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Do University Centers Produce Comparable Teacher Education Candidates?

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This study investigates the effectiveness of a two-plus-two university center teacher education program. In this program, the entire curriculum is delivered on community college campuses; community college faculty members deliver the general education coursework, and university faculty members deliver coursework in the teacher education program area. A comparison of university center teacher education graduates with graduates who completed their programs on the university campus yielded no significant differences across several measures, including grades, assessments of dispositions, progress reports, and self-assessments of competence. The findings suggest that the university center model is a viable alternative to traditional, on-campus teacher education programs and may help address the teacher shortage—especially in rural areas—by reducing geographic and fiscal barriers to baccalaureate teacher education programs.

Keywords: *teacher education; university centers; student outcomes; rural education*

During the next decade, the demand for new teachers in the United States will exceed 2 million (Chambers, Chaloupka, & Weeks, 2003). The growing nationwide teacher shortage, which can be seen in the disparity between the number of candidates prepared by teacher education programs and the demand for teachers, has educational leaders and policy makers exploring different roles for community colleges in the preparation of teachers. Community college involvement in teacher preparation has the potential to produce up to one fourth of the teachers needed to meet the growing demand during the next decade (Blair, 2002; Floyd & Walker, 2003). Community colleges are also attractive sites for recruiting future teachers because they enroll a large percentage of first-time college freshmen and have a student population that is more diverse than the student populations at other postsecondary institutions (Floyd & Walker, 2003; Waiwaiole & Boswell, 2001). In addition, rural areas, which often face the most significant teacher shortages, may benefit the most from community college involvement if access to teacher education degree programs can be extended to these areas. In a study of teacher labor markets, Boyd, Lankford, Loeb, and Wyckoff (2005) found that most teachers prefer to teach in communities with characteristics that are similar to their hometowns; in their study, 61% of all teachers first taught in schools within 15 miles of their hometowns.

To increase access to 4-year degrees, collaborative partnerships called two-plus-two programs have been developed between community colleges and public or private teacher education programs. One type of two-plus-two partnership, the university center model, delivers the entire course of study for the degree on the campus of the community college (Floyd & Walker, 2003). In this model, candidates in the university center follow the same curriculum, have the same degree expectations, and meet the same academic standards as the on-campus students. The community college faculty deliver the general education coursework, and the university faculty delivers coursework in the teacher education program area. All programmatic decisions for the first two years are made by the community college, and all programmatic decisions for the final two years are made by the university. Students can complete their general education coursework through the community college and then complete the university degree coursework without having to attend classes on the main campus of the university. This model is especially useful in rural areas, which are often most affected by a lack of access to 4-year degree programs and by teacher shortages (Evelyn, 2002).

Although two-plus-two programs in a variety of models have flourished in the past 5 years, research on the efficacy of these partnerships is meager. Ignash and Townsend (2003) emphasized the importance of states conducting longitudinal studies that examine the effect of authorizing community colleges to offer 4-year degrees; they suggested that community college baccalaureate graduates and traditional 4-year college graduates should be compared on measures such as national teacher education examinations. In addition, there is research suggesting that there is no significant difference in the final academic performance of university students who had transferred from a community college and native university students (Best & Gehring, 1993; Carlan & Byxbe, 2000; Glass & Harrington, 2002). However, there is no research making the same comparison between the teacher education graduates of university centers and the teacher education graduates of on-campus university programs. As educational leaders consider the adoption of collaborative models that help reduce the teacher shortage, they must weigh the allocation of limited resources, which are constrained by institutional and disciplinary missions, against the efficacy and outcomes of the collaborative model. The current emphasis placed by policy makers, top-tier university leaders, and top-tier community college leaders on collaboration in teacher preparation has heightened the need for data that support decision making.

Background Information

This study focuses on comparing teacher education graduates from one university center model to the university's on-campus teacher education graduates. The intent is to determine if the performance outcomes are comparable and if the model is a viable addition to or alternative for existing teacher preparation programs. Data collected for this study were compiled from existing databases at East Carolina University (ECU) and from the College of Education at the university. These databases provided the descriptive data, performance data, and perceived competence data necessary for this study.

The University Center Model

The partnership between the College of Education at ECU and community colleges in the ECU service area is called Wachovia Partnership East (WPE). The purpose of WPE is to fill more teacher vacancies by making a 4-year education degree available at community colleges throughout the region. Established in 2001, WPE consists of a colocation university center model operating four community college hub site campuses and a virtual consortium. The co-location model is defined as a university center partnership in which the partners share the same physical location to deliver programs (Lorenzo, 2005). The virtual consortium uses an online model for delivering academic programs and student services. The partnership currently serves approximately 277 teacher candidates in three program areas. The first graduating cohort of 16 teachers completed their degree requirements in fall 2005.

