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Expanding the Pipeline for Latino Bilingual Teachers: A Mixed Methods Study

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EXPANDING THE PIPELINE FOR LATINO BILINGUAL TEACHERS:

A MIXED METHODS STUDY

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2013

Dedication

A mis hijos, José, Elizabeth, y Angélica, con todo mi amor.

EXPANDING THE PIPELINE FOR LATINO BILINGUAL TEACHERS:
A MIXED METHODS STUDY

by

AMABILIA VALVERDE VALENZUELA, B.S., M.A.

DISSERTATION

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Abstract

Current education reform in the US requires teacher preparation programs to educate future teachers according to the certification standards set forth by each state. Certification for teaching in Texas requires that preservice teachers successfully complete a series of comprehensive examinations in their teaching fields and in professional knowledge before entering full-time teaching. However, researchers have argued (Gitomer, Brown, & Bonett, 2011) that the use of standardized tests often raises concerns about adverse impacts on members of minority groups, who often have lower test scores. The purpose of this research was twofold: First, to analyze factors that predict Mexican American teacher candidates' success on Texas bilingual certification examinations; and second, to develop a deeper understanding about the complex web of issues related to the experiences of bilingual Mexican American students residing on the Texas/Mexico border and preparing to become certified teachers, from the students' perspectives.

Based on the research questions, this study employed a sequential mixed methods approach, using quantitative and qualitative methodology and consisting of three phases: 1) Quantitative, 2) Qualitative, and 3) Integration of quantitative and qualitative results. The theoretical frameworks employed were: Self-efficacy theory, Critical Race Theory, Latina Critical Race Theory, and Borderland Cultural Wealth. The procedures included in this model were designed with the aim to more fully answer the research questions and develop a more robust and meaningful picture of the research problem. The mixing of both methods took place at three different stages during the research: (1) in the selection of participants for the qualitative phase; (2) in the development and refinement of interview questions; and (3) in the combined interpretation and discussion of the quantitative and qualitative findings.

The research questions guiding this study were: 1) How are GPA, SAT, THEA, and Qualifying Test scores of future Mexican American bilingual teachers correlated? 2) To what extent do these variables predict the performance of these bilingual teacher candidates on state-mandated high-stakes tests (TExES), particularly Bilingual Education Generalist (BilEd) and Pedagogy and Professional Responsibility (PPR) exam scores? 3) How do Mexican American college students attending a Hispanic-Serving Institution (HSI) on the U.S.-México border describe their experiences of navigating the pathway to becoming "highly qualified" teachers? 4) To what extent does the combination of quantitative and qualitative findings generate new knowledge and lead to new insights about the bilingual teacher certification process for Mexican Americans?

The first phase of the study consisted of the analysis of secondary archived data. The variables of interest were SAT verbal scores, SAT Math scores, THEA Reading scores, final GPA, TExES PPR scores, TExES Bilingual Generalist scores, and TExES BTLPT scores. Correlation and multiple regression tests were conducted. The three multiple regression models tested for each one of the TExES exams were statistically significant, with SAT verbal being the strongest predictor of TExES test performance. The second phase involved the collection and analysis of qualitative data. The qualitative design employed a multiple case study approach. Six participants were selected through purposive sampling, attempting to match some of the characteristics in the quantitative phase such as gender, age, and passing rates on the TExES exams. Data collection consisted of semi-structured interviews, field notes, observations, and reflection journals. Collected data were analyzed utilizing grounded theory strategies. Four themes emerged from the quantitative data analysis: Persistence/Resilience, Biliteracy as an Asset, Collaborative Learning, and Supportive Systems. The final phase focused on the

integration of the quantitative results and qualitative findings. Based on this mixing of results, meta-inferences were reached, resulting in a model highlighting the significance of verbal skills and biliteracy on TExES bilingual exam performance. Finally, limitations, implications, and recommendations are discussed.

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Chapter 1

Introduction

Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among... racial or religious groups. (Universal Declaration of Human Rights, 1948, Article 26)

Education can be the key to a better quality of life, and many suggest that it is appropriate and, indeed, expected that institutions and individuals strive toward achieving educational equality for all students, especially for Latino immigrant populations that face high poverty rates and few other opportunities for social mobility (Fisher, 2011).

While public schools in the United States purport to be democratic institutions where all students have the same opportunities to acquire enough social and cultural capital to allow them to attend any postsecondary institution of their choice, in reality not all schools are created equal (Loza, 2003, p. 47).

With 50.7 million Latinos in the United States, they are the largest minority group (Motel & Patten, 2012) but have some of the lowest educational attainment levels (Gándara, 2010).

Between 1989 and 2009, the percentage of public school students who self-identified as White decreased from 68% to 55%, and the percentage of Latinos doubled from 11% to 22% (National Center for Education Statistics [NCES], 2011). Latinos are also one of the youngest demographics in the US, with 12.4 million enrolled in K-12 schools; one out of five students is Latino (Koebler, 2011).

According to Trueba (2004), no other international event has affected schools more profoundly than the immigration and transnational phenomena. Immigrant children and the children of immigrants comprise the new majority in many urban school districts in the United

States (Orellana, 2001). Fifteen million or 20% of school children in the United States have immigrant parents (Jiménez, Smith, & Teague, 2009). Based on these statistics, there is no doubt that educators must develop skills in cross-cultural understanding and communication to create effective nurturing, learning environments (Rong & Preissle, 2009).

Children of immigrant families are at risk of becoming educationally underserved, being socially neglected, and being identified as problematic (Arzubiaga, Nogueron, & Sullivan, 2009). It is alarming that the educational system in the U.S. has consistently failed to adequately prepare the children of immigrants. González, Moll, and Amanti (2005) explain this failure as a “deficiency model of minority groups where it is assumed that these students lack comprehension skills and substitute it with a learning model that is noncontextual, piecemeal, and hierarchical” (p.48). This historical “debt” is exemplified by the multiple studies showing the achievement gaps between White and Latino students in U.S. public schools (Fine, 2005; Gándara, 2010; McNeil, Coppola, Radigan, & Heilig, 2008; Rivera & Huerta-Macias, 2008).

Almost half of all Latino students never graduate from high school and 10% of all students are English-language learners (Koebler, 2011). Moreover, “the Latino crisis is not simply the result of immigration, it is rather the result of circumstances encountered in this country” (Gándara & Contreras, 2009, p. 3). Among the different studies Gándara and Contreras (2009) cite as evidence of the higher achievement of immigrants in comparison to their native-born co-ethnic peers is one conducted by Rumberger and Larson (1998). Their findings showed that Mexican Americans in a large urban school district earned better grades and accumulated more credits than either students who were still learning English or the native-born Mexican Americans. Rumberger and Larson suggested that the bilingual students had more social capital – access to more supportive networks-than the other two groups. Gándara and Contreras (2009),

citing Rumbaut (1995), concluded that “Americanization processes, all other things being equal... may be counterproductive for educational achievement” (pp. 2-3). A key issue is the mismatch between public school classroom culture and the students’ *funds of knowledge* – knowledge of strategic importance to students’ households from which teachers can construct new knowledge to enhance learning (González, Moll, & Amanti, 2005). One of the solutions that has been proposed to effectively educate English Language Learners is hiring qualified bilingual teachers from students’ own communities (Flores, Sheets, & Clark, 2011; Gándara & Contreras, 2009; Irizarry, 2011). However, national statistics show that only about 6% of bilingual teachers are Latino (Gándara & Contreras, 2009). In the study presented here, the performance of a group of students in the Texas Bilingual certification exams is examined using multiple regression models. In addition, the perceptions and experiences of six Mexican American teacher candidates about the certification process are explored through qualitative methods and the use of a multiple case study.

This introductory chapter is divided into nine main sections: (1) statement of the problem, (2) purpose of the study, (3) significance of the study, (4) research questions, (5) assumptions, (6) delimitations, (7) limitations, (8) organization of this dissertation, and (9) definition of terms.

Statement of the Problem

Based on the high number of Latino students, particularly Mexican Americans, enrolling in U.S. public schools (Gándara & Contreras, 2009; Gaytan, 2013), it is imperative to address the academic challenges, needs and potential of this student population (Irizarry, 2011; McNeil et al, 2008; NCES, 2009) through policies informed by research and framed by theories that challenge the dominant White ideology that has left many students behind (Valenzuela, 2005).

Over the past two decades, the short supply of teachers of color in elementary and secondary public schools has drawn the attention of policymakers and educators alike (Gómez,

Rodriguez, & Agosto, 2008; Shah & Marschall, 2011; Ukpokodu, 2011; Weisman & Hansen, 2008). Gitomer, Brown, and Bonett (2011) observe that teacher demographics have stayed the same over the last decade (83% White and 75% female) while the K-12 student population continues to become more diverse. In Texas the lower percentage of Hispanic teacher candidates passing the teacher certification exams can be viewed from the perspective of the total teachers who were certified from September of 2012 to August 2013. During this time, the Texas Education Agency reported that the Hispanic teacher candidates' passing rate was 83% in comparison to 91% for African Americans, and 97% for Whites (TEA, 2013).

To address the widening cultural and ethnic gaps between teachers and their students, a variety of initiatives that aim to recruit people of color into teaching have been launched (NCATE, 2010). However, little attention has been paid to articulating a research-based rationale for increasing the diversity in the ranks of teachers (Villegas & Irvine, 2010). This gap in the professional literature renders ongoing teacher diversity efforts vulnerable given the emphasis placed in recent years on research-based evidence in making decisions regarding the proper use of limited public resources, including funding for education (Byman et al., 2009; Villegas & Irvine, 2010).

Latino students in U.S. public schools. The disproportionate academic failure of students of particular backgrounds in U.S. schools has been explained in numerous ways. For example, Nieto (2010) posits "inequality, lack of learning, and poor academic achievement are firmly linked" (p.50). She asserts that there is a prevalent assumption that students fail to learn primarily because they are unmotivated, they are genetically inferior, their families do not care, or the cultural values of their particular ethnic group are not oriented toward education. As a result of these unfounded assumptions, students and their families are frequently blamed for the

failure to learn and achieve. According to Nieto (2010), in order to promote learning and achievement, we need to examine the societal and school conditions in which education takes place. In the US, those conditions "have been consistently, systematically, and disproportionately unequal and unfair, and the major casualties have been those students who differ significantly in social class, gender, race, and ethnicity from what is considered the mainstream" (p. 51).

Racism and other forms of personal and institutional biases, including discrimination, are manifested in schools and are at the root of the history of inequality in the US (Darder, 2011; Giroux, 1998; Macedo, 2000; McLaren, 2003, Nieto, 1996, 1999, 2010; Sleeter, 2008; Sleeter & Grant, 1998; Villalpando, 2010; Zinn, 2005). Attempts to disguise overt racism and inequality are sometimes framed as equal-treatment or 'colorblind' policies. According to Nieto, "many teachers and schools do not want to acknowledge cultural or racial differences in an attempt to be colorblind" (p. 136). However, color blindness may result in policies and practices that refuse to accept differences, accepting the dominant culture as a norm. The implications derived from institutional racism in schools are reflected in the small number of Latinos who graduate from high school and from college (e.g., Trinidad Galván & González, 2010). Furthermore, Villalpando (2010) explains:

Out of 100 Latinos who begin elementary school, only 50 are likely to eventually graduate from high school, compared to 84 White males. And of these original 100 Latinos, only about nine will complete a college degree and less than one is likely to complete a doctoral degree. (p. 234).

In recent years, policies that had opened up educational opportunities to students of color in the 1970s and 1980s have been weakened due to a powerful and "federally expressed political right

that has pushed both the US and its schools in conservative directions" (Anyon, 2006, p.21). Moreover, Anyon states: "This history suggests that in order to obtain equitable policy in low-income communities, a social movement that builds economic and educational power there is required". Anyon argues that "educational research can be a pivotal activity in this process" (p. 21).

Preservice teachers, and educators in K-12 classrooms, particularly those who have had little experience with diversity (Tinajero, Munter, & Araujo, 2010) or who, as a result of being schooled in the US have internalized the hegemonic mainstream practices and values (e.g., Guerrero & Guerrero, 2009; Murillo, 2010), need to understand that nonnative English speaking students bring in a myriad of experiences which might be difficult for them to explain in a formal setting such as the classroom (González, et al., 2005). These students frequently have experience and knowledge about core subjects like mathematics and science but may not be able to express this knowledge in the "standard" or legitimate English form that some guardians of the English language prescribe (Hall, Smith, & Wicaksono, 2011, p. 26). Thus, emotional and mental barriers between students and teachers may result (Gándara & Contreras, 2009).

Researchers prove, time after time, that these students become part of the high drop-out rate in public education (Emery & Ohanian, 2004; Roessingh, 2006; Vasquez, 2007). To complicate matters, even some second-language teachers do not adequately support their second-language learners because instead of emphasizing their students' critical thinking and writing, they often focus exclusively on organization and mechanics (Valdés, 2004). This author emphatically states these teachers have not been encouraged to enter into a dialogue with English learning students as interested readers of their students' ideas.

Teacher education programs and accountability. Current education reform in the U.S. requires teacher preparation programs to educate future teachers according to the certification standards set forth by each state (Pohan & Ward, 2011). While there are a number of differences, a common element in all is that in order to become a certified teacher, it is necessary to pass licensure exams. The teaching profession, from preparation through certification, is one of the career pathways that has been heavily impacted by high-stakes testing and the focus on test scores to assess quality.

Angrist and Guryan (2007) note the negative association between teacher testing and the probability new teachers are Hispanic and state that the use of standardized tests often raises concerns about adverse impacts on members of minority groups, who often have lower test scores. Referring to college admissions, these researchers explain that lower standardized test scores by nonwhites have led some colleges to put less weight on the Scholastic Assessment Test (SAT) and the Academic College Test (ACT) for admissions and add: "Given that Hispanics have markedly lower Praxis (basic skills test) scores than non-Hispanic Whites or Blacks, it is perhaps not surprising that teacher testing has a negative impact on Hispanic representation, especially among new teachers" (p. 24).

Furthermore, a recent *Washington Post* editorial reported that the U.S. Education Department's obsession with test scores has deepened to the point that it has embarked on a study to determine which parts of clinical teacher training lead to higher average test scores among the teachers' students (Strauss, 2012). The author adds that "things have gotten so out of hand that even Robert Scott, the Republican education commissioner of Texas who is not exactly the poster child for progressive education, recently called the nation's testing obsession a 'perversion' of a quality education." (para.10).

Bilingual education teacher education programs in Texas. In recent years, Texas has seen an unprecedented increase in the numbers of alternat programs that aim to prepare teachers who will meet the prescribed standards for certificationand licensure. These programs reduce teacher preparation to smaller amounts of time, focusing on increasing teacher production using cost efficient business plans. In contrast to these programs, there are traditional certification programs, typically housed in undergraduate programs of study in colleges and universities. There are two distinctive features of traditional programs. First, certification is based on a fixed curriculum, with thorough pedagogical underpinnings, including instruction in content knowledge, and classroom experience. Secondly, traditional programs are typically supported and supervised by faculty in a higher education institution with extensive professional experience and academic credentials.

This study presented here looks specifically at the preparation of teachers in Texas in one of the traditional programs, with a focus on one Hispanic Serving Institution located on the U.S. Mexico border. Texas was the first state to establish a K-16 accountability system and Texas institutions of higher education with teacher preparation programs have been held accountable for the performance of pre-service teachers on state required certifications since 1998 (Poelzer, Zeng, & Simonsson, 2007). Given the dynamic of student population in the United States and the increasing numbers of students of Hispanic origin, especially on the U.S.-México border, the statement Villegas (2007) makes with respect to the education of minority students becomes relevant:

Preparing teachers who are responsive to the student population that schools have historically left behind is imperative. The urgency of this task is brought into sharp focus by the increasing racial/ethnic diversity of the K-12 student population. The overriding

goal of the social justice agenda in teacher education is to prepare teachers who can teach all students well, not just those traditionally well served by schools, so that, as adults, all are able to participate equitably in the economic and political life of the country (pp. 371-372).

Texas requires all pre-service teachers to successfully complete at a minimum, the basic requirements for licensure. According to the Texas Administrative Code (Title 19, Chapter §230.11), the requirements to become a certified teacher include: (a) completion of an undergraduate or graduate degree from an accredited college or university in US; (b) completion of an educator preparation through an approved educator preparation program; (c) passing scores on the Texas Examination of Educator Standards (TExES) exams for the appropriate field and grade (two or more examinations, in the student's teaching field and in professional knowledge); (d) an application for certification; and (e) a national criminal background check (TEA, 2012).

