its alternative routes to certification (ARC) emphasis, CREATE represents a consortium of 13 leading SC colleges and universities which have collectively produced an impressive 680 program completers over the nine-year period, 2003-2012. With the 2012-2013 year of operation, CREATE is celebrating an unprecedented decade of success.

This article summarizes five peer-reviewed studies on the efficacy of CREATE, all focusing on aspects of outcome data from special education teachers who were program completers. Study 1 identified demographic variables that predicted success in CREATE participants who completed add-on certification. Study 2 investigated competency differences among CREATE program completers using state certification exam scores and a competency self-report measure. Study 3 examined the relation between program completers' grade point averages (GPA) of certification course work and their performance on state certification exams. In Study 4, researchers investigated the variance in rates of disciplinary infractions of students with emotional-behavioral disorders (EBD) in classrooms taught by teachers prepared through alternative versus traditional certification programs. Last, Study 5 examined CREATE's chief mission of growing a highly qualified special education teacher work force by analyzing teacher capacity building in lower-, mid-, and higher-poverty school districts in South Carolina.

STUDY 1 (2008)

Predicting Alternative Teacher Certification Success

Severe shortages of highly qualified special educators (American Association for Employment in Education, 2007) is a national concern. Employment for teachers of exceptional learners is expected to increase 17% from 2010 to 2020 (U.S. Department of Labor, Bureau of Labor Statistics, 2013) due to growth of students with disabilities and teacher factors (e.g., retirement, career changes). A recruiting challenge for teacher educators and local/state education agencies, Nougaret, Scruggs, and Mastropieri (2005) maintain that, for the near future, it may be necessary to "employ unlicensed or nontraditionally licensed teachers...to provide an adequate number of teachers in existing classrooms," (p. 226) thereby implying the continued need for alternative pathways to licensure. However, with fewer than a dozen alternative routes to certification (ARC) data-based studies to date, we know little about the efficacy of ARC programs (Humphrey & Wechsler, 2007). Moreover, "unbridled program development and the scarcity of existing literature...[have]...created a situation that cries out for additional research" (Rosenberg & Sindelar, 2005, p. 126).

CREATE matriculated 415 SC teachers through consortium colleges in 2003-06, producing 225 program completers (54.2%) in special education. However, not all program completers took and passed the Praxis II[®] exam (Educational Testing Service, ETS, 2013a), which is required after completion of course work in order to become certified. A sharp increase in interest in 2006-07 (700+ applications) prompted the need to explore a statistical predictor model that had the potential to screen for more promising, successful candidates. Therefore, Sutton and DuRant (2008) sought to identify teacher attributes that would predict success in participants' ability to complete the add-on certification process by investigating the following research question: Do

personal and professional attributes predict whether completers in an alternative (add-on) special education teacher preparation program successfully obtain state licensure?

The sample for the study included 196 program completers from the 2003-2006 CREATE participant cohort. Seventy-four percent (74%) completed required course work for add-on certification in learning disabilities (LD); 26% completed course work reflecting other areas of special education certification. Of these program completers, 68% had taken and passed the required Praxis II® (ETS, 2013a) exam in LD at the time of the study, and had been issued their teaching certificate by the South Carolina Department of Education.

Researchers employed discriminant analysis to determine whether particular personal and professional demographic variables would predict success in obtaining special education certification and to generate a discriminant model (equation). The dependent variable was special education licensure, obtained by earning a passing score on the Praxis II® (ETS, 2013) exam in LD. The independent variables included the following 15 attributes: gender; race; age; years of teaching experience; years of other work experience; years of combined work experience; possession of a bachelor of arts or science in a general education field (e.g., social studies education); possession of a bachelor of arts or science in any education field; holds master's degree in any field; possession of a master's degree in any education field; number of add-on certification courses completed (range of one to seven); licensure in one or more general education areas (e.g., elementary education); licensure in one or more other special education areas (e.g., emotional disabilities); licensure in both general education and special education fields; employment in a high student risk school district (i.e., high poverty area; Title I district).

Results of the discriminant analysis was significant (Wilks Lambda, $\Lambda = .561$; $p \leq .000$; eigenvalue, $\lambda = .782$; canonical correlation eta, $\eta = .662$). Rank-ordered per discriminatory impact, six (of 15) personal and professional demographic variables that proved to be predictors of success in completing add-on certification were as follows: (1) licensure in one or more special education areas [SpEdLic]; (2) years of teaching experience [TchExp]; (3) race; (4) years of combined work experience [TotExp]; (5) licensure in one or more general education fields [GenEdLic]; and (6) employment in a high student risk school district [HiRskDst].