The instructional and administrative space at each hub site belongs to the community college, but the degree program and associated staffing and curriculum decisions are made by ECU. An ECU faculty member is assigned to each hub site campus, which serves a specific geographic consortium area that affiliates with the hub site campus. The four physical hub site campuses are located at Beaufort County Community College, Craven Community College, Nash Community College, and Wayne Community College. The virtual consortium serves transfer students from all state community colleges and has an ECU faculty member housed at Pitt Community College.

To effectively provide access to the degree programs, the WPE model has a dual organizational structure. The curricular infrastructure for WPE resides in ECU's Department of Curriculum and Instruction. Each program currently delivered in this partnership resides within this department. Candidates can pursue degrees in elementary education, special education, or middle grades education. The program areas have a coordinator who reports to the departmental chair. Each program area coordinator is responsible for scheduling, staffing, and troubleshooting problems during field experiences and internships. The operational infrastructure for WPE resides in ECU's Office of Teacher Education under the leadership of the director of teacher education. An on-campus coordinator serves as the link between the Office of Teacher Education and the hub site campuses. Each hub site campus has a coordinator who serves a specific consortium area. Within each consortium area there is one hub site campus and several other community colleges that are referred to as spoke campuses. Students can complete their community college coursework at any of the partnering community colleges (spoke campuses). Any face-to-face sessions of the ECU degree coursework are delivered at the hub site campus.

A cohort model, in which a group of students begins and ends the program of study together by taking a prescribed sequence of courses, is utilized in WPE to deliver the degree programs. A new elementary education cohort begins at each hub site campus every fall semester; these cohorts are limited to 24 participants. In the fall, candidates begin the ECU portion of the degree coursework; some students are dually enrolled during the 1st year to complete the general education requirements at the community college. Students are encouraged to complete the associate's of arts degree from the community college. The elementary education program is a 13-term sequence (the fall, spring, and summer semesters are each considered a term) and leads to K-6 elementary education licensure with an add-on licensure for K-12 reading. Two special education cohorts are begun each year, one in the fall semester and one in the spring semester. These cohorts are limited to 20 participants and consist of students representing all hub site campuses. The current special education program is an 11-term sequence (the fall, spring, and summer semesters are each considered a term) and leads to a K-12 special education license and an add-on license in K-12 reading. For both the elementary education and special program areas, some courses are taught in a completely face-to-face format at the hub site; some are taught completely online; and some are taught in a blended model of face-to-face instruction, online instruction, and teleconferencing. The middle grades education program, which began in 2007, is an 11-term sequence, and plans exist to start one new cohort annually.

One of the most essential components of this partnership is the hub site coordinator, an ECU faculty member who works at the hub site campus and serves a consortium area. The coordinators are responsible for recruitment, student support, and, most important, advising. Collaborative advising sessions are scheduled between the hub site campus coordinators and all the community college advisors so that students are aware of the coursework required for admission to the program and understand the connected scope and sequence of the curriculum. In addition to being a critical component of the advising process, the hub site coordinators work with the university admissions and financial aid offices to ensure that the candidates are admitted and receive their financial support in a timely manner. The candidates have one university contact, the hub site coordinator, to whom they can address their issues and concerns.

The goals of WPE are based on degree access and market demands. By providing degree access in local communities and recruiting candidates with rural backgrounds or with personal characteristics or educational experiences that predispose them to live in rural areas, this model gives public school systems access to a previously untapped resource in addressing the teacher shortage. The program recruits prospective teachers from rural areas and educates them close to home, allowing them to remain in the rural communities where they live and have lived for most of their lives. Research by Boyd et al. (2005) suggests that because these individuals are members of the community and are often already connected to the school system, they are more likely to remain in the community upon degree completion.

Data Sources

All data collected for this study were compiled from existing databases at ECU and its College of Education. The College of Education information management system maintains teacher candidate information and retrieves additional information from the university's academic databases. These databases provided the descriptive data, performance data, and perceived competence data necessary for this study.

Descriptive data included age, ethnicity, gender, and Praxis I scores. Performance data included upper-division grade point average (GPA), final internship grade, Praxis II scores, ratings of students on a dispositions survey, ratings of students on internship progress reports, and ratings of student products in the senior portfolios. Survey responses from students on the Evaluation of Teacher Education Program questionnaire were used for the perceived competence data.

Teacher education candidates at ECU must qualify for admission to the upper division to complete the upper-level course requirements. A set of courses in both elementary education and special education is designated as upper division. Students cannot enroll in these courses unless they are fully admitted to the upper division. The GPA data included in this study represent the grades for upper-division coursework only.

In compliance with state licensure standards, students completing degree or licensure programs in elementary education or special education must pass the Praxis II tests required in each program area. Elementary education candidates have two Praxis II tests; one deals with elementary education curriculum, instruction, and assessment, and the other deals with elementary education content area exercises. Students must have a combined score of 313 (out of a possible 400) to qualify for licensure. Special education candidates must take two tests, one dealing with core content knowledge and the other dealing with exceptional children who have mild to moderate disabilities. At the time data were collected for this study, candidates needed a minimum score of 143 (out of a possible 200) on the core content test and a minimum score of 159 (out of a possible 200) on the mild to moderate disabilities test to qualify for licensure. Test scores are submitted to ECU by the Educational Testing Service.