Teacher candidate performance on the TExES is a quality indicator in the Texas Accountability System for Educator Preparation and institutional accreditation ratings are based upon the success of all students as well as the success of disaggregated groups (Justice & Hardy, 2001). Generally, teacher candidates in Texas are required to complete a bachelor's degree and successfully complete at least two certification tests, the Pedagogy and Professional Responsibilities (PPR) examination and a content knowledge exam in their area of specialization. The teacher candidate specializing in bilingual education must complete each of these, and additionally must successfully complete one more test that measures Spanish language proficiency which is called the Bilingual Target Language Proficiency Test (BTLPT) in Spanish. Thus, to become a bilingual education teacher in Texas, students must pass three certification

exams in order to acquire the requisite credential and be hired as *highly qualified teachers*. In accordance with Section 1119 of the No Child Behind Act (NCLB), in Texas highly qualified teachers must: (a) hold at least a bachelor's degree; (b) be fully certified to teach in Texas; and (c) demonstrate competency in their core academic subject area.

Moreover, Texas accountability standards place higher education institutions at risk of losing teacher preparation accreditation when the minimum standards are not met. An example of these is *Border University* (pseudonym to protect confidentiality), a predominantly Hispanic-serving university (HSI) located in Southwest Texas. In the last 15 years, Border University's enrollment has grown from 14,971 to more than 23,000 students, who reflect the demographics of the Border region (pseudonym) from which 90% of them come. More than 78% are Mexican American, and another 6% commute to the campus from Mexican City (pseudonym) (Natalicio, 2013). For years, the College of Education (COE) at this university has successfully prepared and graduated a large number of Hispanic teacher education students, particularly in the bilingual education specialization area (University Communications, 2010). However, in most recent years, fewer students are enrolling or completing their studies as fully certified professionals from the teacher education program. While a number of economic and contextual factors must be considered, there is a need for discussion of the role that testing and minimum requirements may play.

As one of the universities producing the highest number of Hispanic bilingual teachers for U.S. public schools, Border University is the appropriate setting and context for this study because there is a need to reduce the gap between the growing number of Latino students and proportions of Latino teachers in U.S. public classrooms (Shah & Marschall, 2011). According to these researchers, reducing this gap is important for a number of reasons: (1) most studies

report that the presence of racial and ethnic minorities positively affects school policies and institutional practices with implications for minority students; (2) research finds that Latino and other minority teachers and administrators serve as cultural brokers between the schools and home environments; and (3) evidence suggests the smaller the gap between Latino teachers and students, the greater the likelihood of student academic success. Thus, knowledge on how to select and prepare Latino college students effectively for teacher certification is an area of concern in the field of education. Moreover, identifying factors that predict success on teacher certification exams among Latinos becomes crucial.

Although considerable research has been conducted with respect to the issues of standards, teaching, and teacher preparation (e.g., Angrist & Gyan, 2007; Darling-Hammond & Bransford, 2005; Gomez, Rodriguez, & Agosto, 2008; Poelzer et al., 2007; Valenciana, Weisman, & Flores, 2006; Weisman & Hansen, 2008), studies attempting to understand Mexican American students' success in teacher preparation programs and more specifically in bilingual education are scarce (Flores, Sheets, & Clark, 2011). This study will examine the individual and social contexts that are associated with bilingual education teacher certification in the context of one predominantly Hispanic-serving institution (HSI) located on the U.S.-Mexico border, with years of experience serving a predominantly Mexican/Mexican-American student population.

Purpose of the Study

The purpose of this mixed method study of Mexican American bilingual teacher candidates attending a HSI on the U.S.-Mexico border was twofold: First, to examine factors that predict Latino students' success on standardized certification examinations; and second, to develop a deeper understanding about the complex web of issues related to the experiences of bilingual Latino students preparing to become certified teachers, from the students' perspectives.

I bring to this study my lived experience, as a bilingual, bicultural, Mexican-American

emerging scholar committed to strive for social justice and as an advocate for the right to equal education of marginalized students of color, particularly Mexican American English language learners (ELLS).

Role of Researcher

This study is framed by the ideology that claims that border culture is rooted in the influence that the boundary exerts on the lives of *borderlanders* (Anzaldúa, 1999; Martínez, 1994). Borderlands refer to the geographical, emotional, and/or psychological space occupied by *mestizas*, and it serves as a metaphor for the condition of living between spaces, cultures, and languages (Elenes, 1997, 2011). A *Chicana* (woman of Mexican origin and/or other Latinas who share a similar political consciousness) feminist epistemology acknowledges that Chicanas and other marginalized peoples often have a strength that comes from their borderland experiences (Delgado Bernal, 1998), whether the *borderland* referred to be geographical, metaphorical or psychological.

My own personal and professional story is linked to the *borderlands*. Being born and raised on the Mexican side of the U.S.-Mexico border and having immigrated to the US as a teenager intimately connects me to this border community in more than one way. Like many border people, I was enriched by the *transnational* (border exchange) experiences that emanate from this region. In the borderlands one learns to survive by navigating and challenging the barriers that at times tend to separate and create rigid political, cultural, linguistic, psychological, spiritual, and racial boundaries. Yet, despite tall and electrified wire fences and ideological walls, *borderlanders* continue to be interconnected creating a *third space* where a *hybrid* culture (Yamamura, Martinez, & Saenz, 2010) flourishes, resulting in a unique richness of bicultural wealth in constant change. Graduating from Border University with a bachelor's and master's

degree in psychology provided me with the opportunity to work in the adult education field as an employment and training counselor and as a community college psychology instructor. While pursuing my doctoral degree in the college of education at Border University, I immersed myself in the field of teacher preparation working as a graduate research assistant, advisor, tutor, and mentor.

Significance of the Study

Finding the predictors of success of Mexican American bilingual teacher candidates attending a HSI on the U.S-Mexico border on teacher certification exams may provide some insight into the factors that are associated with teacher certification test performance. In addition, listening to a group of these teacher candidates' voices regarding standardized testing and teacher education preparation processes can provide more in depth understanding of their experiences and inform institutions, policy makers, academics, and the general public of the need to address potential disparities that standardized testing and other policies have created, leading to the unequal playing field that characterizes U.S. and states' public policies. Moreover, this study aims to contribute to the scholarly dialogue on the voice and the rights of marginalized Mexican American students, expanding the knowledge base on bilingual education teacher programs with similar student populations in diverse geographical, socioeconomic, and cultural contexts. To date, no mixed methods research of this type has been published as evidenced by my review of the relevant literature, using university data bases and scholarly publications.

Research Questions

The research questions guiding this study were:

1. How are SAT scores (verbal and mathematics), THEA scores (Reading, Writing and Mathematics), final college grade point average (GPA), and precertification exam scores at one HSI on the U.S.-Mexico border correlated?
2. To what extent do these constructs predict the performance of Mexican American bilingual teacher candidates or teachers on state-mandated high-stakes tests (TExES), particularly bilingual education certification and pedagogy and professional responsibility exam scores?
3. How do Mexican American college students attending a Hispanic-Serving Institution (HSI) on the U.S.-México describe their experiences of navigating the pathway to becoming "highly qualified" teachers?
4. To what extent does the combination of quantitative and qualitative findings generate new knowledge and lead to new insights about the bilingual teacher certification process for Mexican Americans?
 - a) What do the quantitative data tell us about the qualitative data?
 - b) What do the qualitative data tell us about the quantitative data?

Assumptions

My assumptions in relation to the use of a mixed methods design were three: First, utilizing this design brought together the strengths of both quantitative and qualitative approaches in answering the research questions guiding this study; secondly, by integrating both methodologies, I expected to present a greater diversity of points of view; and finally, as Tashakkori and Teddlie (2003) suggest, I was able to make stronger inferences based on the combination of the two methods in the same study.

In terms of my assumptions regarding the quantitative method, they are based on the following postpositivistic beliefs as outlined by Teddlie and Tashakkori (2009, p. 69):

- (1) Theory-ladenness of facts –the research is influenced by the theory or framework that an investigator uses.
- (2) Fallibility of knowledge --this means that one can never prove a theory or causal proposition.
- (3) Underdetermination of theory by fact --a number of theories can equally (but perhaps differently) account for the same finite body of evidence.
- (4) Value ladenness of facts –the research is influenced by the values of the investigator.
- (5) Nature of reality – researchers understand that social realities are constructed.

In relation to the qualitative phase of this study, my assumptions are situated within the five philosophical assumptions that Creswell (2007, p.17) enumerates:

- (1) Reality is subjective and multiple
- (2) Researcher attempts to lessen distance between herself and that being researched.
- (3) Researcher acknowledges that research is value-laden and biases are present
- (4) Researcher writes in a literary style using the personal voice and uses qualitative terms and limited definition.
- (5) Researcher uses inductive logic, studies the topic within the context, and uses an emerging design.

Specifically, my assumptions involved my relationship with the participant teacher candidates. After working as a research associate, mentor, and volunteer at the advising and recruiting center of the college of education for two years, I established rapport and created relationships of trust with the participants. These relationships, in turn, facilitated an open and authentic dialogue with

the participants. They willingly participated in the research and shared their experiences and perceptions in the teacher preparation program with me. My own lens and biases influenced this investigation. Moreover, as assumed of case studies, I "made use of deep and complex interpretation, and present an in-depth picture of the case using narrative" (Bloomberg & Volpe, 2012, p. 177). As these authors assert, I strived to interpret the larger meaning of the participants' stories by focusing on processes, theories, and unique and general features of their accounts.

Additionally, this study was based on the assumption that, as a researcher, my values and belief system would play an important role in how I conducted the study and interpreted the data. As Creswell (2003) affirmed: "Knowledge is conjectural -absolute truth can never be found. Thus, evidence established in research is always imperfect and fallible. It is for this reason, that researchers do not prove hypotheses and instead indicate a failure to reject." (p. 7).

Delimitations

The quantitative analysis of this study was confined to a specific time period, in one specific context, at one institution of higher education. The secondary data analyzed was extracted from this university's archived records of bilingual education teacher candidates who graduated from academic years 2008 to 2011.

Regarding the qualitative paradigm, this multiple case study involved six purposefully selected Mexican American Latino bilingual teachers who graduated as bilingual generalist from the teacher preparation program at Border University,

Limitations

The limitations in this study are:

1. The uniqueness of this research within a specific context makes it difficult to replicate or generalize exactly in another context (Creswell, 2003). However, I believe that the context (sociopolitical, cultural, and linguistic) surrounding this multiple case study may be encountered in some borderland towns (Yin, 2014).
2. The results of statistical tests have limited generalizability. Usually they generalize only to those populations from which the sample was obtained (Krathwohl, 2009).

Definition of Terms

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

- ACT. The Academic College Test is a comprehensive system of data collection, processing, and reporting designed to help high school students develop postsecondary educational plans and to help postsecondary educational institutions meet the needs of their students. One component of the ACT is a battery of four multiple choice tests of educational achievement—English, Mathematics, Reading, and Science—and an optional Writing Test. The ACT also collects information about students' high school courses and grades, educational and career aspirations, extracurricular activities, and special educational needs. The ACT tests are taken under standardized conditions; the noncognitive components are completed when students register to take the ACT (ACT, 2007).
- Achievement Gap is the divergence or disparity that exists between the achievement of White, Asian, and other Latino students on one hand, and Mexican American students on the other (Ream & Stanton-Salazar, 2007).
- Borderlands refer to the geographical, emotional, and/or psychological space occupied by *mestizas*. This term serves as a metaphor for the condition of living,

between spaces, cultures, and languages (Elenes, 2011).

- Chicana/o is a woman or man of Mexican origin and/or other Latinos who share a similar political consciousness (Anzaldúa, 1999).
- ELLs. English language learners are students whose first language is not English and who are working towards English proficiency.
- High Stakes Test is an achievement test whose result may lead to serious consequences for students or for educators (AERA, 2000).
- Highly Qualified Teacher is a term defined in accordance with Section 1119 of the No Child Behind Act (NCLB). In Texas highly qualified teachers must: (a) hold at least a bachelor's degree; (b) be fully certified to teach in Texas; and (c) demonstrate competency in their core academic subject area.
- HSI. Hispanic-serving Institution is defined according to the Higher Education Act, 20 USCA Section 1101 as an institution of higher education that (a) is an eligible institution; (b) at the time of application, has an enrollment of undergraduate full-time equivalent students that is at least 25 percent Hispanic students; and (c) provides assurances that not less than 50 percent of the institution's Hispanic students are low-income individuals. Low income is defined as 150% of the poverty level as determined by the Bureau of the Census (NCES, 2012).
- Latino and Hispanic are used interchangeably in this paper to refer to a person residing in the United States whose cultural and national origin is from Mexico, Central America, the Spanish speaking Caribbean, or South America.
- Mestiza/o is a person of mixed Mexican and indigenous heritage. (Murillo, 2010).

- NCLB. No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (codified as amended in scattered sections of 20 U.S.C). One of NCLB's major components is its requirement that states receiving federal education grants adopt "challenging academic content standards and challenging academic achievement standards" that apply equally to all students. States must implement "accountability systems" (i.e. tests) to ensure that all schools make "adequate yearly progress" defined as meeting or exceeding the objectives set by the state (Hostetler, 2005, p. 483).
- SAT: Scholastic Assessment Test is a standardized test for college admissions in the United States. The SAT is owned, published, and developed by the College Board, a nonprofit organization in the United States. It measures critical reading, mathematical reasoning, and writing skills that students have developed over time and that they need to be successful in college.
- Standardized test is a test (as of intelligence, achievement, or personality) carefully designed for consistency of format, content, and administration procedure. All standardized tests must meet psychometric (test study, design, and administration) standards for reliability, validity, and lack of bias (Zucker, 2003).
- Teacher Certification or Licensure is a teaching certificate or license issued to an individual educator. The specific certificates or licenses classified as certification in each state are defined by the state. States are to provide information on degree, course work, assessment, supervised clinical experiences and other requirements (U.S. Department of Education, 2010).
- Teacher preparation program is a state-approved course of study, the completion of which signifies that an enrollee has met all the state's educational requirements, or

training requirements, or both, for initial certification or licensure to teach in the state's elementary or secondary schools. A teacher preparation program may be either a 'traditional' (i.e., undergraduate) program or an alternative route to certification, as defined by the state. Also, alternative programs may be within or outside an institution of higher education (U.S. Department of Education, 2010, pp. 3-4)

- THEA. Texas Higher Education Assessment is a test used by Texas universities as part of their admission requirements into teacher preparation programs. The purpose of this test is to assess the reading, mathematics, and writing skills that entering freshman-level students should have if they are to perform effectively in undergraduate certificate or degree programs in Texas public colleges or universities. In 1989, the THEA Test was approved by the Texas Higher Education Coordinating Board, under Senate Bill 286, Texas Education Code, Section 51.3062: Texas Success Initiative, for use by Texas institutions of higher education as an assessment instrument to evaluate incoming students. It provides the diagnostic data required by this legislation; its content is the same as that of the former TASP test.

(http://www.thea.nesinc.com/TA_IBTOverview.asp).

- TExES. Texas Examination of Educator Standards are certification examinations required for teacher candidates seeking to be licensed in Texas. The State Board for Educator Certification (SBEC) develops the TExES. The TExES tests are criterion-referenced examinations designed to measure a candidate's knowledge in relation to an established criterion rather than to the performance of other candidates. All of the tests in the TExES program contain multiple-choice questions. Some tests also have additional types of questions (e.g., open-ended written or oral responses). (<http://cms.texas-ets.org/texas/>)

The tests consist of a series of examinations in the student's specialization (i.e., certification field) and in pedagogy/professional knowledge. Teacher candidate performance on the TExES is employed as a quality indicator in Texas Accountability System for Educator Preparation and institutional accreditation ratings are based, in part, upon the success of all students as well as the success of disaggregated groups (Justice & Hardy, 2001).

Organization of the Dissertation

This dissertation is divided into five chapters. This first chapter provides an introduction to the problem under investigation, purpose and significance of the study, research questions, assumptions, delimitations, limitations, and definition of terms. The second chapter contains a literature review of Latinos' educational achievement in higher education and in bilingual education programs. In the last part of this chapter, I discuss self-efficacy theory, critical race theory and Latino critical race theory as the conceptual frameworks of this study. The third chapter explains the sequential mixed methods design utilized in this study describing the data collection and analysis of the quantitative and qualitative methods. It also includes a description of the mixed methods design employed in this study. The fourth chapter contains the quantitative results and qualitative findings. The fifth chapter discusses the integrated results of the two phases, the implications, limitations, and recommendations.

Chapter 2

Literature Review

The purpose of this mixed method study of Mexican American bilingual teacher candidates attending a HSI on the U.S.-Mexico border was twofold: First, to examine factors that predict Latino students' success on standardized certification examinations; and second, to develop a deeper understanding about the complex web of issues related to the experiences of bilingual Latino students preparing to become certified teachers, from the students' perspectives. This chapter presents a review of the literature relevant to the research topic. This review includes different sections. First, an overview of the changing U.S. demographics is provided. Then, the next sections concentrate the discussion on: Latinos in higher education, particularly in teacher education; high-stakes testing and its impacts on teacher preparation; teacher preparation programs inside and outside institutions of higher education; and research on Latino bilingual teacher candidates. In the last part, the three theoretical frameworks guiding this study are discussed: self-efficacy theory, critical race theory (CRT), Latino critical race theory (LatCrit), and borderland cultural wealth (BCW).