The analysis generated the following discriminant analysis (DA) equation: $DA = -4.191 + .854 (\text{Race}) + .771 (\text{TotExp}) + -1.132 (\text{TchExp}) + .566 (\text{GenEdLic}) + 3.434 (\text{SpEdLic}) + .454 (\text{HiRskDst})$. By inputting data for each of the 196 program completers' six predictor variables into the equation, we achieved a robust overall hit ratio of 84.7% (166 of 196 cases). Table 1 shows that the equation correctly classified program completers in their appropriate group as follows: non-licensed program completers (62.9%; 39 of 62); and licensed program completers (94.8%; 127 of 134).

Although CREATE does not use this analysis to determine a participants' eligibility for tax-funded scholarships to pursue add-on licensure in special education (i.e., those with higher DA scores get funding; those with lower DA scores do not), this prediction model serves as a mechanism for evaluating program efficacy. As one intervention measure, the provision of additional monitoring to CREATE applicants with lower DA scores will allow the State to realize even greater success in growing a highly qualified special education teacher force. Boyd

et al. (2006) have argued, “it is useful to know which elements of [ARC] pathways affect selection and the ability to recruit good teachers... and [for] controlling for the entering characteristics of teachers...” (p. 162). Identifying personal and professional teacher attributes that predict special education licensure success will assist in framing better public policy and in designing more efficient, cost-effective ARC programs like CREATE in South Carolina and other states.

Table 1: Classification of Program Completers (N=196) Using Discriminant Analysis, Project CREATE, 2003-2006.

Certification Status	Model Classification	
	Correct (Hit)	Incorrect (Miss)
Successful (n=134)	127	7
Unsuccessful (n=62)	39	23

STUDY 2 (2009)

Competency Differences Among Program Completers

To address special education teacher shortage, most states have implemented ARC programs (USBLS, 2008). Preparing more than 25,000 special educators annually (Center on Personnel Studies in Special Education, COPSSE, 2008), Rosenberg (2007) reported that ARC programs operate in 37 states. But research on ARC efficacy is admittedly sparse (Humphrey & Wechsler, 2007; Rosenberg & Sindelar, 2005). Given that little is known about the competency of ARC completers compared to their counterparts in traditional teacher education programs, Sutton, Bausmith, O’Conner & Pae (2009a) investigated whether they differed significantly in their competency, as assessed through a national professional examination and a self-report measure.

The sample for this study included 153 program completers from the 2003-2006 CREATE participant cohort. The 153 participants were divided into three groups: 51 completed required course work for add-on certification; 51 completed a traditional education program and 51 completed a program at the graduate level. All completed course work in the area of learning disabilities (LD). The participants were 14% male and 86% female with a mean age of 35.5 years. The majority of the participants were Caucasian (88%).

Two previously validated instruments were adopted for use in assessing special education competency (knowledge and skills) of sample participants in this study: Praxis II[®] LD exam (ETS, 2013b) total score and an adapted version of the Study of Personnel Needs in Special Education or SPeNSE survey (Blanton et al., 2003; University of Florida College of Education, 2013). Using a four-point Likert-type (1931) scale, the SPeNSE survey items focused on practices-procedures (25 items), individualized educational plans (IEPs; 6 items), behavior management (13 items), language-diversity (6 items), and transitioning (9 items). Means and standard deviations of these data sets are provided in Tables 2 and 3.

Researchers used analysis of variance (ANOVA) to test for differences among the three teacher groups on Praxis II[®] (ETS, 2013b) LD and SPeNSE mean scores. Results of the ANOVA on Praxis II[®] LD data revealed a significant difference [$F(2, 150) = 4.384, p = .014$]. Follow-up univariate statistics showed the master’s degree group had a significantly higher mean score than

the add-on group [$t(101) = 3.046, p = .003$]. ANOVA tests on the six SPeNSE area mean subscore comparisons resulted in no significant differences among the three teacher groups. See Sutton, Bausmith, O'Conner & Pae (2009b) for a complete presentation of all ANOVA results.

Table 2: Means and Standard Deviations of Praxis II® LD Exam Scores of Teachers Certified Through Add-on, Bachelor's, and Master's Programs, Project CREATE, 2003-2006.

