The Effects of Teacher Preparation Special Population Courses for Multispecialty Certification

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Abstract

Educational systems in the United States rely on federal mandates to protect and improve learning opportunities for English learners (ELs) and students with disabilities (SWDs), yet there is little evidence that teacher preparation programs provide fully integrated curricula to ensure that teacher candidates receive the foundational knowledge, theory, and practice through strategic coursework to support ELs and SWDs in general education classrooms. In response to this need, the researchers created a Special Populations course sequence that integrates English as a Second Language (ESL), bilingual education, and special education content and critical pedagogy. This study measured the effect of the Special Populations courses on teacher candidates' acquisition of comprehensive knowledge and domain knowledge as assessed by the ESL, bilingual, Bilingual Target Language Proficiency Test, and special education certification exams. Results inform teacher preparation policy and program developers in co-constructing integrated programs that promote teaching diverse student populations in K−12 classrooms.

The Effects of Teacher Preparation Special Population Courses for Multispecialty Certification

It is now of critical importance that current and future educators are prepared to teach linguistically, culturally, and cognitively diverse students in general education spaces (Florian, 2012; National Center for Education Statistics [NCES], 2016). "Ultimately the work of education in a democracy is to provide opportunities for all citizens to participate fully in the formation of the nation and its ideals. These ideals can never be fully realized if significant portions of our society are excluded from high-quality education" (Ladson-Billings, 2009, p. 466). Educational systems in the United States and abroad have made strides toward inclusivity and equity with the understanding that all students, including English learners (ELs) and students with disabilities (SWDs), must be prepared for a dynamic workforce with different skills and knowledge than previously required (Weiss & McGuinn, 2016). The United States student populations are more culturally, linguistically, and cognitively diverse than ever before; however, historical data on the achievement and opportunity gaps for diverse populations of students indicate that educational systems have not evolved in a manner that supports them (McLaughlin, 2010).

The U.S. Department of Education defines student special populations as "students that must overcome barriers that may require special consideration and attention to ensure equal opportunity for success in an educational setting" (Office of Elementary & Secondary Education, 2020, Para. 1). EL student populations, the fastest-growing subpopulation in U.S. public education, grew from 8.1% to 9.6% from 2000 to 2016; only seven states saw no increase in EL enrollment (NCES,

2020). The Pew Research Center (2016) reported that 72% of ELs are native-born. In 2018, NCES reported that 30 different languages account for over 85% of the home languages of U.S. ELs. Bilingual education, in the form of additive language programs, date back to the earliest periods of colonization of the United States and thus are part of the nation's foundational history. However, bilingual education is a highly politicized topic and, thus, overall support for it is inconsistent and often wavers in favor of subtractive, assimilationist language programs such as English as a Second Language (ESL) that focus only on English language proficiency and result in abandonment of the student's home language (San Miguel, 2004). Although ELs account for almost a 10th of the student population, they also have the lowest rates of achievement and highest dropout rates (Albers et al., 2009; NCES, 2016; Wright, 2019). This suggests that the U.S. educational system is still failing to provide EL populations with equitable educational opportunities and, in essence, failing nearly 10% of the entire student population in the country.

Students receiving special education services are protected under the Individuals with Disabilities Education Act (IDEA; 2004) and are required to have an annual Individualized Education Plan (IEP) that directs their access to the grade-level curriculum and instructional opportunities within the least restrictive learning environment to the maximum extent that is appropriate (Zigmond et al., 2009). With the Every Student Succeeds Act (ESSA; 2015) requirements that SWDs participate in and perform equally with their nondisabled peers on statewide assessments, the pressure to place SWDs in general education classrooms with educators trained in special education who can provide the appropriate support and accommodations has dramatically increased (Zigmond, 2003). NCES (2019) reported that the number of SWDs ages 3 to 21 who received special education services under IDEA was 7 million, or 14% of all public-school students in 2017–2018, 95% of whom were required by federal law to participate in state-mandated standardized assessments (The National Center for Fair and Open Testing, 2019). Evidence indicates that SWDs experience significantly lower passing rates on mandated state assessments; average students' passing scores ranged between 65% and 85% compared to SWDs, whose scores ranged from 4% to 12% (Katsiyannis et al., 2007; NCES, 2019). SWDs are particularly vulnerable to the long-term consequences of failing standardized assessments, including lower high school graduation rates and college admissions, as well as future employment and economic outcome (Katsiyannis et al., 2007). NCES (2018) reported the graduation rate for SWDs falls far below the overall national graduation average. In 2017, the high school graduation rate for students without disabilities was 85% and the graduation rate for SWDs was 67% (NCES, 2018). Of the 67% of SWDs who graduated from high school in 2017, only 19% enrolled in a postsecondary institution (NCES, 2019).

Background of the Problem

Historically, minority and special student populations have exhibited a "pattern of poor performance consistent across time, school location, achievement type and student demographic," but this pattern is only a symptom of a flawed system (Gay, 2014, p. 354). Failure to account for societal inequities that exist because of antiquated demands for standardization in U.S. education could be detrimental to the success of millions of culturally, linguistically, and cognitively diverse students (Darling-Hammond, 2007; Ladson-Billings, 2013). Despite constant patterns and trajectories of growth of culturally, linguistically, and cognitively diverse student populations, teacher preparation and development remain relatively unchanged and reliant on reactionary measures and interventions that oftentimes come too late for millions of students. The complexities of how best to serve special populations of students within a system that was built to maintain

standardization are further exhibited when considering that in 2018 approximately 15.3% of ELs were also identified as SWDs (NCES, 2018). Furthermore, research focused on the disproportionate classification of ELs in special education first appeared in a study by Dunn (1968) and has been studied twice by the National Research Council (Sullivan, 2011). Inappropriate classification can be the catalyst for a negative series of events including regression in academic ability, lowered self-esteem, change in attitude toward education, denial of equal educational opportunity, and limited access to postsecondary opportunities (Ortiz & Yates, 2002). Standardized approaches are incapable of reforming complex issues of inequity that permeate the foundation of the U.S. educational system, and thus integrated approaches that center on historically marginalized student populations are necessary (Paris & Alim, 2017).