All undergraduate teacher education candidates at ECU are required to complete a two-semester senior internship with a clinical teacher in a public school. During the first semester, the student spends 1 day per week assisting the clinical teacher and completing assignments related to the program area coursework. During the second semester, the student works with the same clinical teacher on a full-time basis and is assigned a university supervisor. It is the supervisor's responsibility to conduct a minimum of four observations, evaluate the student's portfolios, and submit all required paperwork to the Office of Clinical Experiences, which coordinates all field experiences. The final internship grade is given by the university supervisor in consultation with the clinical teacher. This grade is a summative evaluation of the internship experience. A candidate must receive a grade of C or better in the culminating internship to qualify for licensure in the state of North Carolina.

Each teacher education intern is required to submit a portfolio during the final semester internship. Across all teacher education programs, there are four common components. Component A includes the candidate's instructional practice work sample and is subdivided into four elements: unit plan, lesson plans, related student work and formative assessment, and reflection. Component B deals with classroom management and is subdivided into seven elements: classroom rules, daily protocols and routines, levels of consequences, intervention strategies, preventive management and motivation techniques, implementation plan, and reflection. Component C deals with impact on student learning and is subdivided into three elements: assessment design, data analysis, and reflection. This component also includes student pretest and posttest data of one instructional unit. Component D covers technology skills. Each element in all components is rated as *above expectations*, *meets expectations*, or *below expectations* by the university supervisor in accordance with a common teacher education portfolio rubric. Each component must be at the *meets expectations* standard to be considered passing. For the purposes of this study, Component D was not included in the data collection because it is based on competencies met in a required technology course.

Throughout the program, the Teacher Education Candidate Dispositions Survey, developed by the Council for Teacher Education, is used to create awareness of, provide feedback on, and evaluate the candidates' dispositions. Form C, Evaluation, is completed by the university supervisor during the final semester of the senior-year internship. The 20 items on the form are divided into three categories: professional demeanor, professional commitment, and professional interactions. The university supervisor rates each item based on the frequency of the candidate's observed behavior using a 4-point scale: 4 = *always, almost always*, 3 = *usually*, 2 = *sometimes*, and 1 = *rarely*.

A Progress Report Form, also developed by the Council for Teacher Education, is submitted at least four times for each candidate by the university supervisor during the final semester internship. This report is divided into seven sections: planning, knowledge of subject area, management of instructional time, management of student behavior, presentation, instructional monitoring and feedback, and professional attitudes and relationships.

The item ratings are *above satisfactory*, *satisfactory*, *needs improvement*, and *unsatisfactory*. Each report is reviewed and signed by the candidate, clinical teacher, and university supervisor. The fourth or final progress report scores were used in this study.

Candidates' perceived competence is assessed using the Evaluation of Teacher Education Program, an exit survey developed by the Council for Teacher Education. Prior to completion of the senior internship experience, the interns are provided with a link to an online version of the survey. All interns are required to complete this evaluation prior to the end of the internship. The purpose of this instrument is to allow the candidates to provide feedback about their perceived competence in relation to their teacher education preparation and to make suggestions about the program. Candidates are asked to respond to 20 competency items dealing with school law, child psychology, assessment techniques, classroom management, diversity, and student advising. They are also asked to provide specific feedback about elements of the internship experience.

Study Sample and Method

The study compares the academic performance, dispositional indicators, and perceived competence of university center teacher education graduates and on-campus teacher education students who graduated in the 2005-2006 academic year. During this academic year, there were 234 elementary education degree completers (205 from the on-campus program and 29 from the university centers) and 25 special education degree completers (14 from the on-campus program and 11 from the university centers). The study sample consists of all 40 degree completers from the university centers and a random sample of 29 on-campus elementary education degree completers and 11 on-campus special education degree completers.

The descriptive, performance, and perceived competence data for the 40 university center degree completers were compared to the data for the random sample of 40 on-campus teacher education graduates. The SPSS 13.0 quantitative software package was utilized to analyze the data. The interval data were analyzed using the *t* test for independent samples, and the nominal data were analyzed using the chi-square test. A significance level of .01 was set to determine if the results were chance occurrences rather than results of some differences between the two comparison groups.