Praxis II® LD Scores			
Certification Group	n	Mean	SD
Add-on	51	174.67	10.78
Initial—Bachelor's	51	177.37	11.76
Initial—Master's	51	181.14	10.68

Table 3: Means and Standard Deviations of SPeNSE Scores of Teachers Certified Through Add-on, Bachelor's, and Master's Programs, Project CREATE, 2003-2006.

		SPeNSE Survey Scores									
Certification Group	n	Pract. & Proc. (25 items)		IEPs (6 items)		Behavior Mgt. (14 items)		Lang./Divers. (6 items)		Transitioning (9 items)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Add-on	14	80.29	7.81	17.50	1.87	43.79	4.85	15.93	4.61	27.90	6.28
Initial—Bachelor's	12	75.42	8.17	17.33	1.55	43.67	5.64	13.08	6.12	29.30	3.57
Initial—Master's	14	77.14	9.23	17.50	1.65	46.07	5.73	12.86	4.97	29.00	3.31

Results provide limited support of Resenberg's (2007) contention that ARC programs can produce competent special educators on par with traditionally-prepared teachers. We might expect master's degree program completers with advanced knowledge to score higher on Praxis II® (ETS, 2013b) exams, but the statistical difference of a mere seven points may be of little practical meaning, given the concurrent finding that the SPeNSE self-reported competency did not vary significantly. In light of these research results, the similarity of SC's CREATE ARC program (i.e., add-on certification) with other ARCs (Rosenberg & Sindelar, 2006) would suggest generalization of current, positive competency findings to programs in other states. However, future ARC efficacy research will need to link empirically observed special educator competency with student academic (Nougaret et al., 2005) and behavioral outcomes.

STUDY 3 (2010)

Praxis II® as a Barometer of Special Education Knowledge

Teacher quality is predicated on the notion that an educator's ability to deliver instruction successfully in the classroom hinges on proficiency in knowledge and skills gained prior to entry into the profession, and hence on the need for licensure programs. Teacher preparation programs with national recognition by NCATE (2013) and TEAC (2013) in turn establish course work offerings that align with professional standards and accreditation requirements. Commonly the agencies issuing licensure gauge individuals' eligibility for certification in terms of (a) the completion of a state-approved program of study, (b) the GPA earned for each course required, and (c) the score earned on tests for licensure. Given these prerequisites, one would hope that the candidates' levels of success in completing state-approved degree program requirements link with the candidates' levels of teaching success.

As far as GPA impact, conflicting data exist on its predictive validity on teacher effectiveness (Davy, Doolan, & Higgins, 2007). One portion of research suggests that GPA is generally a valid and reliable predictor of teacher performance (Bacon & Bean, 2006; Gore, 2006; Graham, & Garton, 2003; Roth, BeVier, Switzer, & Schippmann, 1996). However, other studies showing no correlation between GPA and teacher effectiveness assert that grades are biased and variable across instructors, classes, and institutions, thereby unreliable indicators of actual or potential performance (Glass, 2002; Kane, Rockoff, & Staiger, 2006; Zumwalt & Craig, 2005).

An analysis of teachers' standardized tests scores may provide additional predictors of teacher performance. In a meta-analysis D'Agostino and Powers (2009) examined the degree to which teachers' scores on basic skills tests and their performance in preparation programs, as measured by their collegiate GPA, predicted their teaching competence. Results from 123 studies suggest that test scores were modestly related to teaching competence and that performance in preparation programs was a significantly better predictor of teaching skill. Despite their far-reaching analysis, "No newer test forms (such as the Praxis II series or Pearson tests) based on more contemporary pedagogical approaches or more updated measures of teacher effectiveness were included" (p. 152).

The lack of attention to the efficacy of the Praxis II[®] (ETS, 2013a) exams has created a research void in the teacher preparation literature and a point of interest to CREATE. Therefore, Sutton, Bausmith, O'Connor, and Pae (2010) examined whether course GPAs of alternatively prepared special education teachers completing add-on licensure in LD significantly correlated with to their Praxis II[®] exam total and/or domain scores.

The sample for the study included 43 CREATE teacher participants (2003-2006) who completed add-on in LD (males, 16%; minority races, <10%; mean age of 47.6 years) and who were employed in 25 of the 85 (29.4%) school districts. Data consisted of Praxis II[®] (ETS, 2013a) scores and grades from four content courses required by the SCDE Certification Office (2013b): Characteristics (CHAR), Methods (METH), Behavior Management (BM), and Assessment (AS). Using a Pearson-r correlation of four course GPAs by four Praxis II scores (total, Domain I [Characteristics], II [Services], III [Problem-solving]), researchers generated a matrix of 16 pair-wise tests (see Table 4).