Despite U.S. federal policies such as IDEA and ESSA that mandate and protect equal opportunities for special populations, due to variances across states regarding teacher preparation, specialized certification, and educational systems there fails to be a clear indication of how to capitalize on the intended purpose of these mandates. Thus, to ensure that faculty are prepared to support increasingly diverse populations of students, including ELs and SWDs, there is a sense of urgency to identify and address how teacher education programs are preparing teacher candidates for inclusive classrooms (Pullen, 2017). Although collaborative teacher education programs have existed since the late 1980s there is a need for the field to move beyond superficial additive approaches, which add specialty content to a general education curriculum, toward a transformative model that fully centers on the study of educating and supporting special populations of students and thus integrates specialty content into the entire curriculum (Pugach & Blanton, 2009; Pugach et al., 2011). Similar to practice in the field, coursework and content on the service and support of special populations of students is presented in teacher preparation programs in a reactionary, fragmented, isolated manner with little or no connection to in-service practice. Thus, teacher candidates are not afforded the opportunity to implement and refine the skill sets that they will undoubtedly need. Scholars and stakeholders within teacher education programs in the United States have responded to this concern with reforms that place a greater emphasis on integration amongst specialty fields to create a catalyst for this needed change.

A superficial introduction to educating and supporting ELs and SWDs has the potential to be harmful, as it would not facilitate an understanding of the complexities of what is needed to provide equitable educational experiences to ELs and SWDs; additionally, the misconception that limited language ability is symptomatic of limited cognitive ability results in the misclassification of ELs as SWDs (Artiles & Ortiz, 2002). Fully integrated specialty programs would ensure that teacher candidates are being exposed to foundational knowledge, theory, and practice through a strategic course of study. In contrast to common practice, which is supplementary content on supporting ELs and SWDs in general education courses, integrated specialty coursework would center on the development of the necessary knowledge, skills, and dispositions to equitably serve diverse student populations. Thus, an integrated approach to teacher education would require faculty members to work outside of the traditional specialty silos and within new co-constructed spaces that represent the multiple student diversities that are reflected in K−12 classrooms. The research questions framing this study are:

1. What was the effect of teacher candidates' overall knowledge acquisition as measured by the ESL, bilingual, Bilingual Target Language Proficiency Test, and special education certification exams after the implementation of the Special Populations courses?

2. What effect did the Special Populations courses have on teacher candidates' domain-specific knowledge acquisition as measured by the ESL, bilingual, Bilingual Target Language Proficiency Test, and Special Education certification exams?

Purpose of the Study

The purpose of this quantitative study was to examine the effects of knowledge acquisition as measured by certification exams of teacher candidates enrolled in newly developed multispecialty ESL/bilingual and special education teacher preparation courses.

Culturally Responsive Educational Systems: A Conceptual Framework

Background of the Conceptual Framework

When outdated educational programs, curricula, and strategies fail to account for the diversity that exists amongst culturally, linguistically, and cognitively diverse populations, the common and convenient scapegoats are students, who often exist without a voice (Delpit, 2012). Standardized tactics are incapable of reforming the complex issues of inequity that permeate the foundation of the U.S. educational system, and thus integrated approaches that center on historically marginalized student populations are necessary (Paris & Alim, 2017). Programmatic evolution, and ultimately systemic change, toward one of a more collaborative nature, is a necessary step toward addressing the issues of equity in education. Ladson-Billings (2009) proposed that "no single course or set of field experiences is capable of preparing preservice students to meet the needs of diverse learners; rather, a more systemic, comprehensive approach is needed" (p. 463). The system of education must be transformed to be as diverse as the student populations that it serves. Culturally Responsive Educational Systems is a conceptual framework that delineates reforms needed to overhaul the system of education by enacting change and development in the three critical areas of policy, practice, and people. Founded on the theoretical tenets of critical race theory, Latinx critical theory, and culturally relevant/culturally responsive scholarship, this framework examines reform across educational policy, practice, and people to "promote the creation of conditions, produce resources and tools, and support multiple stakeholders in the creations of educational systems that are responsive to cultural diversity" (Klingner et al., 2005, p. 8).

Theoretical Roots

Rooted in effective teaching practices and the theoretical framework of multicultural education, culturally responsive pedagogy (CRP) is an approach to teaching that "uses student culture in order to maintain it and transcend the negative effects of the dominant culture" (Ladson-Billings, 2009, p. 18). It is important to note that *cultural relevance* encompasses not just language and ethnicity, but all aspects of "student and school culture" (Ladson-Billings, 2009, p. 18). Unlike superficial approaches that focus on program and strategy implementation, CRP pedagogy focuses on the development of the educator as a culturally relevant practitioner through the process of critical inquiry and thus adopting the following three propositions and skillsets: 1) all students must experience academic success, 2) students must develop and/or maintain cultural competence, and 3) students must develop a critical consciousness through which they challenge the status quo of the current social order (Gay, 2014; Ladson-Billings, 1995; Shoffner & Brown, 2010; Ware, 2006). To develop as culturally relevant practitioners, teacher candidates must be afforded the opportunity to do the following in their teacher preparation programs: 1) acquire a knowledge base,

2) participate in transformative dialogue about educational practices, and 3) participate in self-analysis (Ladson-Billings, 1995).