Table 1
Analysis of Sample Characteristics

	University Center					On Campus				
	N	*M*	*SD*	*n*	%	*N*	*M*	*SD*	*n*	%
Age[a]	40	35.83	9.386			40	23.28	2.764		
Ethnicity[b]										
Black				1	2.5				2	5.0
White				39	97.5				38	95.0
Gender[c]										
Male				0	0.0				1	2.5
Female				40	100.0				39	97.5
Praxis I performance										
Reading[d]	40	180.15	2.949			40	180.13	2.839		
Writing[e]	40	176.55	2.470			40	176.78	2.860		
Mathematics[f]	40	178.63	4.198			40	181.00	4.309		

a. $t(78) = 8.112$, $p = .000$.
b. $\chi^2(1, N = 40) = 0.346$, $p = .556$.
c. $\chi^2(1, N = 40) = 1.013$, $p = .314$.
d. $t(78) = 0.39$, $p = .969$.
e. $t(78) = –0.377$, $p = .708$.
f. $t(78) = –2.497$, $p = .015$.

Results

Analysis of Sample Characteristics

The university center sample consists of an existing group of 29 elementary education degree completers and 11 special education degree completers. Because the on-campus group was selected randomly from 205 elementary education degree completers and 14 special education degree completers, the first level of analysis in the study was conducted to ensure further comparability of the program results. An analysis of age, ethnicity, gender, and Praxis I scores was conducted to statistically test any differences between the two groups (Table 1).

The 40 university center students ranged in age (Table 1) from 23 to 53, and their average age was older than that for the 40 on-campus students, who ranged in age from 22 to 39. The results of the *t* test for equality of means of independent samples indicated there was a significant difference between the two groups in regard to this variable. Of the 40 university center students, 2.5% were Black and 97.5% were White (Table 1). Of the 40 on-campus students, 5.0% were Black and 95.0% were White. There was no significant difference between the two groups in regard to ethnicity. Likewise, there was no significant difference in terms of gender; in all, 40 (100.0%) of the university center students were female (Table 1) and 39 (97.5%) of the 40 on-campus students were female.

On the reading portion of the Praxis I examination (Table 1), the university center students' performance was very similar to the performance of on-campus students; no significant difference was found. The same held true for the writing portion of Praxis I, and though the university center students had a slightly lower average score than did the on-campus students in the mathematics portion of the Praxis I examination, the difference was not statistically significant.

Thus, the analysis of the descriptive characteristics (Table 1) revealed no significant difference between the university center graduates and on-campus graduates in terms of ethnicity, gender, and performance on the Praxis I examination. There was a significant difference in the age distribution, but this appears to reflect a recurring difference in the composition of the university center and on-campus student populations and was not viewed as an impediment to the analysis of the program performance characteristics (Grady, 2005).

Analysis of Performance Data

Six different measures assessing 44 separate items of candidate performance were analyzed in this study: upper-division GPA, internship final grades, PRAXIS II scores, supervisor ratings of student dispositions during the final semester, supervisor ratings in progress reports, and supervisor ratings of the senior portfolio.

Upper-division GPA. The candidates' grades in a set of upper-division courses in their program areas were used to calculate the upper-division GPA. The upper-division GPAs (Table 2) of the 40 university center students were similar to the upper- division GPAs of the 40 on-campus students. The results of the *t* tests for equality of means of independent samples revealed no significant differences between the two groups in their performance on upper-division coursework.

Senior II internship grade. The second performance measure analyzed was the final internship grade, which was given by the university supervisor in consultation with the clinical teacher. Of the 40 university center students, 90.0% received a final grade of A and 10.0% received a final grade of B in

Table 2
Grades and Praxis II Cutoff Score Differentials

	University Center					On Campus				
	N	*M*	*SD*	*n*	%	*N*	*M*	*SD*	*n*	%
GPA in upper-division courses[a]	40	3.846	0.226			40	3.903	0.143		
Senior II internship grades[b]										
A				36	90.0				38	95.0
B				4	10.0				1	2.5
C				0	0.0				1	2.5
Praxis II cutoff score differential[c]	38	29.18	24.402			37	35.95	24.125		

a. $t(78) = 1.351$, $p = .180$.
b. $\chi^2(2, N = 40) = 2.854$, $p = .240$.
c. $t(73) = 1.207$, $p = .232$.

the internship (Table 2). Of the 40 on-campus students, 95.0% received a final grade of A, 2.5% received a final grade of B, and 2.5% received a final grade of C in the internship. The results of the chi-square test indicate that there was no significant difference between the two groups in regard to their final grade in the internship.

Praxis II scores. Each candidate completed different Praxis exams in his or her area (elementary education or special education). To compare the scores when elementary and special education majors were present in the same group, a differential score was calculated. A candidate's scores on both exams were summed and subtracted from the combined passing scores on both required exams to determine the cutoff score differential. The Praxis II cutoff score differential (Table 2) of 38 university center students was not significantly different from that of 37 on-campus students. The results of the *t* test for equality of means of independent samples for this variable indicated that there was no significant difference between the two groups in regard to their performance relative to the cutoff scores on the Praxis II exams.