The strongest relationships (i.e., moderate correlations that were statistically significant) were found in the Methods for LD course GPA and Praxis II[®] (ETS, 2013b) LD Domain I (Characteristics, etc.) score, the Assessment course GPA and Praxis II[®] Domain II (Delivery of Services) score, and the Aggregate II GPA and Praxis II[®] Domain I (Characteristics, etc.) score. However, the Behavior Management course GPA and the total GPA both proved to have the most consistent impact, correlating positively with all four of the Praxis II[®] scores, although all correlations were weak/low.

Three of the four essential certification content course GPAs positively correlating with Praxis II[®] (ETS, 2013b) LD test scores speaks to limited use of the Praxis II[®] as a knowledge barometer for alternatively prepared LD teachers. Further, these results provide support for the D'Agostino and Powers (2009) study, and for Brownell's (2007) qualitative research finding that "Preparation in classroom [behavior] management influences a beginners' [sic] ability to deliver

instruction” (p. 11). These findings also suggest that institutions of higher education (IHEs) may need to re-evaluate the equal emphasis they presently place on the four basic alternative preparation licensure content courses. Perhaps greater consideration should be given to bolstering the Behavior Management and Assessment content courses.

Table 4: Correlation of Certification Course GPAs and Praxis II® LD Scores for Add-on Certification Teachers (n=43), Project CREATE, 2003-2006.

Praxis II® Score	Grade Point Average							
	Char n=25	Meth n=30	BM n=27	As n=26	Agg I n=26	Agg II n=40	Total n=43	
Total	<i>r</i>	.035	.071	.261	.268	.148	.124	.179
	<i>p</i>	.434	.354	.094	.092	.171	.269	.134
Domain I	<i>r</i>	.169	.341	.046	-.029	.199	.439	.151
	<i>p</i>	.209	.032*	.408	.445	.100	.012*	.176
Domain II	<i>r</i>	.118	-.104	.276	.405	.142	.050	.157
	<i>p</i>	.287	.292	.081	.019*	.181	.401	.166
Domain III	<i>r</i>	-.161	-.063	.216	.053	.011	-.070	.062
	<i>p</i>	.222	.370	.139	.398	.471	.366	.351

* $p \leq .05$; r = correlation; Agg = Aggregate; Agg I = Characteristics of LD and Introduction to Exceptional learners; Agg II = Assessment, Behavior Management, and Teaching Reading.

STUDY 4 (2012)

Impact of Teacher Preparation on Student Behavioral Outcomes

The quality and rigor of ARC programs vary widely, are not well-reported (Qu & Becker, 2003; Rosenberg & Sindelar, 2005), and findings are inconsistent. In a data-based student outcome study, Shepherd and Brown (2003) concluded that traditional bachelor’s-level prepared special education teachers were better qualified to teach than their counterparts from ARC programs. Qu and Becker (2003) went so far as to suggest that instructional practices of teachers who completed alternative certification might possibly impair student learning. Yet, more recently, Rosenberg (2007) contended that ARC programs produce competent special educators on a par with traditionally-prepared teachers.

In conjunction, the current national trend toward ensuring *highly effective over highly qualified* teachers reinforces the importance of continuous evaluation of teacher preparation approaches, both traditional and alternative alike. Accordingly, the emphasis on credentials and licensure is now rightly being redirected toward linking teacher performance with student outcomes. Peterson and Nadler (2009) have correctly noted that most highly qualified teacher studies “show very little, if any, connection with a teacher [’s]...effectiveness” (para. 19). Therefore, in an effort to address in part this research void, Sutton, Bausmith, O’Connor, Pae, and Skinner (2012) investigated the extent to which practices of traditionally- and alternatively prepared special education teachers impact behavioral outcomes (i.e., discipline infractions) of students with emotional-behavior disorders (EBD).

The sample for the study included 26 CREATE program completers (2006-2008) who obtained certification in EBD through the State’s Programs in Alternative Certification in

Education (PACE; SCDE, 2013a), and 26 teachers who obtained EBD certification through completion of a bachelor's degree program. Teachers with bachelor's degrees were randomly selected from a larger pool of EBD-certified bachelor's degree recipients. All teachers in the sample were employed in SC public schools at the time of the study. Data for the study included teacher student case loads and student disciplinary infractions from the fall 2010 semester. Researchers calculated the *average student behavior infraction* (ASBI) index for each teacher by dividing the total number of student behavior infractions that occurred in a teacher's classroom during the fall semester by student case load (i.e., number of students in the classroom).