It is more apparent than ever that the cultural, linguistic, and cognitive diversity in U.S. classrooms requires practitioners who are trained in a culturally relevant manner, and thus the Culturally Responsive Educational Systems framework was designed to provide not only the training necessary but also the follow-up support and spaces to continue development as a culturally relevant practitioner, as one tenet of CRP is to have a continuously developing state of being. Individualized reform cannot thrive and thus this framework supports the notion that "educational systems require changes in fundamental assumptions, practices, and relationships within schools' systems and the outside world" (Klingner et al., 2005, p. 9). See Table 1 for a full description.

Table 1

Culturally Responsive Educational Systems

	Federal- & State-Level Policies	**Eligibility for Classification, Resource Allocation, Accountability Measures, Certification/Licensure**
Culturally Responsive Policies	District-Level Policies	e.g., University partnerships, data, professional development, personnel, resource allocation, programs
	School-Level Policies	e.g., Hiring, implementation, and fidelity of programs
Culturally Responsive Practices	Teacher Education	e.g., Integration of multiple specialty fields including special education, bilingual education, multicultural education, support beyond teacher education, field-based experiences
	Professional Development that Supports CRT	e.g., Experience-based learning opportunities within localized communities of practice within a supportive system of change
	Culturally Responsive Evidence-Based Instructional Practices	e.g., Culturally responsive behavior supports, culturally responsive literacy instruction
	Culturally Responsive Early Intervention	e.g., Early intervention appropriate for the student population and supported by instruction
People	Culturally Responsive School Leaders	e.g., Must be knowledgeable about the system of education, supporting and cultivating faculty, and the referral process
	Culturally Responsive Teachers	e.g., Appropriate culturally relevant dispositions, responsibility for students, commitment to growth, "cultural organizers in a social context"
	Families & Communities	e.g., Embedded within schools, involved in assessment, professional development for school faculty
	Students	e.g., Additive approach to language, culture, and ability

Note. Reprinted from "Addressing the Disproportionate Representation of Culturally and Linguistically Diverse Students in Special Education Through Culturally Responsive Educational Systems" by J. K. Klingner, A. J. Artiles, E. Kozleski, B. Harry, S. Zion, W. Tate, G. Z. Durán, & D. Riley, 2005, *Education Policy Analysis Archives, 13*(38), (https://doi.org/10.14507/epaa.v13n38.2005).

Components Relevant to Study

As demonstrated by the current data, educators must possess a diverse pedagogical and content knowledge base necessary to support their culturally, linguistically, and cognitively diverse students, who have been historically oppressed by a standardized system (Blanton et al., 2011). Thus, the integration of the Special Populations courses was guided by one of the core tenants of culturally responsive teaching, which says that the educator, the curriculum integration/redesign, and the classroom should be centered on the students themselves. Teacher education is the entry into the field of U.S. public education, as an initial teaching certification is necessary to then pursue careers in administration, leadership, or research in higher education. Thus, the teacher preparation program is addressed in each of the three domains of the Culturally Responsive Educational Systems framework. The first domain of the framework, Culturally Responsive Policies, addresses the construction of policies and reforms needed at the federal, district, and school levels, particularly the consideration of a policy's intent versus the effect it has during implementation. Policy concerning teacher preparation programs is specifically addressed by the authors with the suggestion that "All states should review their teacher certification/licensure requirements to make sure they include standards specific to teaching culturally and linguistically diverse students" (Klingner et al., 2005, p. 12).

The second domain, Practices, describes the intentional practices within the field that must be enacted to implement the culturally relevant policies fully and effectively. Thus, the domain comprises four areas: teacher education, professional development that promotes culturally relevant teaching, culturally relevant evidence-based instructional practices, and culturally relevant early intervention (practices were identified as key to facilitating systemic change). Reform in teacher education programs must allow them to evolve from the current siloed, generalist approach and intentionally focus on preparing teacher candidates with the knowledge and skills necessary to teach culturally, linguistically, and cognitively diverse students. Blanton and Pugach (2007, 2011) described the two common typologies of collaborative teacher preparation specialty programs as "*merged programs,* single fully combined curriculum and *integrated programs,* a redesign in general education preservice curriculum but only those who are expressly interested in seeking special education licensure continue on" (p. 255). Transformations in teacher education would then mean "partner schools have the potential to ground the next generations of practitioners in CR teaching and learning, and in doing so transform the one size fits all approach to teaching" (Klingner et al., 2005, p. 13). Using this component of the framework, this project explored the impact of enacting a fully integrated model of a teacher education program.

Last, the third domain, People, includes "all those in broad educational systems, administrators, teacher educators, teachers, community members, families, and the children" (Klingner et al., 2005, p. 10). Each domain is interrelated: Change in teacher preparation and education would substantially affect *policy* interpretation, development, and enactment; the *practices* within the field; and thus the *people* within the system.