Dispositions. The results of Candidate Dispositions Survey—Form C, which was completed by the university supervisor during the final semester of the senior-year internship, constituted the fourth performance measure analyzed. The chi-square results for the analysis of 20 dispositional items indicated that there were no significant differences in the behaviors of the on-campus and university center program completers (Table 3). The desired dispositions were observed as being usually or always present from 97.4% to 100.0% of the time for on-campus program completers and from 94.6% to 100.0% of the time for university center program completers.

Progress reports. The fifth performance measure analyzed was the final progress report of the internship. The chi-square analyses of the ratings in the reports indicated that there was no significant differences between the on-campus and university center program completers on any of the seven aspects assessed (Table 4). The percentage of on-campus completers receiving ratings of *satisfactory* or *above satisfactory* ranged from 95.0% to 100.0% across the seven items that were assessed; the percentage of university center program completers with *satisfactory* or *above satisfactory* ratings ranged from 97.5% to 100.0%.

Portfolio. Ratings of the senior portfolio constituted the final performance measure that was analyzed. The scores for three components consisting of 14 separate items were analyzed (Table 5). The results of the chi-square tests for Component A (instructional practice), Component B (classroom management), and Component C (impact on student learning) indicated that there were no significant differences between the two groups on any of the portfolio elements (Table 5). All of the students in each group met or exceeded expectations.

Analysis of Perceived Competence

The perceived competence of the university center teacher education graduates and the on-campus teacher education graduates was assessed in terms of their responses to the Evaluation of Teacher Education Survey (Table 6), which was conducted prior to completion of the senior internship experience. The candidates rated 20 items dealing with specific competencies on a continuum from *strongly agree* to *strongly disagree*. The percentage of on-campus program completers who responded with *agree* or *strongly agree* ranged from 88.8% to 97.2% across the 20 items, compared to a range of 82.4% to 94.2% of the university center completers. The results of the chi-square tests on all 20 items (Table 6) indicated that there were no significant differences between the two groups in their perceived competence.

Discussion

The purpose of this study was to determine if there was any significant difference between the quality of teacher education graduates prepared

Table 3
Dispositions Survey Results

		Item Ratings				χ^2 Results		
Item	*N*	*Never* (%)	*Sometimes* (%)	*Usually* (%)	*Always* (%)	χ^2	*df*	*p*
A. Ethics								
University center	38	0.0	0.0	5.3	94.7			
On campus	40	0.0	0.0	5.0	95.0	0.003	1	.958
B. Professional attire								
University center	38	0.0	2.6	0.0	97.4			
On campus	40	0.0	0.0	10.0	90.0	4.966	2	.084
C. Reliability								
University center	38	0.0	2.6	13.2	84.2			
On campus	40	0.0	0.0	15.0	85.0	1.101	2	.577
D. Positive attitude								
University center	38	0.0	0.0	2.6	97.4			
On campus	40	0.0	0.0	7.5	92.5	0.949	1	.330
E. Responds to stress								
University center	37	0.0	5.4	5.4	89.2			
On campus	40	0.0	0.0	15.0	85.0	3.904	2	.142
F. Resourcefulness								
University center	38	0.0	0.0	10.5	89.5			
On campus	40	0.0	2.5	17.5	80.0	1.829	2	.401
G. Takes responsibility								
University center	37	0.0	5.4	5.4	89.2			
On campus	40	0.0	0.0	7.5	92.5	2.315	2	.314
H. Culturally responsive								
University center	38	0.0	0.0	5.3	94.7			
On campus	40	0.0	0.0	7.5	92.5	0.163	1	.687
I. Decision making								
University center	38	0.0	0.0	2.6	97.4			
On campus	40	0.0	0.0	5.0	95.0	0.296	1	.587
J. Critical thinking								
University center	38	0.0	0.0	13.2	86.8			
On campus	40	0.0	2.5	12.5	85.0	0.964	2	.617
K. Seeks feedback								
University center	38	0.0	2.6	7.9	89.5			
On campus	40	0.0	0.0	7.5	92.5	1.076	2	.584
L. Accepts criticism								
University center	38	0.0	2.6	7.9	89.5			
On campus	40	0.0	2.5	5.0	92.5	0.276	2	.871
M. Reflection								
University center	38	0.0	0.0	7.9	92.1			
On campus	40	0.0	0.0	12.5	87.5	0.449	1	.503
N. Teaching strategies								
University center	38	0.0	0.0	5.3	94.7			
On campus	40	0.0	0.0	12.5	87.5	1.249	1	.264

(continued)

Table 3 (continued)