Changing U.S. Demographics

According to the 2010 Census, there are 50.5 million Hispanics in the United States, making up 16.3% of the total population. The Pew Hispanic Center (PHC) reported that the Hispanic population accounted for most of the nation's growth (56%) from 2000 to 2010 (Passel, Cohn, & Lopez, 2011), and Mexican Americans constitute 65% of the total Latino population (PHC, 2012). In addition, a large percentage of the Latino population is foreign born or has immigrant parents. For example, one in five young people growing up in the U.S. have

immigrant parents (Suárez-Orozco, Suárez-Orozco, & Todorova, 2008). These demographics are significant for policy makers, school administrators, teachers, parents, and the general public interested in the educational achievement of Latinos since, in the near future, these youths will represent a large sector of the workforce.

Among Latinos, Mexican Americans in the United States have one of the lowest academic achievement rates (Ortiz, Valerio, & Lopez, 2012). This disparity has been attributed by a number of scholars (e.g., Gándara & Contreras, 2009; Irizarry, 2011; Nieto, 2010) to discriminatory and Eurocentric practices that have predominated in U.S. public policy (e.g., Leal & Meier, 2011; Murillo et al., 2010). Mexican Americans have a long history of segregation and exclusion in the U.S. (Acuña, 2004; Donato, 2007; San Miguel, 1987; San Miguel & Donato, 2010; Valverde, 2006). For example, San Miguel (1987) explains that after the annexation of Texas to the U.S. and the ending of the Mexican American War in 1848, the native Mexican population in Texas became "systematically deprived of whatever political and economic resources it had" (p.3).

One of the historic events in the history of Mexican American education that uncovered the alienation and low quality of education that Mexican Americans attending public schools in five Southwestern states (Arizona, California, Colorado, New Mexico, and Texas) were receiving was the publication in the early 1970s of six reports by the U.S. Commission on Civil Rights (1971-1974). The Commission addressed two fundamental questions in the four-year study: (1) how well are the schools of the Southwest serving the Mexican American Students?; and, (2) are they providing equal education opportunities for them? The series of studies revealed the negative and detrimental effect of the U.S. public school system for Mexican Americans. They found that Mexican American public school pupils were severely isolated and attended

ethnically imbalanced schools; Mexican Americans were underrepresented on school and district professional staff teams as well as among school board members; and the small number of Mexican American staff and school board members were working in predominantly Mexican American schools or districts (Volume 1).

The title for the third volume, *The Excluded*, provided a clear picture of the total exclusion of the Mexican American culture and the Spanish language from the public school curriculum. It also discussed the lack of effective and adequate bilingual programs to address the educational and developmental needs and strengths of Spanish speaking students who entered U.S. schools confronting a strange culture and language, frequently resulting in high levels of anxiety and low self-esteem because they were considered to come from a deficient culture. Instead of providing adequate support and effective education, the school system classified them as mentally retarded. According to the Commission, the clearest indication of school failure was the 60% graduation rate of Mexican Americans, compared to an almost 90% in Anglos (i.e., Whites). In addition, Mexican Americans were more than twice as likely to repeat a grade as Anglo students and as much as seven times more likely than Anglos to be over age for their grade. Their conclusion in the last volume was absolute and clear: “On the basis of the five reports already issued, the unavoidable conclusion is that schools are failing.” (Volume 6, p. 1)

The low-status image of this group in the United States has persisted and has been described as even more discouraging, given the increase in the anti-immigrant climate that currently exists in the nation. In addition, immigration status, language, SES, and family demographics, (Bohon et al., 2006), strengthen the likelihood of Mexican-Americans having the lowest educational attainment and college enrollment rates (Gaytan, 2013; Ortiz Valerio, & Lopez, 2012). Research (Hernandez, 2003) has established a link between socioeconomic status

and low academic achievement. For example, in a longitudinal study involving 3,975 children, Hernandez (2011) found that 22% of children who had lived in poverty did not graduate from high school, compared to 6% of those who had never been poor. This rises to 32% for students spending more than half of their childhood in poverty. Poverty rates in the U.S. continue to increase. For example, data indicate that the state of Texas, despite its economic growth, has had the most troubling trends since 1980, with a larger percent of its population living in poverty than the overall U.S. average (Dietz, 2009).

Table 2.1

Poverty Rates in the United States

Year	State	Poverty Rate	Total Population	Number of Persons in Poverty
2007	Mississippi	22.60%	2,921,030	660,153
	Texas	16.50%	23,843,432	3,934,166
	Louisiana	16.10%	4,373,310	704,103
	Kentucky	15.50%	4,236,308	656,628
	North Carolina	15.50%	9,041,594	1,401,447
	Tennessee	14.80%	6,149,116	910,069
	Alabama	14.50%	4,626,595	670,856
	New York	14.50%	19,429,316	2,817,251
	Arizona	14.30%	6,353,421	908,539
	South Carolina	14.10%	4,404,914	621,093

Note. Adapted from Dietz, 2009. *Poverty in Texas*. Retrieved from http://texaspolitics.laits.utexas.edu/12_1_0.htm

Dietz (2009) claims that the population of individuals in Texas living at or below poverty levels in absolute numbers (Table 2.1) is larger by far than the combined poor populations of the other four states (3.9 million for Texas compared to 2.13 million for the other four together:

Mississippi, Louisiana, Kentucky, and North Carolina). Another disturbing Texas statistic is that more than half of the population living in poverty is Hispanic (Figure 2.1). Moreover, the three poorest counties of the nation, according to 2007 U.S. Census, were located on the Texas-México border (Table 2.2), with large Mexican-American populations.

Table 2.2

Poorest Counties in the United States

County	Poverty Rate
Cameron, TX	34.7
Hidalgo, TX	34.3
El Paso, TX	28.7
Bronx, NY	27.1
Philadelphia, PA	23.8
Tulare, CA	23.7
Caddo Parish, LA	23.5
St. Louis, MO	22.4
Kings, NY	21.9
Mobile, AL	21.1

Note. Adapted from Dietz, 2009. *Poverty in Texas*. Retrieved from http://texaspolitics.laits.utexas.edu/12_1_0.htm

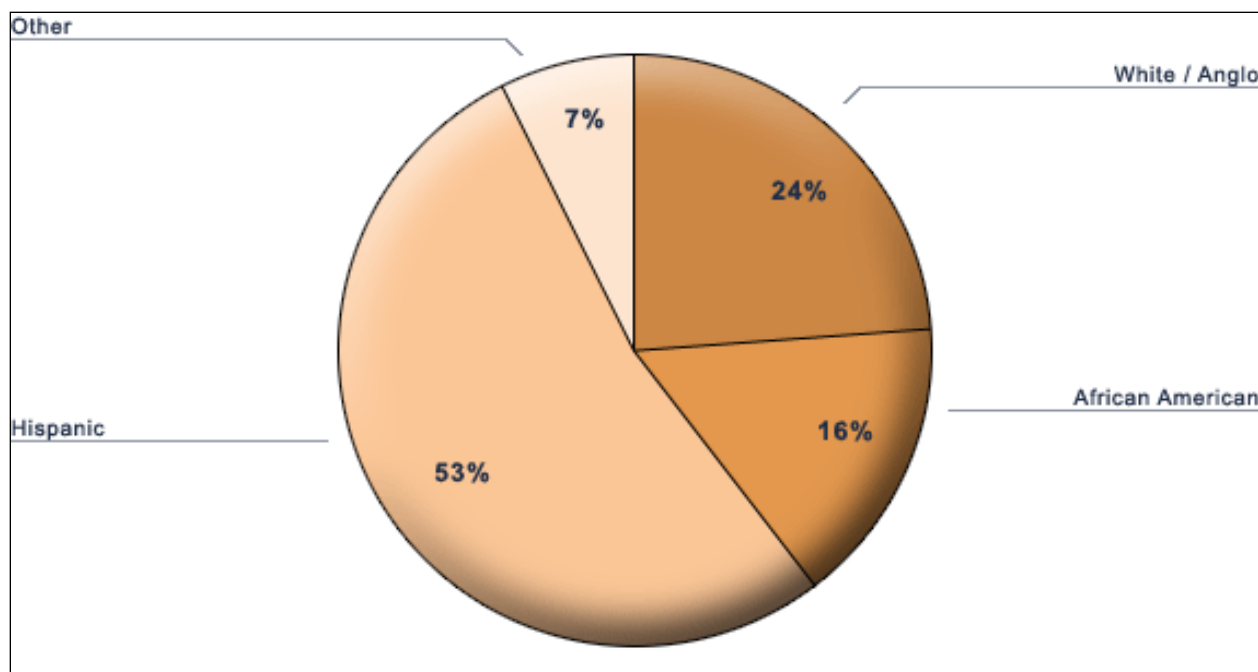


Figure 2.1 Percentage of total persons in poverty by group in Texas. Adapted from Dietz, 2009. Poverty in Texas. Retrieved from http://texaspolitics.laits.utexas.edu/12_1_0.html

Research has pinpointed these trends, showing the growing differences in academic outcomes and graduation rates between students of color and many White and Asian students but little has been done to enact improved instructional practices related to race and ethnicity (e.g., Darling-Hammond, 2012; Gándara & Contreras, 2009; Hawley & Nieto, 2010). Furthermore, in spite of the significant growth among Latinos in the U.S. "the teaching force remains overwhelmingly White, as Latino students continue to be underrepresented in institutions of higher education and, more specifically, within teacher education programs" (Irizarry, 2011, p. 2804). Some researchers (Darling-Hammond & Bransford, 2005; Good, Masewicz, & Vogel, 2010; Ladson-Billings, 2005; Staudt & Méndez, 2010) have proposed a number of solutions to the complex issues facing U.S. schools. Some of these challenges include school budget reductions, growth in English language learner (ELL) student population, increased accountability, global economic and political restructuring.

One of the proposals that has emerged in recent years is to expand the pipeline of highly qualified Latino bilingual teachers who can serve not only as role models, but also connect with their students' culture and language (González, Moll, & Amanti, 2005; Palincsar & Ladewski, 2006; Sleeter, 2008; Villegas, 2007). Gándara and Contreras (2009) assert that immigrant students who possess essential skills in reading, writing, comprehension, and mathematics in their native language or those who acquire these skills through a bilingual education program outperform their U.S.-born counterparts. However, research has shown that not all Latino bilingual preservice teachers have developed the academic level of Spanish language proficiency required to teach content knowledge across all disciplinary areas to native Spanish speaking students (Ekiaka & Reeves, 2010; Guerrero & Guerrero, 2009; Murillo, 2010; Scarcella, 2003; Sutterby, Ayala, & Murillo, 2005; Valdés 2004; Valdés & Geoffrion-Vinci, 1998). Valdés (2004) describes academic language as a variety that involves a combination of linguistic, cognitive, and sociopsychological dimensions that are interdependent and asserts that the lack of proficiency in academic Spanish of Latino bilingual teachers can be explained as follows:

Spanish bilingual teachers, for example, are often second and third generation Mexican Americans who have themselves been schooled entirely in English and have not mastered the academic varieties of Spanish; or[they are] second-language learners of Spanish who may also had few opportunities to hear academic Spanish outside of university literature classrooms.(p. 124)

Various explanations have been advanced for the pre-service bilingual teachers' limited academic Spanish proficiency. For example, Guerrero and Guerrero (2009) attribute this to "language policy and the economics of language in the United States that may dilute the sociopsychological dimension of academic Spanish passed on from generation to generation

through the bilingual programs themselves." (p. 55). These authors assert that the U.S. capitalist system operates in such a powerful way that language policies are designed to prevent the teaching and development of academic Spanish among Latinos as this population is a major source of cheap labor. Brochin Ceballos (2012) expounds on the causes and affirms that as a result of years of schooling in the US, many Latinos internalize the deficit perspectives and dominant views toward their own language, culture, and literacy practices.

With respect to high stakes teacher licensure testing, Smith & Murillo (2012), speculate that "the disruption of their Spanish literacy development can have negative economic consequences if they(bilingual teachers) are unable to pass the written sections of Texas' recently revised bilingual teacher certification exam." (p. 637). Indeed, research findings reveal that Latino teacher candidates face a number of challenges on the pathway towards a teaching career (Angrist & Guryan, 2007; Irizarry & Donaldson, 2012; Poelzer, Zeng, & Simonsson, 2007; Pohan & Ward, 2011) including obtaining on average, lower passing rates in the teacher certification exams required by states.

Thus, in the context of restrictive federal mandates and reductions in budgets to support public education, the stakes are high, particularly for Latino bilingual teacher candidates. Research exploring the factors that may contribute to the academic success of Latino bilingual teacher candidates is growing (Bonner et al, 2011; Irizarry, 2011). The purpose of this chapter is to review, discuss, and synthesize research related to Latino bilingual education teacher candidates in the U.S., specifically focusing on students enrolled in programs in Texas. This review is organized in four sections. First, I present an overview of the literature on Latinos in higher education and teacher education; secondly, I synthesize research on Latino bilingual education teacher candidates; third, I discuss the theoretical frameworks used in this study, and

in the last part of this review, I summarize the fundamental issues explored, draw main conclusions, and pinpoint future research directions. In the next section, I present an overview of the literature discussing Latinos in higher education.

Latinos in Higher Education and Teacher Preparation

Some researchers (Gándara & Contreras, 2009; Irizarry, 2011; Yosso, Parker, Solórzano, & Lynn, 2004; Yosso et al., 2009) claim that racism "has permeated the fabric of all higher education, fueling the necessity for *Historically Black Colleges and Universities (HBCUs)*, *Hispanic Serving Institutions (HSIs)*, and *Tribal Colleges* to create postsecondary opportunities for people of color who were otherwise excluded from attending *Primary White Institutions (PWIs)* (Irizarry, 2011, p. 2807). Following the civil rights movement of the 1950s and 1960s, people of color began gaining wider access to institutions of higher education (Contreras, 2011); nevertheless, they remain underrepresented in U. S. institutions of higher education (Gándara & Contreras, 2009). Although the percentage of Latinos pursuing higher education has increased, "just 13% of Latinos have a bachelor's degree, and only 4% have completed graduate or professional degree programs." (U.S. Department of Education, 2011, p. 2). According to the Pew Hispanic Center, in 2010, Salvadorans (7%), Guatemalans (8%) and Mexicans (9%) had the lowest rates of college completion among U.S. Hispanics 25 years of age or older and, in comparison, Colombians (32%) and Peruvians (30%) had a higher share of the total U.S. population with at least a bachelor's degree (Motel & Patten, 2012).

Shifts in policy corresponding with the civil rights gains of the mid-20th century, although significant, did not eliminate discriminatory practices within higher education institutions (Gándara & Contreras, 2009). More recent manifestations of prejudice and discrimination aimed at limiting access to higher education for people of color, generally

speaking, and Latinos, more specifically, include the elimination of affirmative action programs, and an overreliance on standardized tests such as SAT scores even though data suggest that such scores are not a useful predictor of a students' college success or career potential (Astin & Oseguera, 2004).

Beginning in 1968 with the passage of Title VI of the Civil Rights Act, colleges and universities began creating race-conscious admission policies to increase the representation of underrepresented racial/ethnic groups (Yosso et al., 2004). Although race-based forms of affirmative action have always been highly contentious, ten years after the passage of Title VI, a case was brought before the Supreme Court challenging the constitutionality of race-based affirmative action programs, citing an adverse effect on White applicants. In their ruling in *Bakke v. Regents of the University of California* (1978, as cited in Irizarry, 2011), the court determined that racial quotas were unconstitutional for public institutions of higher education. However, the second part of their decision established that race could in fact be considered as one factor in college admissions. More recently, in *Grutter v. Bollinger* (2003, as cited in Irizarry, 2011), a White student sued the University of Michigan, claiming she was denied admission into the law school in favor of *less qualified* students of color. In this case, the court upheld the university's right to use race as a factor in admissions decisions.

Detractors of affirmative action have had their share of victories as well. The university systems in California, Washington, and Texas, among others, have all eliminated race-based affirmative action programs considerably limiting access to higher education for Latinos and other students of color (Long, 2004). A recent case involving a White student and the University of Texas (UT) at Austin is being heard in October 2012 by the U.S. Supreme Court. Ms. Fisher, 22, who is white, stated that her race was held against her when she was not

admitted to UT Austin. The university's larger defense is that it must be free to assemble a varied student body as part of its academic and societal mission. The university officials claimed that the school's affirmative action program was needed to build a student body diverse enough to include minority students and they added that interaction among students in class and around campus helps students overcome biases and make contributions to a diverse society (Liptak, 2012).