Specialty certification exams that are created and validated by educational specialists, such as the ESL and special education tests utilized as data sources in our study, reflect the foundational knowledge and skills required to teach and support diverse student populations, which are organized by domain and, more specifically, competency. Additionally, when certification exams are utilized as a summative assessment within teacher education programs they can also indicate the overall knowledge acquisition of the teacher candidates completing the program. Thus, results on certification exams were utilized as the primary data source for this study, as they represent

teacher candidates' knowledge and skills after completing a redesigned, integrated teacher preparation program. As teacher preparation is the gateway to education, this study aimed to illustrate how rethinking teacher preparation toward a more integrated effort would in essence move the entire field of education closer to a model that prepares, inducts, and mentors teachers in a way that promotes the acquisition of the necessary knowledge, skills, and dispositions needed to successfully serve culturally, linguistically, and cognitively diverse students in an equitable manner (Murrell & Foster, 2003). Initially preparing teachers in a culturally responsive manner would equip them with this necessary lens as they matriculate through their education to the various places that impact and guide the policies, practices, and people in education. For lasting educational change to occur, efforts must move beyond "how to 'fix' culturally and linguistically diverse students' deficits, professionals' biases, or society as a whole but attempt to build an entire system that initiates and sustains change through multi-leveled supports" (Klingner et al., 2005, p. 8).

Empirical Literature Review

Despite advances in research on the misclassification of ELs and SWDs, which originate from a lack of full understanding of the needs of students, the disciplinary focus has been primarily in the field of special education, with some consideration from the fields of school psychology, sociology, and psychology (Waitoller et al., 2010). Whether originating from discriminatory beliefs or from a lack of understanding of the development of a second language, misclassification when language is involved is a civil rights issue (Artiles et al., 2006). Disproportionality is representative of an issue within the entire educational system and, thus, various stakeholders across the field of education and within levels of policy and practice must construct the solution. A comprehensive review of the literature on overrepresentation in special education by Waitoller et al. (2010) found that

> This research has been published mostly in special education journals. [However,] it is interesting that this research has targeted this audience, considering that many of the reviewed studies show over-representation is associated with forces related to institutional and professional factors that transcend the field of special education. The study of over-representation must involve the integration of other disciplines and theoretical frameworks (p. 41).

Educational research and training in the specialty fields of education have historically remained siloed, and thus "the intersections of English language learners and special education are little understood" (Artiles et al., 2002, p. 118). This new mindset toward an integrated approach, however, will require a departure from business as usual and calls on teacher educators and researchers to work interdepartmentally and interdisciplinarily. Shippen et al. (2005) explored current teacher-preparation programs and their failure to address perceived problems of collaboration in inclusive education, concluding that training in general education and multispecialty areas could produce a new generation of teachers who are more willing and better prepared to support diverse and exceptional student populations. To best serve students with complex needs, educators must be prepared with a complex set of skills.

To establish and promote equitable learning opportunities for ELs and SWDs in this era of rigorous standards and increased accountability, it is critical for teacher candidates to have the knowledge and skills required to provide individualized, specially designed, and responsive instruction with appropriate support within a decision-making framework. Teacher preparation programs have historically focused on aligning instruction with academic goals and objectives based on content standards, increasing student engagement, modeling and scaffolding instruction,

and highlighting critical information (Fuchs et al., 2014). Thus, teaching has long been characterized by undifferentiated, whole group instruction that may not meet the needs of all learners (Barrio et al., 2015; Bucalos & Lingo, 2005). A key recommendation for providers of teacher education from Blanton et al. (2011; published by the American Association of Colleges for Teacher Education and the National Center for Learning Disabilities) is the policy brief *Preparing General Education Teachers to Improve Outcomes for Students with Disabilities*. The brief states that programs should "support the development of innovative preparation programs that bring together teacher educators in the curriculum areas, multicultural education, bilingual education, teaching English learners and special education as active working teams" (p. 8). In order to do so, Pugach and Blanton (2012) suggest that as multispecialty programs are developed researchers and faculty work toward evolving from the supplementary approaches that only add specialty topics to existing generalist coursework to create truly integrated models.

While there is an extensive body of research to support that teacher preparation programs need to have a high level of content area and pedagogical knowledge, there is limited research examining the effect of specialized coursework on teacher candidates' comprehensive knowledge acquisition as measured by licensure exams (Howard et al., 2018). Limited research in this area may also be a result of only a few states offering a multispecialty certification within teacher preparation programs (Cochran-Smith et al, 2015; Plotner et al., 2022). Research on the effect that teacher preparation courses have on teacher candidates' domain-specific knowledge acquisition is also very limited. Although research on additive models is most commonly the topic of research studies, to support the evolution of the field, research is also needed on the overall effectiveness of programs that "address more fully how to situate content related to disability within multiple, intersecting diversity communities" (Pugach & Blanton, 2012, p. 265). Cochran-Smith et al. (2015) determined that most teacher preparation programs provide a curriculum that is aligned to teaching standards but there is not currently a body of research that has examined the impact of coursework and field experiences on teacher candidates' domain-specific knowledge. Empirical studies on the integration of specialty content focus primarily on single courses or assignments and thus literature on transforming an entire teacher education program is limited to decontextualized recommendations. Our research helps fill these gaps within the existing literature by identifying the effectiveness of teacher preparation coursework targeting both comprehensive knowledge and domain-specific knowledge acquisition. Further, our research provides evidence of standards and domain-focused instruction that can support a standardized credentialing process for ESL, bilingual, and special education. Ensuring that practitioners are entering the field ready to eradicate inequitable practices is advocacy in practice that contributes to the ultimate goal: educational revolution.