Item	N	Item Ratings: Never (%)	Sometimes (%)	Usually (%)	Always (%)	χ^2 Results: χ^2	df	p
O. Listening								
University center	38	0.0	0.0	10.5	89.5			
On campus	40	0.0	0.0	12.5	87.5	0.074	1	.785
P. Diplomacy								
University center	38	0.0	2.6	7.9	89.5			
On campus	40	0.0	0.0	10.0	90.0	1.149	2	.563
Q. Self-monitoring								
University center	38	0.0	0.0	7.9	92.1			
On campus	40	0.0	0.0	10.0	90.0	0.106	1	.745
R. Group functioning								
University center	38	0.0	0.0	0.0	100			
On campus	40	0.0	0.0	7.5	92.5	2.964	1	.085
S. Oral communication								
University center	38	0.0	2.6	0.0	97.4			
On campus	40	0.0	0.0	7.5	92.5	3.951	2	.139
T. Written communication								
University center	38	2.6	2.6	2.6	92.2			
On campus	40	0.0	0.0	7.5	92.5	3.006	3	.391

through a university center model of program delivery and the quality of teacher education graduates prepared in a traditional on-campus program. An analysis of variables assessing candidate performance, dispositional indicators, and perceived competence indicates that there were no significant differences between the 40 university center teacher education graduates and the 40 on-campus teacher education graduates on any of the measures reviewed. The results of this study provide a foundation for future studies examining the role of community colleges in teacher preparation and have several implications for educational leaders.

First, the results of this study suggest the efficacy of the university center model as a viable alternative to traditional on-campus teacher education programs. Ignash and Townsend (2003) recommended that longitudinal studies of teacher preparation partnerships between universities and community colleges be conducted to assess the efficacy of this approach. In addition, Coulter and Crowe (2003) recommended that all program completers should be held to the same quality standards regardless of the type of institutions that provide the program. Although this study is limited to one university center at one institution involving 80 graduates from two program areas, the results do

Table 4
Progress Report Results

Item	*N*	Item Ratings: *Needs Improvement* (%)	Item Ratings: *Satisfactory* (%)	Item Ratings: *Above Satisfactory* (%)	χ^2 Results ($df = 2$): χ^2	χ^2 Results ($df = 2$): *p*
Planning						
University center	40	2.5	7.5	90.0		
On campus	40	0.0	12.5	87.5	1.514	.469
Subject knowledge						
University center	40	2.5	5.0	92.5		
On campus	40	2.5	22.5	75.0	5.186	.075
Instructional time						
University center	40	2.5	15.0	82.5		
On campus	40	0.0	20.0	80.0	1.301	.522
Student behavior						
University center	40	2.5	17.5	80.0		
On campus	40	2.5	17.5	80.0	0.000	1.00
Presentation						
University center	40	2.5	15.0	82.5		
On campus	40	0.0	20.0	80.0	1.301	.522
Instructional monitoring						
University center	40	0.0	12.5	87.5		
On campus	40	5.0	17.5	77.5	2.576	.276
Professionalism						
University center	40	0.0	15.0	85.0		
On campus	40	2.5	12.5	85.0	1.091	.580

support the efficacy of the university center model. The quality of candidates as measured by the outcome indicators used by the teacher education program at ECU indicates that the candidates are comparable, and educational leaders at both the community colleges and the university now have data to support the investments made in this model.

Second, the results of this comparison suggest that educational leaders and policy makers can create and expand similar collaborative models in an effort to reduce the barriers of degree access and affordability for students pursuing a teaching career. According to Coulter and Crowe (2003), the resources necessary to establish a two-plus-two partnership are less involved than those needed to create a bachelor's degree program on the campus of a community college. Increased degree access and more affordable programs can encourage individuals interested in a degree in education to purse the degree

Table 5
Portfolio Results

Item	N	Item Ratings: *Meets Expectations* (%)	Item Ratings: *Exceeds Expectations* (%)	χ^2 Results ($df = 1$): χ^2	χ^2 Results ($df = 1$): *p*
Component A—Instructional practice					
1. Unit plan					
University center	40	20.0	80.0		
On campus	40	35.0	65.0	2.257	.133
2. Lesson plans					
University center	40	12.5	87.5		
On campus	40	25.0	75.0	2.051	.152
3. Student work					
University center	40	20.0	80.0		
On campus	40	37.5	62.5	2.990	.084
4. Reflection					
University center	40	20.0	80.0		
On campus	40	25.0	75.0	0.287	.592
Component B—Classroom management					
1. Classroom rules					
University center	40	62.5	37.5		
On campus	40	45.0	55.0	2.464	.116
2. Daily routines					
University center	40	37.5	62.5		
On campus	40	32.5	67.5	0.220	.639
3. Consequences					
University center	40	57.5	42.5		
On campus	40	55.0	45.0	0.202	.653
4. Intervention strategies					
University center	40	60.0	40.0		
On campus	40	47.5	52.5	1.257	.262
5. Preventive techniques					
University center	40	50.0	50.0		
On campus	40	52.5	47.5	0.050	.823
6. Implementation plan					
University center	40	55.0	45.0		
On campus	40	42.5	57.5	1.251	.263
7. Reflection					
University center	40	32.5	67.5		
On campus	40	25.0	75.0	0.549	.459
Component C—Impact on student learning					
1. Assessment design					
University center	39	46.2	53.8		
On campus	40	52.5	47.5	0.318	.573