Another barrier to accessing higher education for Latinos has been an overreliance on standardized test scores, including high-stakes tests used as secondary school exit exams and the Academic College Test and Scholastic Assessment Test (SAT). Currently, 26 states require high school students to pass content area tests as a requirement for graduation (Center on Education Policy, 2008). Although assessing student knowledge with a standardized test may seem fair and equitable, with equal opportunities for all, many school districts administering these exams cannot guarantee that all students had equal access to the academic content that appears on the test, or a qualified teacher to engage them with material (Lankford, Loeb, & Wyckoff, 2002). Moreover, high-stakes tests with dire consequences for underachievers have resulted in increased dropout rates among Latino youth, severely compromising the pool of prospective Latino applicants to four-year institutions of higher education (Heubert, 2002; McNeil et al., 2008; Valenzuela, 2005).

High-stakes testing has impacted U.S. education at all levels. Ravitch (2011) affirms that there is a "problem with the misuse of tests for high-stakes purposes" (p. 150). According to this author, policy decisions based on the beliefs of elected officials who do not understand the limitations of testing have had adverse consequences for students and educators. For example, Ravitch asserts, tests cannot identify with certainty which students should be held back,

which teachers and principals should be fired or rewarded, and which schools should be closed. Unfortunately, in addition to elected officials, members of the general public are not aware of the limitations of testing and they also believe that test scores have scientific validity and that they provide objective measures "such as those of a thermometer or a barometer" (Ravitch, 2011, p. 152).

Table 2.3

SAT and/or ACT Performance At or Above Criterion (%), by Race/Ethnicity and Gender, Texas Public Schools, Class of 2000 Through Class of 2010

Class	Race/Ethnicity						
	African American	Indian	Asian	Hispanic	Pacific Islander	White	Multiracial
2000	7.8	26.7	n/a	11.1	n/a	36.4	n/a
2001	7.4	28.3	n/a	10.7	n/a	36.2	n/a
2002	6.9	26.0	n/a	10.4	n/a	36.3	n/a
2003	7.2	29.2	n/a	10.8	n/a	37.2	n/a
2004	7.6	30.6	n/a	10.5	n/a	37.6	n/a
2005	8.1	29.9	n/a	11.0	n/a	38.7	n/a
2006	7.8	31.7	n/a	11.4	n/a	38.3	n/a
2007	8.0	27.1	n/a	11.9	n/a	38.2	n/a
2008	7.9	31.9	n/a	11.7	n/a	39.6	n/a
2009	7.7	33.7	n/a	11.8	n/a	40.6	n/a
2010	8.1	28.4	52.0	12.7	28.7	41.4	34.9

Note. Adapted from Texas Education Agency (TEA, 2011). College Admissions Testing of Graduating Seniors in Texas High Schools Class of 2010, p. 37.

College entrance exams such as the ACT and SAT have been shown to be culturally biased, yielding significantly different scores based on the race/ethnicity, gender, and social class of the test taker (Contreras, 2011; Gándara & Contreras, 2009). Lower test scores are a barrier for Latinos pursuing postsecondary education, especially those who come from low-income families (TEA, 2011). To illustrate how ethnicity and socioeconomic status are

associated with SAT and ACT scores of Texas students, scores for the period from 2000 to 2010 are presented in Table 2.3. This table shows that over the 10-year period, the pattern of performance across racial/ethnic groups was generally consistent: Asian/Pacific Islanders had the largest percentage of examinees scoring at or above criterion, followed by White, American Indian, Hispanic, and African American examinees. In 2010, as shown in Table 2.4, the percentage of examinees identified as economically disadvantaged who scored at or above criterion (9.5%) was much lower than the percentage of examinees not identified as economically disadvantaged (36.4%).

Table 2.4

SAT and/or ACT Performance At or Above Criterion, by Race/Ethnicity, Economic Status, and Gender, Texas Public Schools, Class of 2010

		Examinees scoring at or above criteria	
Group	Examinees	Number	Percent
African American	22,291	1,806	8.1
American Indian	704	200	28.4
Asian	8,700	4,523	52.0
Hispanic	57,301	7,303	12.7
Pacific Islander	209	60	28.7
White	67,819	28,060	41.4
Multiracial	2,431	848	34.9
Econ. disadv.	55,601	5,278	9.5
Not econ. disad.	99,993	36,384	36.4
Female	85,507	20,792	24.3
Male	74,176	22,097	29.8
State	159,688	42,889	26.9

Note. Adapted from Texas Education Agency (TEA, 2011). College Admissions Testing of Graduating Seniors in Texas High Schools Class of 2010, p.35.

To summarize, Latinos continue to be underrepresented in primarily White, higher education institutions where institutional racist practices are more predominant. In some colleges, race-based affirmative action policies that had facilitated admission for students of color have been eliminated. In addition, the pervasive effects of standardized mandated tests have had a detrimental effect on the number of Latinos graduating from high school and on their college admission rates. These policies, in turn, have also impacted enrollment in some teacher preparation programs. These factors help to explain why fewer Latino students enter college and enroll in teacher education programs.

In the next sections, I first discuss how market-driven policies have affected traditional teacher preparation programs in higher education institutions; then I compare the alternative teacher certification programs that are not part of higher education institutions with traditional teacher preparation programs; and I conclude this section discussing the No Child Left Behind Act (NCLB) of 2001 (2002) in relation to teacher preparation.

High Stakes Testing and its Impacts on Teacher Preparation

Research (e.g., Darling-Hammond, 2012; Darling-Hammond, Newton, & Wei, 2010; Duffy et al., 2008) has demonstrated that the emphasis on high stakes testing as the primary criterion for “quality”, has had deleterious effects on the U.S. public education system, particularly in regards to diverse populations. The No Child Left Behind (NCLB, 2002) Act of 2001, for example, has not only reduced K-12 classroom practice to a nearly exclusive focus on test preparation, but has also had a troubling impact on every aspect of education, including teacher preparation (Darling-Hammond, 2010). Specifically, "NCLB has affected three major areas of teacher education: who is entering teacher preparation programs; the experience they

have while they are in those programs; and the experience they have while in the schools as student teachers" (Selwyn, 2007, p. 124). According to this author, NCLB and its definition of the highly qualified teacher has exacerbated the differences between Whites and students of color because the majority of students who are admitted to teacher preparation programs continue to be White despite the increase in the U.S. Latino student population. To be highly qualified, a teacher must be certified by the state, have at least a bachelor's degree, and pass basic skills and subject area tests. Quality is defined in terms of content knowledge and in many states this is assessed using tests of content knowledge and pedagogy. Researchers note that although there is a strong press for the assessment of teacher effectiveness as measured by student achievement gains (high-stakes test scores), "these are unlikely to help teacher educators improve programs without a rich array of other tools." (Darling-Hammond, Newton, & Wei, 2010, p. 386).

Becoming a highly qualified teacher also includes taking many required courses associated with the candidate's area of certification, resulting in more money and time spent. The emphasis placed on testing and adhering to the state mandated, prescribed curriculum has also dissuaded many students from pursuing a teaching career. In addition, when teacher candidates engage in the fieldwork sequence (i.e., go into schools to observe and then to student teach), they see fewer and fewer schools devoting time to critical thinking, or to developing the skills and habits of life-long learners because they are required to use programmed curriculum that does not give them the opportunity to make use of the skills they are learning. Teacher certification exams can be seen as gatekeepers because results on these tests keep prospective teachers away from the classroom, independently of how effective they are (Barton, 2008).

Wilson and Youngs (2005) found that there are serious weaknesses in the research base and limited literature on teacher testing, that there was no agreement on what are the most effective approaches to teaching, and that there is a moral, ethical, and practical imperative to produce better research, considering the high-stakes role that testing plays in determining who can become a teacher. They conclude that we cannot quantify or test for what makes a good teacher. These mandated-teacher tests are also criticized because they do not address important skills and knowledge that teachers must have in order to work with diverse students. For example, Banks et al. (2005) list these skills as teacher's ability to appreciate and understand the cultures, communities, and experiences of their students; to work with them through various modalities, building on diverse students' strengths and prior learning; and to support them in dealing with the boundary crossings that many students have to negotiate between home and school.

Recently, educational researchers who have taken a more critical stance (e.g., Darder, 2011; Kincheloe, 2008; McLaren, 2011; Sleeter, 2008; Spring 2011) exposed how external forces that emerged from global economic and political restructuring are attacking teacher education . These authors assert that these aggressions aim not only to "deprofessionalize teaching by devaluing professional preparation of teachers, but also to undermine equity and democracy by restructuring education around corporate needs." (Sleeter, 2008, p. 1947). Similarly, Kincheloe (2008) affirms that using massed-produced teaching practices as curriculum guides results in *deskilling teachers*, a process which may be defined as: "Teachers and other professionals falling into a state of degraded professional practice when hyperrationalized reforms remove the conceptualization of the professional task from its execution" (p. 121). This

author adds that teachers in these positions become low-level functionaries in the educational workplace who simply follow the orders of their administrative superiors.

The NCLB policies continue to have a powerful influence on teacher preparation programs. According to Copenhaver-Johnson (2007), the former U.S. Secretary of Education Rod Paige recommended that state universities begin "basing their programs on rigorous academic content, eliminating cumbersome requirements not based on scientific evidence and doing more to attract highly qualified candidates from a variety of fields and streamline their certification system ..." (p. 41). Furthermore, this author explains that restructuring teacher education on the basis of scientific research has resulted in the virtual erasure of significant advances in teacher education resulting from qualitative studies because scientifically based research, as defined by the Department of Education, excludes most studies of qualities and behaviors that cannot be measured under a positivistic paradigm. These qualitative studies include research on culturally responsive instruction, social justice perspectives, and other characteristics of teachers aligned with multicultural education. The Department of Education report that Copenhaver-Johnson alludes to was written by Walsh (2001) for the Ansell Foundation and according to this report, there were 19 studies not meeting scientific criteria. Five of these studies are: National Reading Panel (2000); Wenglinsky (2000); Miller, McKenna and McKenna (1998); Goldhaber and Brewer (2000); Hawk, Coble and Swanson (1985). In response to this report, Darling-Hammond (2001) provided an exhaustive explanation justifying the scientific basis of every one of the articles.

Furthermore, in a more recent article, Darling-Hammond (2012) also criticizes a proposal that aims to streamline teacher preparation programs and advocates for more funding to support teacher preparation. In the same article, she states: "we need a new approach to federal policy

that makes it possible for all students to succeed" (p. 2) and suggests that for this to happen, Congress and the U.S. Administration must think differently about the ends and means of reform. She advocates for investment in the quality of educators as follows:

Since federal supports for teacher training were dramatically reduced in the '80s, teacher shortages in schools serving low-income students have increased to the point that there is a revolving door for teachers in these schools. Congress has colluded in lowering preparation standards and creating fast-track alternative certification routes for teachers to fill jobs in high-minority, low-income schools, despite research that shows that these teachers leave faster and reduce student achievement. (p. 2).

Additionally, Darling-Hammond, Newton, and Wei (2010) explain that the Higher Education Act in the U.S. requires that schools of education be evaluated based on graduates' performance on licensing tests, and the new federal funding initiative titled *Race to the Top* (<http://www.whitehouse.gov/issues/education/k-12/race-to-the-top>), encourages states to create databases that link teachers to their students' test scores and to use these data to evaluate the effectiveness of both teacher education programs and individual teachers. These authors explain that this continues a trend toward more outcome-based evaluation of programs that started back when the Teachers for a New Era initiative launched by the Carnegie Corporation of New York and other foundations required that the 11 institutions involved in the project supported to redesign their programs collect evidence about how their teacher candidates perform and how the students of these teachers achieve. Darling-Hammond et al. (2010) affirm that "teacher educators are seeking to develop strategies for assessing the results of their effort, strategies that appreciate the complexity of teaching and learning and that provide a variety of lenses on the process of learning to teach" (p. 370). These authors explain that the complexity of

measuring teaching effectiveness in relation to student achievement cannot be accomplished with standardized tests alone:

Although there is strong press for the use of measures of teacher effectiveness as measured by student achievement gains, these are unlikely to help teacher educators improve programs without a rich array of other tools that reveal how specific experiences support candidates in developing useful practices, and what areas of practice need more attention. Furthermore, there will be continuing concerns about the narrowness of the learning measured by standardized tests, and about the many challenges of collecting and analyzing such data in ways that overcome the many technical and practical problems associated with their use. (p. 386).

Darling-Hammond and her colleagues (2010) suggest that using multiple measures and examining the relationships among them may help teacher educators develop a knowledge base for the continuous improvement of their own practice and may ultimately save the enterprise of teacher education as a whole.

In sum, as evidenced by the literature, although HSIs and affirmative action policies have facilitated Latinos' access to U.S. universities, these students confront a series of obstacles rooted in oppressive policies. Undoubtedly, more research-based solutions are needed to address this problem not only circumscribed to Latino bilingual education teachers but also to students of color at all school levels and especially Latinos residing in towns located on the U.S.-Mexico border where a unique set of historic, social, and economic factors exist that distinguish borderlanders from the rest of the U.S. population (Anzaldúa, 1999; Martinez, 1994; Romo, 2005; Pavlakovich-Kochi, 2011). As critical researchers point out, external forces attacking teacher education have continued to expand their business centered practices in the area of

teacher preparation by creating alternative programs. In the next sections, I discuss teacher preparation programs in institutions of higher education and the differences between traditional and alternative teacher preparation programs.

Teacher Preparation Programs in Institutions of Higher Education (IHEs)

Traditional teacher preparation programs are typically offered at four-year institutions of higher education (IHEs) and their broad curriculum includes courses in the candidate's area of specialization (content knowledge) and in pedagogy (teacher education). Generally, students graduating from these programs become certified teachers and meet the criteria outlined in NCLB (2002), ensuring that all K-12 students have access to *highly qualified teachers* defined as "teachers with full certification and demonstrated competence in the subject-matter field(s) they teach" (Darling-Hammond, 2010, p. 44). According to Darling-Hammond (2010), this provision was historic because the students targeted by this policy (low-income, students of color, English language learners, low achieving, and with special needs) lived in communities with schools least likely to have experienced and well prepared teachers. In Texas, IHEs, as required by state-mandated policies, require that students applying for admission to the teacher preparation program pass basic skills test of reading, writing, and mathematics. This requirement becomes problematic for many Latino applicants who are not able to pass these exams. Researchers (e.g., Gitomer et al., 2011) have hypothesized that one reason for not passing basic skills tests may be the result of a poor quality education. As evidenced by research (e.g., Darling-Hammond, 2010), many students of color attend underfunded schools with high teacher attrition rates.

The notion that standardized college entrance examinations can serve as neutral standards, and that all teacher candidates start from an equal playing field, is contested by critical educators (e.g., Irizarry, 2011; Yosso et. al., 2004) who assert that education is political by

nature, with a number of dire consequences for stakeholders from non-mainstream backgrounds. Indeed, the political nature of education is also reflected in the enactment of policies that, in many instances, are not supported by research but rather serve the interests of dominant groups to ensure that the status quo (i.e., White privilege and social inequality) is preserved. Along these lines, Staudt & Méndez (2010) assert:

The United States practices, especially in Texas with its high-stakes accountability testing including teacher and administrator bonuses for high pass rates, can marginalize students of low socio-economic status, many of whom (in U.S. discourse) are students of color, primarily Hispanic and African American (p. 175).

Globalization with its business oriented practices has been the driving force that continues to reproduce oppressive social conditions as Staudt and Méndez (2010) affirm: "We believe that school standardized testing is linked to the modern standards deployed in the internationally competitive market place" (p. 175). For example, although research indicates that teacher preparation/knowledge of teaching and learning, subject matter knowledge, experience, and the combined set of qualifications measured by teacher licensure are all leading factors in teacher effectiveness (Darling-Hammond & Bransford, 2005; Darling-Hammond, 2010), a rapidly growing number of nontraditional alternative teacher preparation programs that typically are not part of higher education institutions have developed in recent years, frequently omitting some of these essential factors in an effort to compete, accelerating the teacher preparation process.

Teacher Preparation Outside of IHEs

In comparing the features of traditional (teacher preparation programs in higher education institutions) and nontraditional (other than higher education institutions) alternative teacher certification programs there are some distinct differences. First, traditional certification is usually

based on a fixed-curriculum, with thorough pedagogical study, including instruction in content knowledge, and classroom field experience. Second, traditional programs are typically supported and supervised by faculty in a higher education institution with extensive professional experience and academic credentials. Conversely, the aim of nontraditional alternative certification programs is to compete for prospective teachers, promoting faster and cheaper routes to a teaching career. These programs reduce teacher preparation to smaller amounts of time, focusing on increasing 'teacher production' using cost efficient business plans.

Other differences between traditional teacher preparation and nontraditional alternative programs can be found in the field experience and student teaching components, and the human development courses required in the teacher preparation programs. When comparing the two types of programs, the traditional programs are almost four times as likely to require practicum (field experiences) as the nontraditional alternative certification programs. In terms of human development courses and student teaching, more traditional programs require these types of courses compared to nontraditional alternative programs (Adcock & Mahlios, 2005).