Methodology

Context of the Study

This traditional teacher preparation program, with an emphasis on serving special populations is housed in the College of Education of a Carnegie Tier One research university in the southwestern United States. To earn a bachelor of science degree in multidisciplinary studies and generalist teaching certification, teacher candidates 1) take credit hours toward their initial specialization, 2) take 18 credit hours of Special Populations courses, 3) complete one full academic year of full-time field placement, 4) successfully complete state content and pedagogical certification exams, and 5) successfully complete supplementary certification exams for specialty areas of choice. The Special Populations courses launched during the 2018–2019 academic year and replaced two specialty programs that focused on either ESL/bilingual education or special

education. The teacher preparation program is unique in that it offers courses both face-to-face and online, and thus, teacher candidates are in 23 different urban and rural districts across the state. To the best of the authors' knowledge, this institution is the only one in the United States that offers courses in teacher preparation for multispecialty certification. Therefore, the context of this study provided the researchers with the opportunity to study the effects of multispecialty courses for certification.

Participants

To examine the effects of the Special Populations courses on the certification exams, the participants in this study included all teacher candidates who completed the teacher preparation program before and after the Special Populations course implementation. Based on information from the certification exam records for the 2017–2018 and 2018–2019 academic years, the participants were female and male teacher candidates, ranging in age from 18 to 50 years old. The number of teacher candidates that take the certification exams varies each year and is dependent on enrollment. Most of the teacher candidates identified as Hispanic/Latino or White. Table 2 provides demographic information for teacher candidates' that took the ESL, bilingual, Bilingual Target Language Proficiency Test (BTLPT), and special education certification exams.

Table 2

Teacher Candidate Demographics by Certification Exam

	Total	Black/African American	Hispanic/Latino	White	Other
ESL					
2017–2018	41	6	15	18	2
2018–2019	106	2	33	68	3
Bilingual					
2017–2018	44		43	1	
2018–2019	41		41		
BTLPT					
2017–2018	42		40	2	
2018–2019	41		41		
Special Education					
2017–2018	17	1	6	9	
2018–2019	42	1	12	29	

Special Populations Courses

The program is headed by two former K–12 educators with Ph.Ds. in their respective specialty fields. They worked together to develop eight multispecialty courses integrating content from the ESL, bilingual, and special education fields. This innovative unparallel course design for teacher preparation was established to meet the dynamic needs of partner districts across the state. To fully integrate all essential knowledge from the five certification exams, course content and assignments

were aligned to the certification exam domains. Table 3 provides an explanation of each domain and the corresponding certification exam. Table 4 indicates the certification exam domains covered in each course.

Table 3

Certification Exams and Corresponding Domains

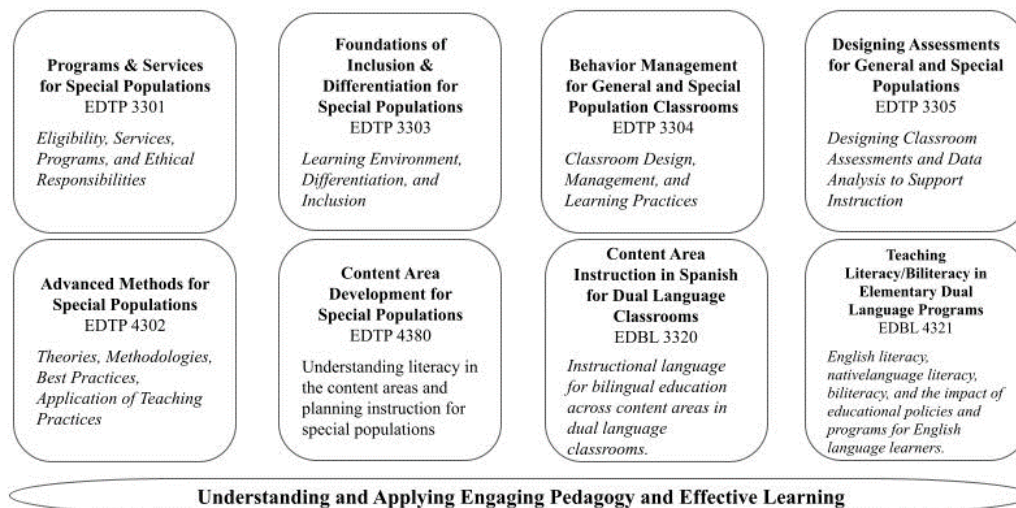| Domain	Domain Description	Approximate Percentage of Test
ESL Certification Exam (154 ESL Supplemental TExES)		
I	Language Concepts and Language Acquisition The Structure of English First and Second Language Acquisition	25%
II	ESL Instruction and Assessment Standards-Based ESL Instruction Communicative Competence Achievement Across the Curriculum ELs and Assessment	45%
III	Foundations of ESL Education, Cultural Awareness and Family and Community Involvement History of ESL Student Diversity and Identity Partnering With Families	30%
Bilingual Certification Exam (164 Bilingual Education Supplemental TExES)		
I	Bilingual Education The Structure of English First and Second Language Acquisition History of Bilingual Education Promotes Diversity Across the Curriculum	100%
BTLPT Certification Exam (190 Bilingual Target Language Proficiency Test TExES)		
I	Listening Comprehension The Teacher Is Able to Derive Essential Information, Interpret Meaning, and Evaluate Oral Communications in the Target Language	21%
II	Reading Comprehension The Teacher Is Able to Derive Essential Information, Interpret Meaning, and Evaluate a Variety of Authentic Materials Written in the Target Language	26%
III	Oral Expression The Teacher Is Able to Construct Effective Interpersonal and Presentational Oral Discourse in the Target Language	29%
IV	Written Expression The Teacher Is Able to Write Effective Interpersonal and Presentational Discourse in the Target Language	24%
Special Education Certification Exam (161 Special Education EC-12 TExES)		
I	Understanding Individuals With Disabilities and Evaluating Their Needs Understands Different Types of Disabilities and Informal and Formal Assessment	13%
II	Promoting Student Learning and Development Applies and Understands Procedures Involved in Planning for Instruction	33%
III	Promoting Student Achievement in English Language Arts and Reading and in Mathematics Knows How to Plan and Provide Instruction in Content Areas	33%
IV	Foundations and Professional Roles and Responsibilities History of Special Education Fosters Respectful Relationships Between Families Effectively Communicates With Parents, Teachers, and Administrators	20%