(continued)

Table 5 (continued)

Item	N	Item Ratings: *Meets Expectations* (%)	*Exceeds Expectations* (%)	χ^2 Results ($df = 1$): χ^2	p
2. Data analysis					
University center	39	61.5	38.5		
On campus	40	65.0	35.0	0.102	.750
3. Reflection					
University center	39	35.9	64.1		
On campus	40	40.0	60.0	0.141	.707

program (Hagedorn, Newman, & Duffy, 2003). Grady (2005) found that the university center model can alleviate some of these barriers for transfer students. In addition to the administrative benefits of developing more cost-effective collaborations through university center models, the students also receive the benefit of more affordable degree options. The cost of completing the foundations curriculum coursework at a local community college and then completing the final 2 years of the 4-year degree at university rates makes the university center degree programs more affordable when compared to the on-campus alterative. The results of this study indicate that the mode of delivering the teacher preparation program does not affect the quality of the graduate at the time of degree completion. With no significant differences found in the quality of the graduates, educational leaders can consider creating similar collaborative models to help reduce the barriers of access and affordability for those individuals interested in a teaching career.

Third, the results of this comparison suggest that educational leaders and policy makers can create and expand collaborative models of equal quality with traditional university programs in an effort to reduce the teacher shortage in rural areas. American schools will fall short by 870,000 teachers during the current decade (Curran, Abrahams, & Manuel, 2000). Rural areas, which frequently face the most significant teacher shortages, are often at a disadvantage because of the lack of access to local teacher preparation programs. As noted at the beginning of this article, most teachers prefer to teach in communities with characteristics similar to those of their hometowns, and Boyd et al. (2005) found that 61% of teachers in their study first taught in schools within 15 miles of their hometowns or of the town in which they attended college. The capacity of the university center model to produce candidates who are comparable to those prepared in traditional university programs has the

Table 6
Student Self-Assessments of Competency as Determined in the Evaluation of Teacher Education Survey Results

		Item Ratings				χ^2 Results		
Items	*N*	*Strongly Disagree* (%)	*Disagree* (%)	*Agree* (%)	*Strongly Agree* (%)	χ^2	*df*	*p*
1. Communication								
a. Influence of communication on individualized development								
University center	34	0.0	17.6	38.2	44.2			
On campus	36	0.0	2.8	61.1	36.1	5.976	2	.050
b. Process—Listening to speak, read, and write								
University center	33	3.0	15.2	39.4	42.4			
On campus	36	0.0	5.6	61.1	33.3	4.632	3	.201
2. School laws that relate to teaching								
University center	33	0.0	6.1	57.5	36.4			
On campus	36	0.0	16.7	52.7	30.6	1.197	2	.384
3. Foundations—Historical and philosophical content of education issues								
University center	34	0.0	8.8	55.9	35.3			
On campus	36	0.0	8.3	63.9	27.8	0.506	2	.776
4. Child development—Cognitive, psychological, and social growth								
University center	34	0.0	11.7	47.1	41.2			
On campus	36	0.0	11.1	47.2	41.7	0.008	2	.996
5. Application of knowledge of child development in planning instruction								
University center	34	0.0	11.8	44.1	44.1			
On campus	36	0.0	11.1	36.1	52.8	0.557	2	.757
6. Working with students of varying ability levels and backgrounds								
University center	34	0.0	8.8	47.1	44.1			
On campus	36	2.8	8.3	38.9	50.0	1.350	3	.717
7. Adjust teaching to meet needs of exceptional children								
University center	34	0.0	11.8	38.2	50.0			
On campus	36	2.8	8.3	36.1	52.8	1.198	3	.754
8. Implementation of instruction								
University center	34	0.0	8.8	38.3	52.9			
On campus	36	0.0	5.6	38.8	55.6	0.285	2	.867
9. Technology used in instruction								
University center	33	0.0	9.1	39.4	51.5			
On campus	36	0.0	5.6	47.2	47.2	0.604	2	.739
10. Reading—Diagnose problems and prescribe strategies for improvement								
University center	34	0.0	14.7	58.8	26.5			
On campus	36	2.8	11.1	58.3	27.8	1.132	3	.769
11. Assess reading levels and choose materials to match student capabilities								
University center	34	0.0	14.7	52.9	32.4			
On campus	36	2.8	8.3	61.1	27.8	1.892	3	.595
12. Organize classroom for effective use								
University center	34	0.0	11.8	38.2	50.0			
On campus	36	0.0	11.1	41.7	47.2	0.086	2	.958

(continued)

Table 6 (continued)