An ongoing debate regarding the quality of the nontraditional alternative certification programs has generated some research comparing specific programs (Warmack, 2008). In addition, there is a concern that the initial concept of providing alternate routes into teaching has been perverted in its implementation and that the weakening of the importance of pedagogy in education undermines the foundations of the teaching profession (Darling-Hammond, 2006). Indeed, Darling-Hammond's (2010) extensive research confirmed that there are significant differences in students' achievement depending on the teachers' certification route. Citing a national study, Darling-Hammond (2010) reported that students who were taught by traditionally certified teachers gained more on achievement tests than those of the alternative certified.

Moreover, this researcher argues that there are wide variations in alternative programs:

Some of these programs are well-designed routes for mid-career entrants that provide a tailored pathway that wraps relevant coursework around a carefully supervised practicum over the course of a year under the wing of an expert teacher... Other programs -generally targeted for high-turnover urban schools-offer only a few weeks of training before teachers step into the classroom on their own, with variable access to mentoring or support. (pp. 44-45).

Additionally, a number of studies in recent years (e.g., Constantine et al., 2009; Darling-Hammond, 2010; Ravitch, 2011) have examined some of the larger alternative programs, such as Teach for America (TFA). Ravitch (2011) cites a study that Darling-Hammond conducted in Houston with 4,400 teachers and 132,000 students. Findings revealed that certified teachers consistently produced significantly higher achievement than uncertified teachers and uncertified TFA teachers had a negative or non-significant effect on student achievement. Darling-Hammond (2010) states that when TFA teachers stayed in teaching long enough to complete their required coursework for certification, "the gap in effectiveness closed" (p. 47). An example of the number of teachers graduating from traditional (standard) and alternative teacher preparation programs in Texas is displayed in Table 2.5. Based on the total number of certified teachers, particularly in bilingual education, it seems that the alternative teacher certification route was more attractive than the traditional route. One of the possible reasons could be due to the economic recession that has been affecting the United States for an extensive period of time. As Darling-Hammond and Sykes (2003) maintained:

Today's troubled economy is temporarily offsetting these trends [need for more teachers] because of the relatively stability of teaching compared with such hard-hit sectors as high

technology... Demand from career-switchers may increase pressure for fast-tracking training, creating teachers who may soon become part of the exodus of the profession. (p. 19).

Table 2.5

Teacher Production by Certification Area in Texas

School Year 2010-2011		
Certification Program	Standard Program	Alternative Program
Bilingual Education	3,220	4,393
Career and Technical Education	623	1,072
Computer Science	164	274
English Language Arts and Reading	3,132	1,826
Fine Arts	1,606	757
General Elementary (Self-Contained)	11,950	10,436
Health and Physical Education	1,875	826
Languages Other than English	375	566
Mathematics	1,843	1,664
Science	760	1,900
Social Studies	1,273	1,112
Special Education	1,487	3,791
Total Certification Count	24,308	28,617

Note. Texas Education Agency. Retrieved from <http://www.texaseducationinfo.org/tea.tpeir.web/ViewReport.aspx>

In summary, the effectiveness and quality of education that nontraditional alternative teacher education programs provide continues to be strongly debated but a large body of research provides evidence that teachers graduating from traditional teacher preparation programs tend to stay longer at their jobs acquiring the years of experience necessary to become effective teachers. Some researchers have claimed that it is not possible to compare both types of programs because

there are important differences in the alternative certification programs' goals and the ways in which they are structured (Adcock & Mahlios, 2005). However, as large numbers of Latino teacher candidates (Humphrey & Wechsler, 2007) turn to alternative programs for their training and preparation, this dissertation calls the reader's attention to the need for future research on this topic, examining the short- and long-term impacts of alternative training programs on Latino teacher quality and retention (Warmack, 2008). In the next section, I synthesize research on Latino bilingual teacher candidates.

Research on Latino Bilingual Teacher Candidates

The body of literature that focuses on bilingual Latino teacher candidates continues to grow (e.g., Bonner et al., 2011; Guerrero & Guerrero, 2009; Irizarry, 2011; Murillo, 2010) as U.S. demographics continue to diversify. In this section, I discuss research on the large Latino teacher candidate pipeline in U.S. higher education, examining studies that present diverse perspectives, worldviews, and paradigms. These theoretical perspectives lead to considerable differences, and thus, the following section provides an overview of quantitative and qualitative research on the quality and quantity of Latino teacher candidates in the U.S. public education system, including presentation of diverse sets of findings, with discussion of implications and recommendations for policy and practice.

Quantitative research perspectives. The number of quantitative studies focusing attention on Latino teacher candidates' success is limited. However, an interest in investigating predictors of success on standardized tests has generated some research attempting to find prediction models, that is, identifying a clear cause-effect model for success that might lead to solutions. As discussed in the prior sections, Latinos very often are precluded from entering teacher preparation programs or passing teacher certification tests because they may have lower

scores on standardized college admission tests (Poelzer, Zeng, & Simonsson, 2007). There is also evidence that Latinos have more difficulty in passing the state-mandated certification tests (Angrist & Guryan 2007). For example, in a study conducted at a Southern Texas university where 87% of the population is Hispanic, Poelzer and his colleagues (2007) found that English language skills predict success on the certification exams. Similarly, Burke (2005) conducted a correlation study at a small university in New York and found that Scholastic Assessment Test (SAT) and Grade Point Average (GPA) scores were the best predictors of success in teacher certification exams. Another study conducted in California revealed similar results (Jones, McDonald, Maddox, & McDonald, 2011) and the authors concluded that the best predictor of teacher candidate success on two state mandated teaching certification exams was GPA. In general, other factors including basic skills on math, reading, and writing; GPA; ethnicity; age; and gender have been used as predictors in students' success on teacher certification tests (Brown, Brown, & Brown, 2008; Burke, 2005; Justice & Hardy, 2001; Pohan & Ward, 2011; Tanner, 2003). However, it is important to note that the findings have varied and, in some cases, no significant results have been found. In those where statistically significant results have been found, the percentage of variability that can be predicted from these different factors is, on average, not more than 30%. This level of predictability is moderate but common in studies investigating education and social phenomena (e.g., Aronson, Wilson, & Akert, 2012; Mertens, 2010). As it is well known, human behavior is complex and hard to predict, especially when researching academic performance where multiple factors (psychological, biological, cultural, and social) are involved.

Based on the research that supports the importance of ethnic minority teachers as role models for diverse populations (Sleeter & Milner, 2011), and on the argument that minority

teachers bring a unique perspective to schooling because of their personal experiences (Villegas & Lucas, 2002), factors such as acculturation and identity in Latinos have been additional areas of interest for some researchers focusing on Latino pre-service teacher success. For instance, Flores, Clark, Guerra, and Sanchez (2008) investigated acculturation and identity among Latino bilingual education teacher candidates, using acculturation scales as measuring instruments. Their findings revealed that immigrants are assimilating into the larger culture but there are significant differences among first- and second-generation of immigrant students. The implication is that experts must not assume that all Latinos have similar affinity groups, agency orientation, and familial values. Thus, teacher preparation programs must understand and encompass the values of the sociocultural context. These authors recommend that teacher preparation programs explore issues of acculturation when recruiting and preparing Spanish - and non-Spanish-speaking teachers by employing acculturation measures as diagnostic tools.

Qualitative research perspectives. In this section, I review some of the relevant qualitative research studies, providing an overview of theoretical perspectives from the qualitative perspective that inform this mixed methods study. In line with the tradition of *Latino critical race theory* (LatCrit) and *testimonio* (testimony), Pérez Hubert (2009) investigated the experiences of 40 undocumented and U.S. born Chicana college students. Through this methodology, the researcher "deconstructs the Eurocentricity of traditional academic research and disrupts the apartheid of knowledge this Eurocentricity has helped to create" (p. 650). Citing Delgado Bernal and Villalpando (2002), Pérez Hubert (2009) explains how, historically, there have been racial divisions between dominant Eurocentric epistemologies that guide mainstream research and other ways of knowing, which are unacknowledged and pushed to the margins of the academy. According to this perspective, the research process has been used as a practice of

"othering" People of Color (Fine, 1994). These scholars argue that Eurocentric epistemological perspectives that have shaped academic research perpetuate dominant ideologies rooted in white superiority, which Frank (2013) calls *epistemic injustices*, subjugating research that challenges, counters or disrupts the mainstream. As a result, scholarship which draws from epistemological, theoretical, and methodological perspectives which honor sources of knowledge that exist outside of the academy and within *Communities of Color* is frequently devalued, delegitimized, and marginalized. Thus it is critical that researchers be aware of the epistemological underpinning of the ways research is planned, conducted and evaluated in the process of developing new forms of knowledge (Frank, 2013).

Gomez, Rodriguez, and Agosto (2008) draw on life-history methods to investigate the family, school, university, and teacher education experiences of three Latino teacher candidates attending a university in the Midwestern U. S. They found that these young men had a strong desire to make personal connections with youth and families they taught. However, in university social experiences as well as in teacher education classes and field experiences, these young men felt misinterpreted in interactions. These students described the ways in which they experienced prejudice and discrimination in every aspect of the teacher preparation program, (i.e., school field experiences, university classrooms, and social settings). The authors express the need for social action projects that are instantiated inside of teacher education programs so that students like these have the opportunity to practice the multiculturalism and social justice activities that are key elements of their commitment to the teaching profession, and advocated in their classes.

In another study, Valenciana, Weisman, and Flores (2006) employed open-ended questions on a survey, a focus group interview and participant observations to document the

perspectives of Latina paraeducators concerning the challenges and support systems they encountered in order to complete college and gain admission to a teacher certification program. Findings revealed that their challenges included a lack of knowledge about higher education, unresponsive institutional bureaucracies, and the need for financial aid. Family and a cohort group of peers were identified as important sources of support and motivation. The authors add that as a result of the struggles they experienced these paraeducators expressed a strong commitment to helping others to pursue academic and professional goals. As with the rest of the studies reviewed (e. g., Austin et al., 2010; Brochin Ceballos, 2012; Bonner et al., 2011; Ekiaka & Reeves, 2010; Flores et. al, 2008; Fránquíz, Salazar, & DeNicolo, 2012; Guerrero & Guerrero, 2009; Irizarry, 2011; Murillo, 2010, Smith & Murillo, 2012; Sutterby, Ayala, & Murillo, 2005) this work also highlights the need to critique and transform fundamental inequities within institutional structures that obstruct equal educational opportunities and hinder the recruitment and retention of bicultural teacher candidates in educator preparation programs.

Mixed methods research perspectives. Whereas some scholars have claimed that qualitative and quantitative methods are diametrically opposed to each other, recently many more researchers have argued in favor of “mixed methods” approaches to inquiry (Wiggins, 2011). In the area of bilingual education teacher preparation, the number of studies using a mixed methods design is growing. For example, Flores, Ek, and Sánchez (2011) conducted a sequential mixed methods study to investigate the ideologies of Latino bilingual teacher candidates enrolled at a South Texas Hispanic Serving Institution. The authors explain that: "*aspirantes* (teacher candidates) must not only be prepared to provide effective instruction in two languages; they must be perspicacious of the sociopolitical context of BLs (bilingual learners) and the political nature of becoming a bilingual teacher." (p. 42). Their findings revealed that

membership in linguistically and culturally marginalized communities frequently results in a teaching ideology inclined toward a social justice perspective. Teacher candidates may be more likely to see their own life experiences reflected in their students' stories, recognize their potential to become linguistic and cultural role models, and "embrace this calling with a deep desire to make a difference in students' lives." (Flores, et al., 2011, p. 53). Furthermore, these future bilingual teachers expressed cultural and linguistic pride, passion for learning in two languages, knowledge and skill in their first language, and participation in a learning community with shared values and beliefs.

A recent study that Irizarry & Donaldson (2012) conducted with three different groups of Latino students at different levels on the teaching pathway (high school students considering the teaching career, preservice teachers, and inservice teachers) revealed that their findings differ from the majority of studies that have involved White preservice or inservice teachers. These authors claim: "the teaching profession is composed largely of 'good girls' who had positive experiences in schools and entered the profession inspired by teachers with whom they have interacted" (Irizarry & Donaldson 2012, p. 167). In contrast, the participants in their study did not conform to that dominant narrative since the majority of their participants who were either Latino high school students or Latino preservice teachers were motivated primarily by a desire to rectify negative experiences in schools so that Latinos would fare better in the future. The authors conclude that the perspectives and experiences of Latinos differ significantly from the dominant narrative on teacher recruitment and retention, which is largely defined by White teachers' career histories. Moreover, they found that the factors that retained Latino participants in either the pipeline or the classroom were unique. Latinos in their study "persisted because of an *I won't quit* attitude" (Irizarry & Donaldson, 2012, p. 183) that enabled them to overcome a

host of obstacles to their pursuit of a teaching career and their continuation once in the classroom. These researchers state that perhaps because of this attitude, Latino teachers were significantly more likely than White teachers to remain in their low-income school placement and the majority of Latinos in the sample were also more likely than White teachers to remain in the profession overall. Irizarry and Donaldson (2012) claim that the findings of their study serve as an important race- and culture-conscious counter-narrative that can inform efforts to systematically diversify the teaching profession. They conclude:

The Latinization of the United States evidenced through population growth and the desire of Latinas/os to preserve and assert their identities in the face of significant pressures to assimilate, requires revised notions of national identity and nationhood. If youth are indeed the future of the country and that future is becoming 'browner' with each passing year, the education of Latina/o youth is a matter of national importance. The projected expansion of the Latina/o population and the persistent disheartening academic outcomes for this community, contrasted with the lack of racial/ethnic diversity of the teaching force, calls attention to the need for increased investments in the education of Latina/o youth. (p. 187).

This Latino identity preservation among university students enrolled in teacher preparation programs has also been identified by other researchers (Austin et al., 2011; Bonner et al, 2011; Delgado Bernal 1998). These investigators have found that engaging bilingual teacher candidates enrolled in university courses in practices connected with Latino school children creates *hybrid* spaces, also known as *third spaces*, where students and teachers freely communicate and express their identities (Palincsar & Ladewski, 2006) and these connections can also facilitate teaching and learning by connecting with the students' *funds of knowledge*, that

is, the intellectual and social knowledge existing among families and communities (González, Moll, & Amanti, 2005). Thus research suggests that colleges' programs of study, working in collaboration with schools and communities, can provide opportunities for Latino students to reflect on their social and political identities, revealing their fluid *latinidades* (Latino identity).

In sum, a common denominator in the research reviewed in this section is that Latino students pursuing a career in teacher education possess a bicultural identity that allows them to adapt to adverse external circumstances encountered in their journey, and as a result, when programs of study for future teachers are planned and implemented with attention to culture and context, these teacher candidates develop stronger, hybrid identities and become conscientious and caring teachers. Because the theoretical frameworks researchers select is based on important factors such as the epistemology and ontology associated with any particular method, in the following section, I provide an overview of the theoretical frameworks guiding this study: Self-efficacy theory, critical race theory (CRT), Latino critical race theory (LatCrit), and borderland cultural wealth (BCW).

Theoretical Frameworks

The use of standardized testing and the validity of the tests themselves, as well as their use as gatekeepers for future teachers has spawned research examining issues of self efficacy, social justice, and ethics in the processes and procedures mandated for teacher preparation (Barton, 2008; Jones et al, 2011). Understanding how educational expectations are shaped is important to comprehending how success can be fostered among Mexican American teacher candidates. Based on Bandura's (1970) theory that posits that learning is a process involving cognitive and social factors, I used a combination of conceptual frameworks that served as a lens to focus on the psychological (cognitive) and social aspects of my research analysis. I draw on

self-efficacy theory, critical race theory, Latino critical race theory (LatCrit), and borderland cultural wealth theory as theoretical frameworks for this research. Through the CRT and LatCrit lens, I examined how structural processes and institutional barriers may be the determinants of students' performance in teacher licensure exams, and from the perspective of self-efficacy theory, I analyzed how despite oppressive external circumstances such as poverty, some students academically succeed. In this section, I describe each one of these theories: Self-efficacy, Critical Race Theory (CRT), Latino Critical Race Theory (LatCrit), and Borderland Cultural Wealth (BCW).

Self-efficacy beliefs and personal agency. Self-efficacy may be defined as people's perception of their ability to plan and take action to reach a particular goal (Bandura, 1977). Since Bandura first introduced the construct of self-efficacy in 1977, researchers have been very successful in demonstrating that individuals' self-efficacy beliefs powerfully influence their attainments in diverse fields (Pajares, 2004). Self-efficacy beliefs are based on social cognitive theory that views students' achievement as resulting from interactions among personal factors, individual behaviors, and environmental conditions (Bandura, 1978, 1995). This is Bandura's conception of reciprocal determinism (Pajares, 1996). Pajares stresses the importance that Bandura places on personal agency: "Because personal agency is socially rooted and operates within sociocultural influences, individuals are viewed both as products and as producers of their own environments and of their social systems." (1996, p. 544).