Sample descriptive statistics, means and standard deviations are provided in Table 5. The mean ASBI index of 3.00 (SD = 3.20) for the alternative certification teacher group was observably higher than 1.33 (SD = 1.36) for the traditional certification teacher group. Table 6 delineates the top five most frequent student infractions for each teacher group. *Refusal to obey* was the highest incidence behavior infraction of students in classrooms of alternative certification teachers; however, it was the lowest incidence behavior infraction for traditional certification teachers. In turn, *disrespect* was the second highest incidence behavior infraction of students in classrooms of traditional certification teachers, but it was the lowest for alternative certification teachers. ANOVA testing revealed a significant difference in the mean ASBI indices of the teacher groups [$F(1,50) = 5.99$; $p = 0.18$].

Table 5: Descriptive Statistics, Means and Standard Deviations of Student Behavior Infractions of EBD Teachers (N=52), Project CREATE, 2006-2008.

Demographic	Teacher Certification Group	
	Alternative (n = 26)	Traditional (n = 26)
Total Students	378	345
Students (Range)	5–36	3–31
Total Infractions	1,259	531
Infractions (Range)	0–316	0–111
Mean ASBI Index	3.00	1.33
ASBI Index (Range)	0–15.13	0–4.89
Standard Deviation	3.20	1.36

The differences in the mean ASBI indices of the teacher groups may simply reflect differences between teachers' perceptions and expectations regarding student behavior rather than actual differences in student behavior in these classrooms. On the other hand, the observably higher standard deviation from mean ASBI scores of alternatively-prepared teachers may suggest greater variance and limitations in their knowledge, which may stem from their preparation program (i.e., PACE) which requires only three graduate certification courses (i.e., Characteristics of EBD, Methods for EBD, and Behavior Management).

The top-ranked *refusal to obey* infraction (prompting immediate non-compliance) for alternatively-prepared teachers may suggest they do not possess as many behavioral strategies in their knowledge base as do traditionally prepared teachers, in which *refusal to obey* was lowest-ranked. Higher-ranked *disrespect* (suggesting verbal engagement) for traditionally-prepared

teachers may indicate their confidence and competence in attempting to help students conform their behavior, all possibly due to their comprehensive preparation program, whereas *disrespect* was lowest-ranked for alternatively-prepared teachers who may not feel as confident or competent in verbally engaging students due to a more limited preparation program.

Table 6: Most Frequent Student Behavior Infractions of EBD Teachers (N=52), Project CREATE, 2006-2008.

Behavior Infraction	Alternative Teachers			Traditional Teachers		
	Rank	Raw	Percent*	Rank	Raw	Percent^
Cutting Class	3	85	6.8	4	23	4.3
Disrespect	5	74	5.9	2	36	6.8
Profanity	4	82	6.4	3	33	6.2
Refusal to Obey	1	122	9.7	5	22	4.1
Tardy to Class	2	121	9.6	1	57	10.7
TOTALS:	–	484	38.4	–	171	32.2

* Calculated from a total of 1,259 behavior infractions. ^ Calculated from a total of 531 behavior infractions.

Results of this study do not support research by Glazerman, Mayer, & Decker (2006) who found no impact of alternatively-prepared (Teach for America) teachers on student disciplinary incidents. Further, these results suggest the need for policymakers to reconsider SC's alternative certification program model, possibly to bolster program requirements with respect to course work in student behavior interventions as well as providing additional professional development opportunities.

STUDY 5 (2012)

Building Teacher Capacity in Higher-Poverty Schools

Darling-Hammond (2004) contended that, "Large disparities...exist in the educational opportunities available to rich and poor students in most states" (p. 1936). We also know that teachers in high-poverty schools tend to be poorly and inadequately prepared (NPTARS, National Partnership for Teaching in At-Risk Schools, 2005). Moreover, 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).

In addressing hard-to-staff schools, many states have responded with GYO and ARC programs. Nonetheless, NPTARS (2005) has argued, "Efforts to improve the quality of teachers in high-poverty, low-performing schools have been largely uneven and unfocused." (p. 3). Whether CREATE is actually addressing special education teacher capacity needs equitably across the poverty spectrum of SC's 85 school districts was a topic of investigation by Sutton, Bausmith, and O'Connor (2012).