Table 4

Certification Exam Domain Distribution by EDTP Course

Required Certification Exam	EDTP 3301	EDTP 3303	EDTP 3304	EDTP 3305	EDTP 4302	EDTP 4380	EDBL 3320	EDBL 4321
ESL Supplemental (attaches to level of base certificate): 154 ESL Supplemental TExES (3 Domains)	III	II	III	II	II	I II		
Bilingual Education Supplemental: Spanish (attaches to level of base certificate): 164 Bilingual Education Supplemental TExES (1 Domain)	I	I	I	I	I	I		
Bilingual Target Language Proficiency Test (BTLPT): 190 Spanish TExES (4 Domains)							I II III IV	I II III IV
Special Education: Early Childhood-Grade 12: 161 Special Education EC-12 TExES (4 Domains)	IV	I III	II	I	II	II		

The local education agency requires every person seeking educator certification to pass the compressive certification exams. The certification exams evaluate prospective educators' readiness to teach in public schools and measure their content knowledge and pedagogical knowledge. Additionally, the Special Population multispecialty courses are rooted in culturally responsive educational systems and used as interventions for the study. Each domain of the conceptual framework was strategically embedded into the multispecialty courses and the teacher preparation program. For instance, the first domain, Culturally Responsive Policies, was addressed by creating unique university partnerships that provide teacher candidates with opportunities to complete student teaching in diverse urban and rural settings. The second domain, Practices, is the actual implementation and integration of multiple specialty courses. The third domain, People, relates to the vital role of stakeholders in the community. This specific domain is addressed in the multispecialty courses by providing opportunities through assignments for teacher candidates to work directly with all stakeholders, who include school leaders, parents, teachers, and students.

The Special Populations courses were sequenced to gradually build on teacher candidates' knowledge. For consistency, each course is organized into four modules and each module has four topics using the same learning management system. Course designers included clear learning objectives at the beginning of each module aligned to the state certification. To facilitate learning and explain content, most topics include PowerPoint voiceovers and videos related to the required weekly readings. See the full description of each course in Figure 1.

Figure 1

Special Population Courses

Programs & Services for Special Populations EDTP 3301 *Eligibility, Services, Programs, and Ethical Responsibilities*	**Foundations of Inclusion & Differentiation for Special Populations** EDTP 3303 *Learning Environment, Differentiation, and Inclusion*	**Behavior Management for General and Special Population Classrooms** EDTP 3304 *Classroom Design, Management, and Learning Practices*	**Designing Assessments for General and Special Populations** EDTP 3305 *Designing Classroom Assessments and Data Analysis to Support Instruction*
Advanced Methods for Special Populations EDTP 4302 *Theories, Methodologies, Best Practices, Application of Teaching Practices*	**Content Area Development for Special Populations** EDTP 4380 Understanding literacy in the content areas and planning instruction for special populations	**Content Area Instruction in Spanish for Dual Language Classrooms** EDBL 3320 *Instructional language for bilingual education across content areas in dual language classrooms.*	**Teaching Literacy/Biliteracy in Elementary Dual Language Programs** EDBL 4321 *English literacy, nativelanguage literacy, biliteracy, and the impact of educational policies and programs for English language learners.*

Understanding and Applying Engaging Pedagogy and Effective Learning

Note. There are six required Special Population courses within the Educational Teacher Preparation (EDTP) degree plan. Two additional courses, EDBL 3320 and EDBL 4321 are required for teacher candidates seeking certification in Bilingual Education.

Assignments in each course were designed strategically to 1) ask teacher candidates to record their own comprehension of the content in a structured format, 2) facilitate connections between the courses and the field, 3) present research-based strategies that could be implemented in field placements, practice, and application of theory, and 4) improve academic Spanish proficiency within the context of K–12 education (only in courses focused on teaching in dual-language classrooms taken by bilingual specialty students). Based on recommendations from leading scholars in bilingual education, the two bilingual courses utilized the same assignment structure but were focused on enhancing academic Spanish proficiency in all four language domains within the context of teacher preparation (Guerrero, 2003, 2009; Guerrero & Valadez, 2011).

Each week teacher candidates complete a multiple-choice quiz and a written or oral assignment aligned to the required state domains. Written and oral assignments are structured using the same format for the eight courses and include detailed rubrics. For example, each assignment includes a section titled "Course to Field Connection" that explains how the assignment connects to the field. Course assignments also include a section titled "Certification Exams." This section of the assignment includes the state-mandated competencies for the ESL, bilingual education, and special education certification exams. It was designed purposefully to support teacher candidates when they begin to study for the certification exams.