Bandura's social cognitive theory of human functioning accords a central role to cognitive, vicarious, self-regulatory and self-reflective processes in human adaptation and change. Social cognitive theory is rooted in an agentic perspective. In this view, people are self-organizing, proactive, self-reflecting and self-regulating, not just reactive organisms shaped and

shepherded by environmental forces or driven by concealed inner impulses. Human functioning is the product of a dynamic interplay of personal, behavioral, and environmental influences.

(Pajares, 2004)

According to Bandura (1995), "good schooling fosters psychosocial growth that contributes to the quality of life beyond [the] vocational domain" (p. 17). He confirms the important role that teachers play on collective school efficacy by affirming that:

The task of creating environments conducive to learning rests heavily on the talents and self-efficacy of teachers. Evidence indicates that classroom atmospheres are partly determined by teachers' beliefs in their instructional efficacy. Teachers who believe strongly in their instructional efficacy create mastery experiences for their students.

(1995, p. 19).

Furthermore, Bandura states that teachers do not operate in isolation but rather interact collectively within social systems. To exemplify this point, he refers to tracking school systems (academic and vocational) and adds: "there are dropouts from apprenticeships ...the educationally detached youth who are marginally players in the system" (p. 22). Efficacy beliefs play a vital role in the development of self-directed life-long learners. "Students' belief in their capability to master academic activities affects their aspirations, level of interest in intellectual pursuits, academic accomplishments, and how well they prepare themselves for different occupational careers." (p. 17).

In the following two subsections, I present two theoretical frameworks that enhance the framework, expanding the framework from a focus on the individual (i.e., personal agency) to provide explanations about the linkages among education, race, language, ethnicity, culture,

political processes, and the borderlands as context. First, I discuss critical race theory (CRT)/LatCrit and then borderlands cultural wealth (BCW).

Critical race theory (CRT) and Latino critical race theory (LatCrit). Critical race theory (CRT) finds its historical roots in critical legal studies (CLS) which emerged when legal scholars began to challenge the limited way that issues of race, class, and gender were taught in law school and written about in law review journals (Ladson-Billings, 2009). Ladson-Billings explains that CLS takes its perspectives from social theories of Marx, Engels, Weber, Horkheimer, Marcuse, and others associated with the Frankfurt School. "It argues that the logic and structure of conventional law grew out of the power relationships of society and, as a consequence, the oppressed will never be well served by the law (Ladson-Billings, 2009, p. 181).

One of the recent extensions of CRT is a framework that highlights the lived experience of Latinos, Latino Critical Race Theory (LatCrit). According to Fránquiz et al. (2012), LatCrit informs CRT because of its interrogation of how language, culture, and nation[ality] are closely related and it "examines racialized layers of subordination based on immigration status, sexuality, phenotype, accent, and surname" (Yosso, 2009, p. 662-663). LatCrit theorists work on the premise that racism is not always about race but it is always about power systems (Fránquiz et al., 2012).

Researchers using CRT contend that CRT and LatCrit explore the ways that so-called race-neutral laws and policies perpetuate racial and/or ethnic and gender subordination (e.g., Delgado Bernal, 1998, 2001, 2002). They emphasize the importance of viewing laws and lawmaking within the proper historical and cultural context to deconstruct their racialized content (Fránquiz et al., 2012). These frameworks challenge dominant liberal ideas such as

colorblindness and meritocracy and show how these ideas operate to disadvantage students of color and further advantage Whites (Ladson-Billings & Tate, 2006).

Within a LatCrit framework, Chapman (2011) examined how educational structures, educational processes, and educational discourse function to maintain racism, sexism, and classism. This author states that it is not accidental that many departments that struggle with low status in universities, such as "schools of education [which] have always held a precarious, powerless position in universities and colleges" (p. 243), are also departments with high numbers of black and brown scholars and women. This author adds that structural policies that regulate the design of teacher preparation programs inhibit working-class students, first-generation students, and low-income students from enrolling in teacher education programs. For example, one aspect that prevents nontraditional (e.g., older, heads of household, single parents with small children) working students from completing their teacher certification is student teaching (field experience) because a large number of them cannot afford to stop working. Thus, these circumstances may explain why the majority of the pre-service teaching population in the US is White and middle class. In the next subsection, I discuss Borderland Wealth Culture and its origins.

Borderland Cultural Wealth. Drawing upon an integrated Chicana feminist theory (Anzaldúa, 1999; Fránquiz & Salazar, 2004) and a community wealth (Yosso, 2005, 2006, 2009) lens; Yamamura, Martínez, and Saenz (2010) conceptualized borderland cultural wealth (BCW) as a hybrid framework. They defined it as "the cultural assets present in this region (border) that when cultivated and tapped into effectively can improve college preparation and access" (pp. 127-128).

The U.S. México border region has been closely associated with the concept of borderlands (Elenes, 2011). This scholar affirms: "For Chicanas and Chicanos, the Borderlands are an important region because they encompass territory that either was part [of] or is near Mexico". (p. 23). The borderlands is conceptualized not only as a geo-political region but also a metaphor for psychological, sexual, and spiritual borderlands (Anzaldúa, 1999). Elenes (2011) concurs with Vila (2000) and Anzaldúa (1999) on the idea that border identities and cultures are multiple and in a constant process of redefinition, resistance, and accommodation. Anzaldúa (2002, cited in Elenes, 2011) proposed that "Nepantla (Náhuatl for a state of in-between) might be a better way to conceptualize her epistemology and ontology than borderlands" (p. 41).

Through a lens that focuses on the cultural richness, including Spanish literacies, of border people (Smith & Valenzuela, 2012), educators and researchers can start to understand the immense assets that Latino, particularly transnational Mexican American students, possess and start to deconstruct hegemonic White epistemologies.

Summary

We have seen in this review that Latinos who desire to become bilingual education teachers in the U.S. have a uniquely complex and daunting task before them as they struggle to navigate the historical, cultural, socioeconomic, political, and institutional barriers on their pathway to the teaching profession. These barriers have a long established history—deeply rooted in racism, sexism, and classism. The social construction of race and race relations in the United States was founded upon the early European capitalist system of the colonies (Foley, 2010; Zinn, 2001). This capitalist system – orchestrated by the White, male, landowners – shaped political, social, and economic realities, which, in turn, influenced the purpose and design of educational institutions in the U.S. By design, these institutions supported the subjugation and

discrimination of Natives, Africans, Mexicans and other non-Whites not only in practice but also in formal policy.

Still today, mainstream social, governmental, and educational institutions continue to discount and silence the voices and perspectives of diverse populations (Darder, 2011; Elenes, 2011; Valenciana, et al., 2006; Valenzuela, 2005). While in theory the U.S. public education system is a place for equal opportunity for all children, underlying vestiges of racism based on deficit and hegemonic perspectives continue to shape policy and practice regarding diverse students at every level K-16 (Delgado Bernal, 2002; Ladson Billings, 1998; Ladson-Billings & Tate, 2006). The collective experience of students of color in U.S. educational institutions is complex and varied, yet the literature speaks to overarching factors that significantly impact Latino student outcomes, such as the quality and cultural competency of teachers and the social and cultural climate of schools.

As demonstrated by research on Latino bilingual teacher education and the rapid growth of the Latino student population in the U.S., particularly on the U.S.-Mexico border where there is a large concentration of Mexican immigrants, there is an urgent and critical need to continue to address the academic challenges and needs of Mexican American bilingual students through policies informed by research and framed by theories that challenge the dominant White ideology that has left many students of color behind (Valenzuela, 2005). In addition, I discussed the conceptual frameworks that served as a lens to focus on the psychological (cognitive) and social aspects of my research analysis, drawing on self-efficacy theory, critical race theory, Latino critical race theory (LatCrit), and Borderland Cultural Wealth as theoretical frameworks for this research.

In the next chapter I present the methodology employed in this research study.

Chapter 3

Methodology

The purpose of this mixed method study of Mexican American bilingual teacher candidates attending a selected HSI on the U.S.-Mexico border was twofold: First, to examine factors that predict Latino students' success on standardized certification examinations; and second, to develop a deeper understanding about the complex web of issues related to the experiences of bilingual Latino students preparing to become certified teachers, from the students' perspectives. The purpose of this chapter is to describe the methodologies used in this dissertation to generate new knowledge relevant to the research topic.

The rationale for a mixed methods approach was to expand scholars' and practitioners' understanding of the teacher preparation program and state-mandated teacher certification processes of a selected group of bilingual Mexican American teachers and teacher candidates who graduated from Border University, a Hispanic serving institution (HSI), located on the Texas-Mexico border. Specifically, the mixed methods study focused on two distinct approaches, with overlapping and integrative goals. First, the quantitative component of the study sought to test a predictive model of performance on the state mandated teacher licensure exams for bilingual teachers and secondly, the qualitative approach aimed to provide a deeper level of understanding about how a group of Mexican American bilingual teacher candidates and recent graduates from a teacher education program in Texas described their experiences and perceptions of the processes involved in becoming a highly qualified teacher (HQT) in Texas (TEA, 2012). This chapter is organized as follows: First, I present a general overview of the research design; secondly, the quantitative and qualitative phases of the research design are introduced separately,

elaborating on the instruments, variables, data collection, and data analysis; and in the last section, an explanation of the integration of the quantitative and qualitative methods is provided.

The Pilot Studies

Prior to conducting this mixed method research study, in spring semester 2012, I conducted two separate pilot studies at the same university, one quantitative and one qualitative. The intent of these two pilot studies was to determine the feasibility of conducting mixed methods research on this topic in relation to the following issues: (a) determining the appropriate number of participants for each phase, (b) developing clarity in relation to language used in the data collection instruments (c) gauging approximate timing and sequencing needed for the interviews, (d) suitability of study methods and design, and (e) approximate time needed to complete the entire study. After ensuring that these pilot studies met all standards of ethics as required by the university's institutional review board (IRB), two pilot studies were conducted. The quantitative pilot study included university archived data of test records of students who had graduated with a Bachelor's Degree in Interdisciplinary Studies (BIS). A regression model was developed using archived data from students who graduated in December of 2008 with a BIS in the different concentration areas for school grades from early childhood to 8th grade (EC-8). The outcome variable was the TExES PPR exam scores and THEA Reading and Math scores, SAT Verbal and Math scores as predictor variables. The regression model was statistically significant ($R^2 = .30$) while THEA Reading scores and SAT Math were significant predictors in the model. The results from this study were used to determine the probability of obtaining statistically significant results using this type of predicted and outcome variables and also to determine the number of records needed to develop a more powerful regression model.

Along the same vein, I conducted a pilot qualitative study with four teacher candidates to explore their perspectives and experiences in the teacher preparation program. The main themes emerging from in depth qualitative data painted a picture of how students construct meaning, develop alternative supportive systems, and achieve their goals, even within a high-stakes accountability system that belies the role of culture, language, and funds of knowledge (González, Moll, & Amanti, 2005) that these students possess. The key themes from students' narrative described the centrality of: bicultural identity (identification with the Mexican culture and Spanish language), strong social networks for supports, and a powerful sense of agency (i.e., inspiration to become teachers by a desire to create a positive public school environment). The feedback gained from the qualitative pilot study was used to revise the initial interview questions and to determine the approximate time needed for each interview. In the mixed methods study, the interview questions were modified and reorganized to be consistent with the research question. Following the modification of interview questions, I calculated that the interviews would take from 45 minutes to one hour. Overall, the two pilot studies helped me gain knowledge and experience relating to significant areas of the mixed methods research project such as study design, data collection and analysis, interpreting and writing findings, and drawing conclusions.

Research Design

According to researchers (Alexander, 2006; Creswell, 2003; Lincoln & Guba, 2005), a study design is determined by its philosophical foundations. It is also affirmed that the selection of a specific research paradigm is determined by the value, beliefs, and philosophy of the researcher (Denzin & Lincoln, 2011). *Paradigms* may be defined as the worldviews or belief systems that guide researchers (Lincoln & Guba, 2005). It has now been widely accepted within

the research community that science is not value free and is influenced by the investigator's philosophy. As Greene (2012) asserts, the lenses and stances of the knowledge about social issues that a human inquirer generates is to some degree affected by her/his lenses and stances.

Elaborating on this point, Greene (2007) explained:

Social inquiry begins with a substantive intention or purpose and a substantive set of questions. Methodology is ever the servant of purpose, never the master. Thus, learning the key issues associated with any particular research approach is important when planning the design of a study. And because mixed methods purposes are about methodology, it is critical to think about identifying and selecting the reasons for mixing methods in service to the broader substantive purpose and questions being pursued in the study. (p. 97).

Moreover, the rationale for using this mixed method design was that "neither qualitative nor quantitative methods are sufficient, by themselves, to capture the trends and details of a situation" (Teddle & Tashakkori, 2009, p. 29). When used in combination, quantitative and qualitative methods complement each other and allow for a more robust analysis, taking advantage of the strengths of each, and "mixed methods provide the opportunity for presenting a greater diversity of divergent views" (Tashakkori & Teddle, 2003, p. 15). Leech and Onwuegbuzie (2009) define mixed methods as "research that involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon" (p. 267).

For the purposes of this study, a complementary mix of methods was utilized. "With this purpose, a mixed method study seeks broader, deeper, and more comprehensive social understandings by using methods that tap into different facets or dimensions of *the same complex*

phenomenon” (Greene, 2007, p. 101). Specifically, the purpose of this study was to explore at the macro and micro levels the bilingual teacher licensure process for Mexican Americans who graduate from a traditional teacher preparation program at a HSI located on the Texas-México border. At the macro level, this examination included the testing of predictive models that could possibly explain which variables were associated with successful teacher licensure benchmarks throughout a traditional (i.e., undergraduate) teacher education program (including, for example, admission to the university, teacher candidacy, student teaching, or graduation and certification). At the micro and deeper level (Geertz, 1973), this study sought to explore the perceptions and experiences of a selected group of bilingual Mexican Americans who had gone through the teacher preparation program and met the following criteria: graduated from Border University in academic years from 2010 to 2013 with a bachelor’s degree in Interdisciplinary Studies and a specialization in Bilingual Education and had taken the Texas certification exams at least once. To accomplish this critical task, I followed a sequential mixed methods design (Teddle & Tashakkori, 2009). This research design involved two methods of data collection and analysis.

Researchers conducting mixed methods studies, rather than using a single lens, are able to employ quantitative and qualitative techniques as a "pragmatist lens" (Onwuegbuzie & Leech, 2004, p. 771), allowing them to conduct studies at the macro and micro levels. Pragmatism may be viewed both as a general belief system for the social sciences and as a specific justification for combining quantitative and qualitative methods (Johnson & Onwuegbuzie, 2006). Some researchers argue (Alexander, 2006; Morgan, 2008) that pragmatism may offer a promising way out of the false dichotomies that have so often characterized the debate between quantitative and qualitative approaches. These authors coincide in the reasons for pragmatism to emerge as an alternative philosophical orientation and explain that perhaps the problems with both post-

positivism and phenomenology originate in just such a naive distinction between theory and practice— description and prescription—that cannot withstand criticism. Tashakkori and Teddlie (2003) defined pragmatism as:

A deconstructive paradigm that debunks concepts such as “truth” and “reality” and focuses instead on “what works” as the truth regarding the research questions under investigation. Pragmatism rejects the either/or choices associated with the paradigm wars, advocates for the use of mixed methods in research, and acknowledges that the values of the researcher play a large role in interpretation of results. (p. 713).

Thus, based then on the broad purpose of this study and on the research questions guiding it, the utilization of a mixed methods approach was justified. The research questions were:

- 1) How are GPA, SAT, THEA, and Qualifying Test scores of future Mexican American bilingual teachers correlated?
- 2) To what extent do these variables predict the performance of these bilingual teacher candidates on state-mandated high-stakes certification tests (TExES)?
- 3) How do Mexican American college students attending a Hispanic-Serving Institution (HSI) on the U.S.-México border describe their experiences of navigating the pathway to becoming "highly qualified" teachers?
- 4) To what extent does the combination of quantitative and qualitative findings generate new knowledge and lead to new insights about the bilingual teacher certification process for Mexican Americans?
 - a) What do the quantitative data tell us about the qualitative data?
 - b) What do the qualitative data tell us about the quantitative data?

These questions emerged from my philosophical, epistemological, and ideological stance of engaging in a sustained and respectful dialogue with diverse perspectives, including social inquiry methodologies (Greene, 2007). As this author asserts, “a mixed methods way of thinking actively engages with epistemological differences in order to respect multiple ways of knowing” (p. 27). Greene (2007) maintains that tensions can be reframed from highly abstract philosophical stances, such as subjectivism and objectivism to less irreconcilable and more concrete characteristics of social inquiry, “such as particularity and generality, closeness and distance, the unusual and the representative” (p. 27).