Items	N	Item Ratings: Strongly Disagree (%)	Disagree (%)	Agree (%)	Strongly Agree (%)	χ^2 Results: χ^2	df	p
13. Classroom management—Observe, organize, and manage behavior								
University center	34	0.0	11.7	41.2	47.1			
On campus	36	0.0	8.4	47.2	44.4	0.376	2	.828
14. Methods courses—Skills to effectively plan for instruction								
University center	34	0.0	17.6	38.3	44.1			
On campus	36	0.0	8.3	44.5	47.2	1.379	2	.502
15. Student assessment—Knowledge and skills to evaluate or assess students								
University center	34	0.0	17.6	38.3	44.1			
On campus	36	0.0	5.6	44.4	50.0	2.528	2	.283
16. Modify instructional practices from evaluation								
University center	34	0.0	14.7	38.2	47.1			
On campus	36	0.0	5.6	44.4	50.0	1.658	2	.437
17. Effectively discipline students								
University center	34	0.0	8.8	47.1	44.1			
On campus	36	5.6	2.8	47.2	44.4	3.008	3	.390
18. Understand the need for continuing professional development								
University center	34	0.0	5.9	38.2	55.9			
On campus	34	0.0	0.0	38.2	61.8	2.100	2	.350
19. Reflection—Adjustment of teaching to improve teaching								
University center	34	0.0	5.9	38.2	55.9			
On campus	34	0.0	2.9	20.6	76.5	3.22	2	.200
20. Ability to teach children from diverse cultural backgrounds								
University center	33	0.0	6.1	45.4	48.5			
On campus	33	0.0	6.1	30.3	63.6	1.676	2	.433

potential to affect the teacher shortage for rural areas by providing a pool of local teachers for those areas. This model would enable universities, community colleges, and public schools to collectively recruit candidates who are rooted in their local communities and provide them with an opportunity to complete a degree program that is both affordable and accessible.

Fourth, the results of this comparison suggest that the institution that delivers the foundations component of the curriculum is not a significant factor in the quality of the graduate. When pursuing partnerships with community colleges, many 4-year college educators have expressed concern about the basic skills necessary to succeed in college-level classes (Kisker, 2007) and about being held accountable for the performance of students whose general education occurred at another institution (Lindstrom & Rasch, 2003). The results from the outcome measures used in this study may lessen those concerns because they suggest that there is no significant difference in the quality of the teacher education graduates regardless of the mode of delivery. The university center students completed their foundations curriculum requirements at local community colleges before making the transition into the degree program offered through the university center. In addition, the random sample of on-campus students may have included transfer students (as well as native students) who may have completed their foundations curriculum on the university campus, at other 4-year institutions, or at a community college. Because the results in this study suggest no significant difference in the quality of the graduate, the institution that delivers the foundations curriculum courses may not be a factor in the success of the teacher education graduate.

Recommendations

The findings and conclusions of this study have the potential to affect the delivery of teacher preparation in ways that would increase access to and the affordability of degree programs and reduce teacher shortages, particularly in rural areas. Before this potential can be realized, however, additional research and confirmatory results are needed. First, it is recommended that further research on the efficacy of the university center model used in this study be conducted with larger samples. One of the limitations of this study is that the population of university center graduates was limited to three cohorts with a total of 40 graduates from two program areas. These were the first graduates from a program that, because of the cohort structure and the part-time attendance of students, required 11 to 13 terms for degree completion. Initially, educational leaders can benefit from results with a limited sample size to explore the efficacy of the model, but additional research is needed to determine if the results of this study are supported when the quality of a larger number of university center teacher education graduates is examined.

Future research should also expand on this study to follow the program completers after graduation, examining their attrition rates, performance evaluations, and impact on K-12 student achievement. The variables used in this study were the outcome measures used by the teacher education program at ECU. If the university center model creates a local pool of teachers for the public school partners, research may be necessary to determine if the local candidates are more likely to remain in the profession when compared to other teachers in the system. Also, because this study found no significant difference in the quality of the graduates, research may be needed to make similar comparisons between experienced teachers who completed their degrees in university centers and those who completed their degrees in the on-campus program.

Future research might also determine if there is a difference in the impact that university center graduates and on-campus graduates have on their students. If there is no significant difference between the two groups at the point of degree completion, future research may seek to determine if involvement in either mode of delivery affects the impact novice teachers have in their classrooms.

Finally, similar research examining the outcomes of other collaborative models from other institutions should be conducted. Because the results of this study are not generalizable to other university center models, and because a typology of collaborative models exists (Floyd & Walker, 2003) , future research is needed to determine if the results of this study are supported in other collaborative models. If educational leaders seek to provide degree access and affect the teacher shortage, they must determine which collaborative models are the most effective ones. Additional studies that have similar results may ease the concern about candidate performance and accountability for teacher education providers.

Results from this study support the efficacy of a two-plus-two university center model in preparing teachers and suggest that it has the potential to increase degree access and provide a local pool of teachers to affect the teacher shortage. Additional research is needed to determine if the results of this study are supported and if university center models can lessen the teacher shortage. Future research can also determine if there is any significant difference between teachers prepared in either mode in terms of the instructional delivery and the quality and retention of novice teachers.

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