To reinforce the knowledge and skills acquired, each module includes a final cumulative assignment. The end-of-module assignment varies in each course; however, the assignments provide teacher candidates the ability to further connect their knowledge to the field. For example, some end-of-module assignments provide an opportunity for teacher candidates to video record themselves teaching a newly acquired pedagogical strategy to ELs and/or SWDs. Other end-of-module assignments include case studies and video analysis, which require the teacher candidates to have a conceptual understanding of theories and the ability to connect their knowledge to the classroom.

Data Sources

The certification exams are criterion-referenced examinations designed to measure a candidate's knowledge in relation to an established standard of competence (a criterion) rather than in relation to the performance of other candidates. All the exams contain selected-response questions. Some exams also include constructed-response questions (e.g., essay or oral responses). For example, the BTLPT assesses bilingual teacher candidates' Spanish proficiency in the four language domains (reading, writing, listening, and speaking) using a combination of multiple-choice questions and both written and oral responses. Rubrics are used by exam evaluators, who are typically in-service bilingual veteran teachers trained to grade the BTLPT. State certification exams go through a prolonged process of validity and reliability; therefore, the researchers determined the certification exams were relevant data to measure the acquisition of knowledge obtained from the multispecialty Special Populations courses. Furthermore, while it is highly important to prepare teacher candidates to teach in a culturally responsive manner, if teacher candidates do not pass the state-mandated certification exams, it becomes nearly impossible to find a teaching position after graduation; therefore, the researchers also emphasized domain-based curriculum design.

Finally, the certification exams examine teacher candidates' content and pedagogical knowledge related to special populations. For instance, the ESL and bilingual certification exams include several multiple-choice questions that target advocacy and policy for special populations. This relates to the People domain in the conceptual framework utilized for this study. To address the questions in this study, we analyzed two years of ESL, bilingual, BTLPT, and special education certification exam results from teacher candidates enrolled in the teacher preparation program.

Data Analysis

The conceptual framework used for this study details the importance of specialty integration; therefore, it was important to examine the impact multispecialty Special Population courses had on the overall results of teacher certification exams. To answer our first research question regarding teacher candidates' comprehensive knowledge as measured by the ESL, bilingual, BTLPT, and special education certification exams we used descriptive statistics. First, we gathered certification exam results for the ESL, bilingual, and BTLPT for 2017–2019. Data was coded based on the overall results of each certification exam to highlight the effects of course integration. We calculated the mean of teacher candidates who passed each certification exam during the 2017–2018 academic year and compared the mean to the 2018–2019 academic year. To answer our second question, we compared the mean for each domain in 2017–2018 to the mean for each domain in 2018–2019 after the implementation of the Special Populations courses. This 2-year span of results allowed us to compare data after Special Population course implementation. Additionally, we considered the state passing rates for certification exams, given that other teacher preparation programs in these states were not implementing a multispecialty curriculum approach.

Findings

Descriptive Results for Research Question 1: Difference in Certification Results after Program Implementation

Results from the ESL, bilingual, and special education exams indicate the passing rate remained mostly the same during the first implementation of the Special Populations courses. These results are important because knowledge obtained from the multispecialty course curriculum

did not have a negative impact on teacher candidates' comprehensive knowledge as measured by certification exams. The content in the multispecialty Special Populations courses is not taught in other teacher preparation courses; therefore, results from the certification exams can largely be attributed to multispecialty course implementation.

Table 5 provides a full summary of certification exam results for two academic years. For the ESL exam, there was a 2% difference after the implementation of the Special Populations courses; however, local and state had the same passing rate. Results from the bilingual certification exam indicate the passing rate stayed the same after the implementation of the courses and the passing rate was above the states' during the 2018–2019 academic year. The third column indicates there was a 5% difference in the BTLPT passing rate after the new courses were implemented. In this case, the state passing rate was 6% above the local passing rate for the BTLPT. Results for the special education certification exam after the courses were implemented indicate a 1% decrease. The state certification exam results for the special education exam were 2% higher than the local passing rate.

The BTLPT certification exam saw the biggest percentage decrease after the implementation of the Special Populations courses. This 5% decrease could be attributed to several factors. First, the faculty member who had traditionally taught one of the Spanish bilingual courses was on medical leave. Furthermore, during the 2018–2019 academic year, the state utilized a different testing company.

Table 5

Certification Local and State Exam Results

Certification Exam	2017–2018	2018–2019
ESL Local	98%	96%
ESL State	97%	96%
Bilingual Local	98%	98%
Bilingual State	96%	91%
BTLPT Local	90%	85%
BTLPT State	91%	91%
Special Education Local	94%	93%
Special Education State	94%	95%

Descriptive Results for Research Question 2: Difference in Certification Domain Results after Program Implementation

Domain specific results from the ESL, bilingual, BTLPT, and special education exams indicate most teacher candidates met expectations. Domain knowledge acquisition can mostly be attributed to multispecialty courses because the certification exam domain content is specific to the special populations' multispecialty courses and is not covered in other teacher preparation courses in the teacher preparation program.

Table 6 presents a summary of results for each domain in the ESL, bilingual, BTLPT, and special education certification exams during two academic years. Domain III in the ESL exam assesses the foundations of ESL education, cultural awareness, and family and community development. After the Special Populations courses were implemented, there was a 1.8% decrease

in the ESL certification exam Domain III. The bilingual certification exam has one domain and results indicate a 1.8% increase after the courses were implemented.