A mixed-methods sequential design was utilized in this study. It consisted of two distinct phases: quantitative followed by qualitative (Creswell, 2003). In this design, a researcher first collects and analyzes the quantitative (numeric) data. The qualitative (text) data are collected and analyzed second in the sequence and help explain, or elaborate on, the quantitative results obtained in the first phase. The final inferences “are based on the results of both strands of the study” (Teddlie & Tashakkori, 2009, p. 153). In this study, the qualitative data and their analysis refined and explained the statistical results by exploring participants’ views in more depth. Teddlie and Tashakkori (2009) explain that the limitations of this design are time and availability of resources to collect and analyze both types of data. Notwithstanding these limitations, based on the nature of the research questions this study sought to answer, both quantitative and qualitative paradigms were justified (Mertens, 2010).

The quantitative (QUAN) method involved a statistical analysis of the inter-correlations of specific variables: SAT scores, GPA, THEA Reading scores, and qualifying exam scores, and the effect those variables had on three outcome variables (Pedagogy and Professional Responsibilities, Bilingual Generalist Spanish EC-4, EC-6, 4-8, and Bilingual Target Language Proficiency [BTLTP] TExES exams). Research has shown that these variables are correlated with

licensure test performance of Hispanics and African Americans (Gitomer et al., 2011; Jones et al., 2011; Poelzer, Zeng, & Simonsson, 2007; Pohan & Ward, 2011). The development of a predictive model could help to provide valuable information on possible challenges that may be encountered at different stages of a student's program. This information or model was based on a statistical analysis of factors that contribute to the variables that predict students' success in passing bilingual education TExES tests in the process of gaining state certification.

The qualitative (QUAL) component explored the perceptions and the experiences, in relation to the teacher preparation program and certification process, of a group of Mexican American bilingual students who had completed the licensure process or were in the process of completing it. This phase included individual interviews of the selected participant group of bilingual teacher candidates and bilingual teachers who attended the university study site. The participants had personal knowledge and experience with the different aspects of the teacher preparation program and certification process. Subsequently, inferences based from each strand were integrated to form *meta-inferences* at the end of the study. According to Teddlie and Tashakkori (2011), "a meta-inference is a conclusion generated through an integration of the inferences that have been obtained from the results of the QUAL and QUAN strands of a mixed methods study." (p. 152). Figure 3.1 depicts the model developed to design and implement the mixed methods study.

Model for Mixed Methods Sequential Design

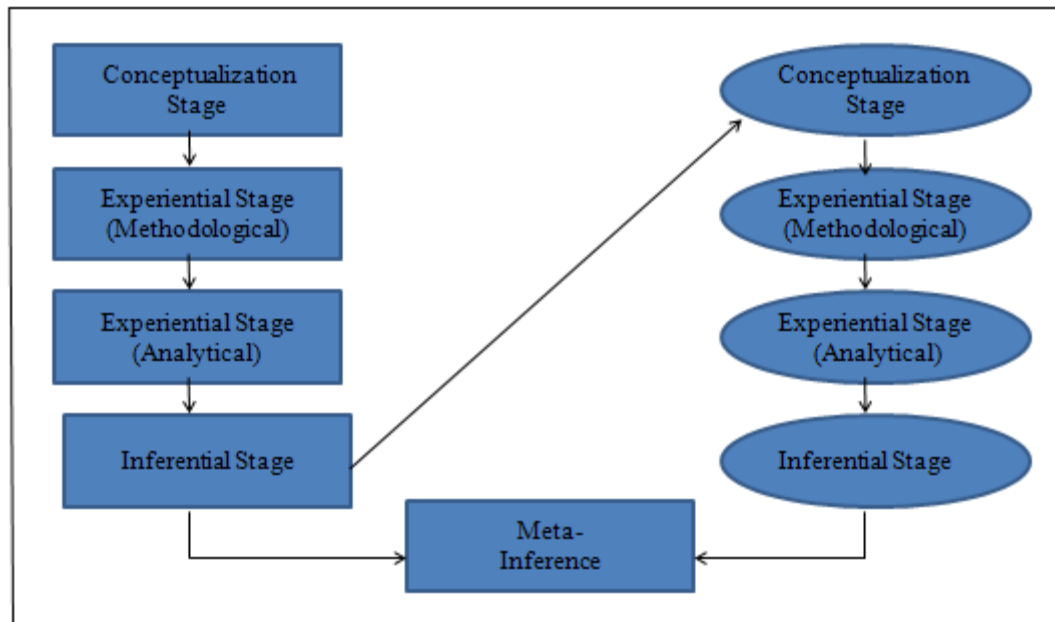


Figure 3.1. Graphic illustration of Sequential Mixed Designs. (Adapted from Teddlie and Tashakkori, 2011, p. 154)

Quantitative Paradigm

Quantitative research is associated with the belief that objective reality exists, it can be measured, and that it is the researcher's task to define and describe that reality; thus this approach to inquiry is deductive and theory-driven (Krathwohl, 2009). The quantitative paradigm is based on *positivism* which had its origins in the nineteenth century with the French philosopher August Comte (Plano-Clark & Creswell, 2008). Disagreements with the *axioms* (principles) of positivism became increasingly widespread throughout the social and behavioral sciences during the 1950s and 1960's giving rise to *postpositivism*. Lincoln and Guba (2005) have noted that postpositivism is the intellectual heir to positivism and many of its principles were opposed to positivism. As examples, Tashakkori & Teddlie, 2008, p. 12) list these values:

- *Value-ladenness of inquiry*: Research influenced by the values of investigators.
- *Theory ladenness of facts*: Research is influenced by the theory, hypotheses, or framework of investigators.
- *Nature of reality*: Our understanding of reality is constructed.

According to Tashakkori and Teddlie (2008), these postpositivist tenets are currently shared by both quantitatively and qualitatively oriented researchers because they better reflect common realities.

Participants. The quantitative phase on this study utilized secondary data extracted from university records of students who graduated with a Bachelor of Interdisciplinary Studies, Bilingual Education specialization in academic years 2009, 2010 and 2011. After the study proposal was approved by the university's Institutional Review Board (IRB), the university's College of Education and the Center for Institutional Research, Evaluation, and Planning (CIERP) provided the student records. All identifying information such as names, student identification numbers, and social security numbers were removed from the reports and replaced with unique case numbers. In this manner, individual scores and data were matched across the study variables.

A total of 2,460 TExES records corresponding to 564 students were obtained for the three academic years. The reason for the 2,460 records was that each one of the 564 students had more than one test record. That is, every student in the sample had multiple test records representing every test taken (i.e., PPR, Bilingual Education, and BTLPT). Additionally because there are no limits as to the number of times students can take a test prior to passing it, some students had records for multiple attempts on the same exam. For the purposes of this study, only the highest score for every test taken (THEA, Qualifying Exams, and TExES) was analyzed. Because 46

records for the certification (TExES) exams were missing, the sample size for the first parts of the analyses, (descriptive and correlation) was reduced to $n = 518$.

Instruments/Measures. The following instruments or variables were part of this study:

- **Qualifying Exams.** These were practice tests taken prior to teacher certification exams and were used as a requirement for teacher candidates' graduation at Border University during the period of time under study. The test questions are based on prior, released versions of the state-mandated teacher licensure tests.
- **Scholastic Assessment Tests (SAT).** These are a set of standardized tests that assess the subject matter learned by students in high school and how well they apply that knowledge. The test assesses thinking and problem solving skills in three areas: critical reading, mathematics, and writing. It includes three kinds of questions; multiple-choice questions, student –produced responses (mathematics only), and an essay question. The test is machine scored except for the essay. Each section of the test is scored on a scale of 200-800, with two writing sub-scores for multiple-choice questions and the essay (College Board). According to a recent College Board report (Shaw et al., 2012), the validity of the SAT scores in predicting second-year college GPA varied "somewhat", depending on college major, race, ethnicity, gender, and parental education level (p. 5). The validity is compromised when research contradicts its predictive validity in relation to college success (Angrist & Guryan, 2007). Other research has linked SAT scores with socioeconomic status (Zwick, 2002). Although minimum SAT scores are part of admission requirements at some universities, this test is not necessarily an entrance

requirement for all Border University students. For example, if a student graduated in the top 25% of their class, SAT minimum scores are not required, but scores must be submitted (Border University Catalog, 2012-2013).

- Texas Higher Education Assessment (THEA). This test's purpose is to assess the reading, mathematics, and writing skills that entering freshman-level college students should have if they are to perform effectively in undergraduate certificate or degree programs in Texas public colleges or universities. Numeric measures of the test instrument's validity and reliability are not reported in the THEA (2008) faculty manual. Instead, the following statement appears in the section about validity: "After Evaluation Systems completed its revision of the test questions, the various committees of Texas educators reviewed the questions again and provided information for use by the THECB [Texas Higher Education Coordinating Board] and the State Board of Education in setting the final passing standards for the tests" (p.2). This statement is insufficient to conclude that these tests are reliable and valid predictors of success in teacher education programs. Passing the THEA tests is one of the requirements to be admitted to the teacher education program at Border University. However, research (Valdés, 2004; Valdés & Geoffrion-Vinci, 1998; Valenzuela, 2005) has demonstrated that basic skills tests, especially reading and writing, may disproportionately disadvantage minority students whose education and socioeconomic background are often different from the mainstream (as students of color have not had access to a high quality education).
- TExES Pedagogy and Professional Responsibilities (PPR) exam (194). This test is one of the two Texas Examinations of Educator Standards (TExES) tests that educators must take in order to be certified to teach in Texas. The State Board of Educator Certification

(SBEC) regulates educator standards which are based on the state-required curriculum for students (TEA, 2011, p. 2). TExES test scores are reported as a score in the range of 100-300, with a total test scaled score of 240 as the minimum passing score. The test framework outlines the specific competencies to be measured on the test; it is based on the educator standards for that particular field.

- TExES. Bilingual Generalist EC-6 Exam (192), EC-4 (103), and 4-8 (119). These tests are designed to assess whether an examinee has the requisite knowledge and skills that an entry-level educator in this field in Texas public schools must possess. The 200 multiple-choice questions are based on the Bilingual Generalist EC-4, EC-6, and 4-8 test frameworks. Questions on this test range from grades EC-6. The test may contain questions that do not count toward the final official student score on the certification test. Due to changes in the test format of the TExES Bilingual Generalist exams in 2009 by SBEC/TEA, students taking these exams have taken different versions of this test from 2009 to 2011. The content of a TExES test is organized into broad areas of content called *domains*. Each domain covers one or more of the educator standards for that field. Within each domain, the content is further defined by a set of *competencies*. Each competency is composed of two major parts: The *competency statement*, which broadly defines what an entry-level educator in this field in Texas public schools should know and be able to do, and the *descriptive statements*, which describe in greater detail the knowledge and skills eligible for testing.
- TExES Texas Oral Proficiency Test (TOPT) Spanish (081). Test questions were written to represent the speaking tasks that were deemed appropriate. Oral proficiency was assessed by having candidates record their responses to specific speaking tasks on an

audio tape. This test was discontinued in 2011 and was replaced by the bilingual target language proficiency test (BTLPT).

- TExES Bilingual Target Language Proficiency Test (BTLPT) Spanish (190). This test is designed to assess whether an examinee has the requisite knowledge and skills that an entry-level educator in this field in Texas public schools must possess. It consists of 84 multiple-choice questions and seven constructed-response tasks. The test may contain questions that do not count toward the score. Four competencies are measured in this exam: (1) listening comprehension, (2) reading comprehension, (3) oral expression, and (4) written expression.

The validity of criterion referenced tests such as TExES and Praxis II (teacher certification tests) as predictors of teacher effectiveness is questionable as research has not demonstrated a link between test performance and teacher quality (Angrist & Guryan, 2007). With respect to basic skills tests such as the THEA and Praxis I (basic skills test), the data in Gitomer et al.'s (2011) study support the idea that poor P-12 preparation is the main cause for poor basic skills performance. Thus, students who struggle with basic skills struggle on licensure exams and have a smaller probability of becoming highly qualified teachers.

Variables. In the multiple regression analysis, the predictor variables or independent variables (IVs) were:

- THEA Reading (THER) scores. Because there is no limit on the number of times students take the tests, the highest score of total number of test-taking attempts was used.
- SAT scores (verbal and mathematics).

- Qualifying exam (QUAL) scores (the highest score of test-taking attempts).
- Final Cumulative GPA.

The dependent variables (DVs) predicted or criterion variables were based on TExES scores:

- Pedagogy and Professional Responsibilities (PPR) score (the highest score of test-taking attempts).
- Bilingual Generalist Spanish (EC-4, EC-6, 4-8) scores (the highest score of test-taking attempts).
- Bilingual Target Language Proficiency Test (BTLPT) score (the highest score of test-taking attempts).

Statistical Data Analysis. The Statistical Package for the Social Sciences (SPSS, version 19) was used to conduct the statistical analyses. The following statistics were calculated:

- Descriptive statistics for students' demographics (gender, age, and ethnicity) and all study variables.
- Correlation - The Pearson product-moment correlation coefficient (r). According to Hinkle, Wiersma, and Jurs (2003), the correlation coefficient is an "index that describes the extent to which two sets of data are related; it is the measure of the relationship between two variables" (p. 98).
- Simultaneous or standard multiple regression analyses. In this model, all IVs enter into the regression equation at once; each one is assessed as if it had entered the regression after all other IVs had entered. That is, "each IV is evaluated in terms of what it adds to prediction of the DV that is different from the predictability afforded by all other IVs" (Tabachnick & Fidell, 1996, p. 149). Thus, the resulting three prediction models looked like this:

$$Y_1' = A + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

where Y_1' is the predicted value of one of the DV (i.e., PPR score), A is the value of Y_1' when all X s are zero (Y-intercept), β_1 to β_k represent standardized coefficients, and X_1 to X_k represent the IVs.

Statistical Assumptions. The use of multiple regression analysis involves the following four assumptions (Mertler & Vannatta, 2005): First, the DV is a linear function of the IVs. This means that increasing or decreasing one variable (X) will cause a corresponding increase or decrease in the other variable (Y). Second, variables have normal distributions. Third, IVs and DVs are accurately measured; and fourth, the errors (residuals) are normally distributed. Residual is the difference between the actual value of a dependent variable (DV) and the value of variable that was predicted by a statistical model.

Reliability and validity. In quantitative research, reliability is defined as evidence that test scores or an instrument will consistently measure the construct in question and validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure (Krathwol, 2009). The reliability and internal validity of the instruments used in the regression analysis are discussed in this chapter in the Instruments subsection. According to Howell et al. (1994), researchers should be concerned with both *external* and *internal* validity. External validity refers to the extent to which the results of a study are generalizable or transferable. Internal validity refers to the rigor with which the study was conducted (e.g., the study's design, the care taken to conduct measurements, and decisions concerning what was and wasn't measured). In terms of generalizability or external validity of this research, the results of this study were not intended to be generalized to all Hispanic or all Mexican American teacher candidates. However, based on similar student population

characteristics, such as high percentage of Mexican American and first-generation college goers in border towns in Texas and California public universities, a high likelihood of applicability of results is possible.

Ethics. Because the quantitative phase of this study involved the data collection and analysis of archived secondary data, this phase was exempted by the university's review board. However, ethical concerns regarding the confidentiality of the data were addressed by protecting the data and running the statistical reports using password protected computers. Paper generated reports were kept in a locked desk drawer located in the college of education building. In addition, to protect the privacy of the students, the students' names and identifying information, such as school ID numbers, were deleted from the data bases and substituted with case numbers.

In this section, I have presented the methodology employed in the first phase, the quantitative component of this mixed methods study. The next section discusses the qualitative paradigm and methods used.

Qualitative Paradigm

In this study the qualitative strand sought to uncover the meanings behind the numbers by listening to the voices of Latina/o teachers as Irizarry (2011) eloquently illustrates:

To more effectively address the experiences and outcomes for all Latino/a undergraduates, it is imperative that we also examine their experiences... Moreover, these examinations should also move beyond general statistical portraits to more contextualized understandings of the experiences of Latino/a students. Although national statistics provide important information, more specific and personal stories, situated in

specific contexts, are necessary to advance the conversation and to deepen our understanding and appreciation of those circumstances being faced by Latino students (p. 2809).

Denzin and Lincoln (2011) note that the term qualitative research is surrounded by a complex, interconnected family of terms, concepts, and assumptions. There are separate and detailed literatures on the many methods and approaches that fall under the category of qualitative research. Creswell (2007) identified five approaches: narrative research, phenomenology, grounded theory, ethnography, and case study. Merriam (2002) explains that qualitative researchers are interested in understanding how individuals experience and interact with their social world and the interpretation and meaning they assigned to it. This is considered an interpretive qualitative approach (p.4). Bogdan and Biklen (2010), explain that interpretation is not an autonomous act, nor is it determined by any particular force, human or otherwise. Individuals interpret with the help of others but others do not do it for them. The individual constructs meaning through interaction.