The sample for this study included 646 program completers (11% male; 89% female) who received scholarship funding through CREATE over the eight-year period, 2003-2011. Program completers were subsequently separated into three groups, based on school district affiliation during the time they were completing required certification course work. The three groups reflected lower-poverty (n=28), mid-poverty (n=29), and higher-poverty (n=28) school districts

in the State, as defined by percentage of students ages 5-17 from poverty families (U.S. Census Bureau, 2010).

Researchers mathematically generated one primary data point, the *Teacher Capacity Index* (TCI), for each school district, calculated by dividing the number of program completers by the total number of teachers employed per district. Table 7 provides the means and standard deviations of TCI data for the three groups of program completers per school district group. The mean TCI for the mid-poverty group (1.85%) was observably higher than the lower-poverty group (1.03%). The mean TCI for the higher-poverty (2.11%) was more than double that of the lower-poverty group.

Researchers employed a one-way ANOVA to test for variance of mean TCIs among the three groups of program completers. The ANOVA resulted in a significant difference [$F(2,82)=5.21$; $p=.007$] among group mean TCIs. Follow-up t-test results showed the mid-poverty mean TCI was significantly higher than the lower-poverty mean TCI [$t(55)=2.78$; $p=.007$], and the higher-poverty mean TCI was significantly higher than the lower-poverty mean TCI [$t(55)=3.22$; $p=.002$].

Table 7: Means and Standard Deviations, SC School District Teacher Capacity Indices, Project CREATE, 2003-2011.

School District Group	Districts n	Program Completers		Teacher Capacity Index		
		n	Range	Range	Mean	SD
Lower-Poverty	28	287	0-73	0-2.35%	1.03%	0.62
Mid-Poverty	29	213	0-36	0-5.63%	1.85%	1.42
Higher-Poverty	28	99	0-21	0-6.86%	2.11%	1.78

This study demonstrated that the SC's GYO initiative is exceeding equitable distribution of special education teachers in favor of mid- and higher-poverty school districts. In other words, on a percentage basis, these data showed that greater teacher capacity-building is occurring in State school districts where there are greater numbers of poverty families with school-age children. Sutton et al. (2012) identified the three-way collaborative relationship among SCDE officials, LEAs, and consortium colleges as key to teacher capacity building. Moreover, the simplicity of the triad (SDE-IHE-LEA) partnership GYO model is one that may be generalized to other rural states (Sutton & McGovern, 2013).

Conclusion

CREATE research activities serve as a model for evaluating efficacy of certification program initiatives. Although the purpose of CREATE is to assist in growing a highly qualified special education teacher work force in South Carolina, each of the research studies discussed herein examined aspects of program impact which extend beyond special education teacher preparation, ARC, and GYO interests. In Study 1, *Predicting Alternative Teacher Certification Success*, researchers generated a statistically-sound discriminant analysis equation that allows for input of specific personal and professional demographic data to predict candidate licensure success. Adaptable for use in other state initiatives, this predictive model can also be used as an intervention tool in assisting candidates who have low predictive success in completing licensure.

Although Study 2, *Competency Differences Among Program Completers*, resulted in no significant differences among varying types of program completers (ARC, bachelor's, master's) in routine instructional practices, researchers found that master's degree completers earned significantly higher scores on the Praxis II[®] (ETS, 2013b) LD exam than did ARC program completers. In Study 3, *Praxis II[®] as a Barometer of Special Education Knowledge*, investigators identified positive correlations between grade performance in particular certification course work (e.g., Behavior Management, Assessment) with test scores on the licensure exam. Study 4, *Impact of Teacher Preparation on Student Behavioral Outcomes*, revealed that alternatively-prepared teachers amassed significantly more student discipline referrals than traditionally-prepared teachers. The last Study 5, *Building Teacher Capacity in Higher-Poverty Schools*, examined a critical question germane to challenges presented at the national level, viz., how well do preparation initiatives supply teachers for hard-to-staff schools. Research results indicated that CREATE is supplying twice as many teachers to higher-poverty SC school districts than in lower-poverty districts.

Collectively this body of research contributes to the broader, salient discourse and understanding of how teacher-preparation programs are effective. It highlights distinctions between traditional and alternative preparation programs and validates the need for continued research in this area. The methods developed by CREATE to gauge its accomplishments provides state program evaluators with a model for monitoring program outreach effectiveness. Moreover, CREATE research is an exemplar for how other teacher preparation initiatives can evaluate their impact on meeting school reform needs. The work conducted by CREATE over its decade-long history is noteworthy and reflects the best of collaboration among key stakeholders in the greater SC education community.

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Footnotes

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