Three of the four domains in the BTLPT indicate a slight decrease after the implementation of the courses. In the special education certification exam, Domain I assesses the teacher candidate's knowledge of disabilities, both formal and informal assessment. Results from Domain I for the special education certification exam indicate a 6% increase. Results from Domain IV indicate a 4.4% decrease in knowledge acquisition of the history of special education; fostering respectful relationships between families; and knowing how to communicate effectively with parents, teachers, and administrators.

Table 6

Certification Exam Domain Results

		2017–2018	**2018–2019**
ESL	Domain I	68.4%	68.9%
	Domain II	74.6%	73.3%
	Domain III	72.6%	74.4%
Bilingual	Domain I	73.2%	75%
BTLPT	Domain I	83.3%	80.8%
	Domain II	74.6%	73.6%
	Domain III	73.4%	74.8%
	Domain IV	69.4%	67.5%
Special Education	Domain I	74.8%	80.8%
	Domain II	74.1%	73.6%
	Domain III	76.3%	74.8%
	Domain IV	71.9%	67.5%

Limitations

This current research study focused on knowledge acquisition acquired by teacher candidates in a multispecialty program as measured by certification exams. This study presents several limitations, and to our knowledge, this is the only multispecialty teacher preparation program so there is a lack of prior research on the topic. Additionally, while there is a need for teachers to be prepared to teach all students, not all states allow multispecialty certification. This makes it difficult for other teacher preparation programs to implement a multispecialty certification program at the undergraduate level. Yet another limitation to this study is that faculty are typically siloed, consequently limiting their ability to develop and design multispecialty courses. Finally, this study focused on certification results, thereby excluding several other factors that may contribute to teacher candidates' knowledge acquisition of special populations such as field placement, other courses taken in teacher preparation, and mentor teachers.

Discussion

This research study examined two questions. The first question examined if there was a difference in certification exam results after multispecialty course implementation. The findings in this study indicated there was a minimal difference in teacher candidates' knowledge acquisition after multispecialty course implementation. These findings contribute to the limited body of literature on teacher preparation for multi-specialty curricula and stand as a testament to the fact that teacher education can be reimagined without a negative impact on content attainment as measured by certification exams. These courses pushed teacher candidates to think in new ways, created the space and support for this thinking, and resulted in sustained levels of knowledge acquisition in multiple specialty fields; however, the multispecialty knowledge was attained by all teacher candidates rather than just one specialized focus. The Special Populations courses are a result of a shared philosophy and vision for a program that prepares teachers with the complex, interdisciplinary knowledge, skills, and dispositions they will need to be the teachers today's students need; the "rethinking of context" called for by Klingner et al. (2005) in action. Although the initial certification exam results seem promising, longitudinal data is needed on the impact of multispecialty certification.

The second question examined if there was a difference in the certification exams domain results after program implementation. The difference in domain knowledge acquisition was minimal after program implementation as measured by certification exams. Although certification exam results were favorable before and after the implementation of the Special Populations courses, assignment redesign should be ongoing to improve knowledge acquisition at the domain and competency levels. For example, the domains related to history showed a slight decrease in knowledge attainment as measured by the ESL and special education certification exams. Further analysis is needed to determine what changes the courses will require to improve historical knowledge related to special populations.

Finally, with over five million ELs and seven million SWDs receiving services in the United States (NCES, 2016, 2019), we need a systematic revolution that requires a change in mindset from all stakeholders who are directly and indirectly involved in the preparation of teacher candidates. The misconception that including appropriate special education content into ESL/bilingual programs will result in increased inappropriate recommendations must be abandoned if researchers and teacher educators are to ever move beyond their fear and build a new system of education. It is time to move toward a new generation of teachers who are prepared to support diverse student populations (Shippen et al., 2005).

Conclusion and Implications

While the results of this study indicate a minimal difference in teacher candidates' overall and domain-specific knowledge acquisition after completing the multispecialty coursework, the certification exam results continued to be favorable. These findings propose that the Special Populations courses are beneficial in preparing teacher candidates for a multispecialty certification and help identify potential areas of revision such as content additions and assignment adjustments within the Special Populations course sequence to improve overall knowledge acquisition at the domain and competency levels.

This study contributes to the limited body of literature on teacher preparation for multispecialty curricula and supports the creation of coursework that focuses on the complex, interdisciplinary knowledge, skills, and dispositions identified in the research that teacher candidates will need to serve current and future diverse K–12 classroom populations. Our findings coupled with research

in the development, implementation, and outcomes of multispecialty programs will provide policymakers and program developers with data to support the integration of content to create multispecialty certification programs. As suggested by Klingner et al. (2005), "all states should review their teacher certification/licensure requirement preparation programs indicating they are addressing diversity in significant ways" (p. 12). Implications from our research also will inform teacher certification/licensure policy reform to include changes in teacher preparation programs, as they play a key role in accreditation standards and requirements. Finally, our findings will support culturally responsive educational systems that are receptive to cultural diversity through the creation of multispecialty certification programs (Klingner et al., 2005).

Teacher education is incredibly complex. Consequently, ESL, bilingual, and special education research communities need sufficient support from policymakers and program developers to address these complexities and to establish a professional knowledge base in teacher education that will both rival the current teacher preparation literature for students identified as ELs and SWDs and move it outside of the traditional silo that continues to separate general and specialized education. Our research exposes the misconception that integrating special education, ESL, and bilingual education content will result in increased inappropriate recommendations for classroom practices. It is our hope that policymakers and teacher preparation program developers will use these results to begin the process of co-constructing integrated teacher education programs that include pathways to multispecialty certification.

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