According to Merriam (2002), qualitative research is designed to: (1) understand processes, (2) describe poorly understood phenomena, (3) understand differences between stated and implemented policies or theories, and (4) discover unspecified contextual variables. Describing the purposes of qualitative research, Donmoyer (2006) identifies five meta-purposes: (a) truth seeking, (b) thick description, (c) developmental, (d) personal essay, and (e) social change. Eloquently summarizing his argument, Donmoyer noted: "Education is, ultimately, a public policy field and ... public policy fields require that issues be examined from multiple perspectives and decided by considering different, and, at times, even contradictory criteria". (p. 30).

Participants. Participant selection was based on *purposive sampling*. Purposive sampling is defined as samples assembled by intentionally seeking individuals or situations likely to yield new instances and greater understanding of a dimension or concept of interest (Krathwohl, 2009). In addition, Teddlie and Yu (2007) explain that “purposive sampling techniques are primarily used in qualitative studies and may be defined as selecting units (e.g., individuals, groups of individuals, institutions) “based on specific purposes associated with answering a research study’s questions” (p. 77). Furthermore, purposive sampling leads to greater depth of information from a smaller number of carefully selected cases (Patton, 2002). Participants were selected based on the following criteria: 1) self-identification as Mexican American, Hispanic, or Latina/o; 2) completed a Bachelor of Interdisciplinary Studies degree at Border University within the last four years; and 3) took the Bilingual Generalist certification exams during the last three years (2010 to 2013). These were the first three factors utilized in the initial screening. Because of my work as Graduate Research Associate in the College of Education as a tutor, mentor, advisor, and teacher assistant, I had developed rapport with a number of students and continuous access to the population of teacher candidates. The initial screening of participants consisted of a continual process of reviewing field notes summarizing highlights of many informal conversations with potential participants. Based on these initial screening procedures, I compiled a list of approximately 20 potential participants. Because in a sequential mixed methods design “at least two strands occur chronologically (QUAN → QUAL)” (Teddlie & Tashakkori, 2011, p. 153), the findings of the QUAN results lead to the formulation of the selection criteria for participants in the QUAL strand. Thus, the selection of participants was finalized after the regression analyses were completed. In the mixed methods section of this chapter, I explain in detail the rationale for the additional criteria used in the selection process.

The six selected participants consisted of five females and one male between the ages of 22 and 38. All of them were Spanish native speakers and had learned English in U.S. schools. Two of them were born in the US and four were first generation immigrants from Mexico. Table 3.1 presents some demographic characteristics of the participants.

Table 3.1

Demographic Characteristics of Participants

Pseudonym	Birth Place	Age	Grade Entered U.S. Schools	ESOL Support	Marital Status	Started at Community College	# Times Took TExES	Teacher Certified
Ana	Mexico	38	7	Yes	Married 3 Children	Yes	Pedagogy = 1 Content = 1 Spanish = 1	Yes
Blanca	Mexico	36	13	Yes	Divorced 2 Children	Yes	Pedagogy = 1 Content = 3 Spanish = 1	No
Carlos	Mexico	28	2	Yes	Single	Yes	Pedagogy > 3 Content > 3 Spanish = 2	No
Delia	Mexico	26	K	Yes	Single	Yes	Pedagogy = 1 Content > 2 Spanish = 1	Yes
Elena	US	24	K	Yes	Single	No	Pedagogy = 1 Content = 2 Spanish = 1	Yes
Felicia	US	22	K	Yes	Single	No	Pedagogy = 1 Content = 1 Spanish = 2	Yes

Interviews. The primary method of data collection consisted of face-to-face, semi-structured interviews. Bogdan and Biklen (2007) define semi-structured interviews as “interviews in which the same general questions or topics are brought up to each of the subjects involved” (p. 275). Following Yin’s (2014) recommendation for a preliminary study, I had

previously conducted two pilot (quantitative and qualitative) studies with the aim of developing, testing, and refining data collection plans and developing relevant lines of questions (see section 3.2). The developed interview guide is presented in Appendix B. In addition to these planned questions, other interview questions emerged from the results of the quantitative phase of the study. Because the quantitative results revealed that the THEA Reading and SAT scores were significant predictors of performance in the TExES PPR and Generalist Bilingual exams, for example, I prompted the students to talk about their schooling, and in particular, to narrate their experiences with these tests. A list of questions is presented below in the mixed methods section of this chapter.

The face-to-face interviews took place from March 2013 to July 2013. Every participant was interviewed twice. The majority of the interviews took place in university classrooms on dates and times that suited the informants. However, based on participants' convenience, on a few occasions we met at a neighborhood cafe. Independently of the meeting site, safeguarding privacy and confidentiality were at all times a priority for the researcher. I interviewed the six participants during the spring and summer semesters of 2013.

At the beginning of the first interview, I explained the purpose of the study and reviewed the consent form (see Appendix C) with every informant. The length of interviews ranged from 45 to 90 minutes. The interviews were audio-taped using a digital voice recorder. I transcribed the recording files using a sound organizer software program. Transcripts were returned to informants through email for any deletions or modifications the informants wished to make. In addition, when clarification of information was needed, communication took place through email correspondence or by telephone.

Although the interview questions were presented in English, participants were given the

opportunity to move between English and their native language, Spanish, so they could freely express their thoughts and feelings. Four of the participants responded in both Spanish and in English throughout the interviews. Our common linguistic and cultural heritage facilitated open and candid communication exchanges. The interview guiding questions are presented in Appendix B. In addition to the interviews, field notes, observations, and researcher and reflection journals became part of the collected data.

Field notes. Field notes “are accounts describing experiences and observations the researcher has made while participating in an intense and involved manner” (Emerson, Fretz, & Shaw, 1995, pp. 4-5). As these authors assert, my field notes involving my descriptions of my fieldwork during the course of this study did not aim for “accuracy” because these accounts involved my own perception and interpretation of the situations and events. I employed my field notes in conjunction with the transcribed interviews to make sense of my participants’ narratives and to find common or recurring themes to form. For example, when one of them referred to the test preparation review session, I knew the format and the different types of workshops being offered because I had attended some of the sessions.

Observations. Merriam (2002) maintains that “observational data represent a firsthand encounter with the phenomenon of interest rather than a secondhand account obtained in an interview” (p. 13). During the course of my research, I had different opportunities to observe my participants not only during the course of the interviews but also taking classes, receiving advising, attending testing preparation workshops, and throughout the course of informal conversations. During the course of my observations, I was always a very active participant since I was also working in the college of education. A very active participant observer might be

someone who is a member of the group of organization (Merriam, 2002). Thus, these observations and my own lived experience became part of the field notes I wrote.

Reflection journals. My reflection journal involved the process of writing notes and memos of my reflections –internal dialogues –in relation to the different phases of the study such as data collection, data analysis, and the writing of results. These reflections constantly reminded me of my positionality as researcher. Merriam (2002) calls this strategy *reflexivity* –“the process of reflecting critically on the self as researcher” (p. 26). Moreover, reflexivity “involves the recognition that an account of reality does not simply mirror reality but rather creates and constitutes as real in the first place whatever it describes” (Emerson, Fretz, & Shaw, 1995, p. 213). My written reflections helped me construct reality from the perspective of my participants and they became part of the interpretative process involved in my deep analysis of the data collected. I also included reflective comments in my journal of my notes in order to uncover my own underlying biases, implicit assumptions, or prejudices about the context and problem (Bogdan & Biklen, 2010).

Ethics. According to Merriam (2002), a "good" (p. 29) qualitative study is one that has been conducted in an ethical manner. This author asserts that the value of a study depends upon the ethics of the research. In qualitative research, ethical dilemmas emerge in relation to the collection of data, dissemination of data, the researcher-participant relationship, and how much privacy and protection from harm are afforded to the participants. These ethical considerations were addressed in the IRB which is included in the Appendix section (see Appendix C).

During the course of my doctoral studies at Border University, I became deeply immersed in the field of teacher preparation while serving in different capacities as a graduate research assistant, advisor, tutor, mentor, and volunteer in the College of Education. Based on

this continuous engagement for the last three years, I forged relationships of trustworthiness and credibility (e.g., Creswell, 2003; Merriam, 2002) with a group of prospective participants or “key informants” (Bogdan & Biklen, 2007, p. 231). I invited prospective study participants in person, by phone, or through email. Furthermore, I share some of the demographic characteristics of my participants: I was born and raised in Mexico, learned English as a second language, attended schools in Mexico and the United States, and attended graduate school while attempting to balance family and full-time work responsibilities. Fránquiz et al. (2011) emphasize that the life experiences of the researcher are an integral component in shaping the research process.

The rights of the participants to privacy and confidentiality were protected at all times and they were verbally informed (orally and in writing) of their right to not participate or withdraw from the study at any time without any repercussions. As specified in the Informed Consent Form (refer to IRB Appendix C), they were informed that they would not be subject to coercion or undue influence as the investigator is no longer working in the College of Education or serving in any other function at Border University besides being a doctoral student in the College of Education.

Entering the field of research is a process that requires a continuous reflection on the ethical issues involving the researcher/participant relationship (Seidman, 2006). Thus, I continuously reflected on my role as a researcher by keeping a journal during the course of the study. The intent of this journal had various goals: First, to keep a genuine interest in my research topic and commitment in my research; secondly, I drew from these reflections to learn about myself as a way to connect with my participants and learn about their personal and professional experiences; and finally, to maintain humility by not taking myself or my research too seriously that I will forget that my participants have "other, more important things going on

in their lives" (Merriam, 2002, p. 422). As this author asserts, in all research, the validity, trustworthiness, and authenticity are areas of major concern and I continuously reflected on these issues during the course of my study.

Multiple case study design. In case studies the researcher explores in depth a program, an event, an activity, a process, or one or more individuals. Intense interest in learning more about the complexity of human experience impels some researchers to selection of a case study design (Dyson & Genishi, 2005). Case studies are designed to illustrate a specific instance of a more general principle (Cohen, Manon, & Morrison, 2005). As these authors explain, "one of the strengths of case studies is that they observe effects in real contexts, recognizing that context is a powerful determinant of both causes and effects." (p. 181). More recently, Yin (2014) explains that his definition of case study has evolved through the years and reflects a twofold definition of case studies. The first part is related to the *scope of the study* (p. 16):

1. A case study is an empirical inquiry that
 - Investigates a contemporary phenomenon (the “case”) in depth and within a real world context, especially when
 - the boundaries between phenomenon and context may not be clearly evident.

The second part of Yin’s definition of case studies derives from the fact that phenomenon and context are not always sharply distinguishable, resulting in other relevant methodological characteristics which become the *features of a case study*. (2014, p. 17)

2. A case study inquiry
 - copes with the technically distinctive situation in which there will be many more variables of interest than data points, and thus,

- relies on multiple sources of evidence, with data that may converge in a triangulation fashion, and which frequently
- benefits from the prior development of theoretical propositions to guide data collection and analysis.

The case study design is used in many situations “to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena” (Yin, 2009, p.4). Numerous scholars investigating the topic examined in this dissertation research have conducted studies yielding significant findings that have generated new knowledge, understanding, and policy change. (e.g., Bonner et al., 2011; Brochin Ceballos, 2012; Flores et al., 2011; Valenciana, Weisman, & Flores, 2006).

After careful review of the extant literature on this topic, I decided to select a multiple case study method to investigate the second research question which relates to the specific experiences and perceptions of a group of Mexican American bilingual teachers candidates and teachers in a teacher preparation program at a HSI on the Texas-México border. This approach was appropriate because this component of the study sought to “develop in-depth understanding of the dynamics present within a single setting” (Eisenhart, 2002, p. 8).

Context and setting. Border University, the study site, is a Hispanic-Serving Institution located on the Texas-Mexico border. To contextualize this study, an overview of the demographic characteristics of Border County (pseudonym), where this university is located, is presented. Then, the institution's distinctive features are described.

Border county demographic characteristics. Border County and its neighboring Mexican city (pseudonym), have a combined population of almost 2.1 million. This border metropolitan region has been characterized as a "hybrid space of fissures, synergies, and mutations." (Staudt,

2010). This transnational metropolis is an example of global community that coexists side by side (Fuentes & Peña, 2010). According to these authors, Mexican City "has had success in the new global market as an export-processing zone or *maquiladora* (twin plant) hub" (p. 11). Border City depends on this Mexican maquiladora activity, and it functions as a supplier of raw material and components. This region is one of the 10 largest manufacturing centers in North America with more than 200,000 manufacturing jobs. More than 18% of all U.S.-México trade is shipped through this *borderplex*, most of it related to a wide range of manufacturing products. In 2010, an estimated \$71.1 billion of trade moved across the borders between these two cities, at least \$16.2 billion of which was related to electronics manufacturing. The volume of electronics has increased by 41% since 2005 (REDCO, 2011). However, according to U.S. Census (2010) figures this economic growth is not reflected in the household median income for the Border County which was \$36,333, compared to \$49,456 for the state, and \$51,914 for the United States. Moreover, this same report showed that 25.6% of this county's residents lived below poverty level, compared to 16.8% for the state, and 13.8% for the United States.

There are nine public school districts in Border County, with a total enrollment of 177,063 and 11,080 graduates for the 2010–2011 academic year. There are 55 private schools, with a combined total enrollment of 9,783 students (REDCO, 2011). The K-12 student demographics resemble the county population composition. However, in one of the largest school districts in this county (TEA, 2011), Border ISD (pseudonym), the teacher demographics do not reflect the district's student population. Several disparities are noted in Table 3.2. For instance, in this district the percentage of Hispanic students is 83% while the percentage of Hispanic teachers is only 63%. In contrast, while the percentage of white students is 11%, the percentage of white teachers is almost triple (31%). Another disparity was in the percentage of

Limited English Proficient (LEP) students which was 27%, three times the percentage of Bilingual and ESL teachers (9%). Finally, a high number (70.1%) of students were classified as economically disadvantaged children.

Table 3.2

Descriptive Statistics of Border School District Selected Demographic Variables

Total Students	64,023	Total Teachers	4.399
% African American	4	% African American	3
% Hispanic	83	% Hispanic	63
% White	11	% White	31
% Other	2	% Other	3
% Economically Disadvantaged	70.1	Average Years of Experience	12.3
% LEP	27	% Bilingual/ESL Ed.	9

In the face of recent problems resulting from drug-related violence in the border Mexican city, Monárrez (2010) provided a realistic picture of the conditions affecting this border region when she affirms:

Violence can spill over to the United States. U.S. criminal drug trafficking elements interact with those in Mexico and are part of the same system: money laundering, drug addiction, and affiliation with gangs. This terminal and unstoppable violence is moving the two nations together. (pp. 37-38).

Since Mexican border towns became battlefields in the drug war, U.S. cities like Border City have become refuges for middle- and upper-class Mexicans. Many have moved their businesses stateside; the real estate market is seeing an influx of Mexican nationals from Mexican City purchasing homes and relocating their families (Grinberg, 2009). As a result of this migration, there has been a large number of immigrant students enrolling in private and public schools in Border City. However, despite this student population growth, schools districts have had a hiring freeze for the last two years due to budget reductions and some newly certified teachers in this region are forced to work as substitute teachers (Ballinger, 2011). Table 3.3 shows a comparison of the unique demographics that characterize the Border County population in comparison with Texas and U.S. figures.

In this subsection, I have highlighted the demographic characteristics of the region where Border University is situated. In the next part of this chapter, I provide information about the university setting.

University setting. Located on the U.S.-Mexico border, Border University was founded on September 23, 1914 when it opened its doors to 27 students. The school's initial name was State School of Mines and Metallurgies and its main intent was to prepare local professionals to work in the engineering and geology industry. The school was the first and only higher education provider in the region for a few years. In 1919, the U.T. System was formally established and the mining school became the first branch in the System. The following year it was renamed the College of Mines and Metallurgy. When this college refused to respond to calls by state officials and community leaders to expand its curriculum to address the growing need for primary school teacher, a small city college was opened. This new college was dedicated to the preparation of

teachers (a normal school) and would compete with the College of Mines and Metallurgy for almost a decade (Gonzales, 2010).

Table 3.3

Comparison between Border County and U.S. Demographics.

	<u>Border</u> <u>County</u>	<u>Texas</u>	<u>U.S.</u>
Population, 2010	800,647	25,145,561	308,745,538
Persons under 5 years, percent, 2011	8.10%	7.60%	6.50%
Persons under 18 years, percent, 2011	29.70%	27.10%	23.70%
<u>Ethnicity</u>			
White persons, percent, 2011 (a)	92.80%	80.90%	78.10%
Black persons, percent, 2011 (a)	3.60%	12.20%	13.10%
American Indian and Alaska Native persons, percent, 2011 (a)	1.00%	1.00%	1.20%
Asian persons, percent, 2011 (a)	1.20%	4.00%	5.00%
Native Hawaiian & Other Pacific Islander persons, percent, 2011 (a)	0.20%	0.10%	0.20%
Persons reporting two or more races, percent, 2011	1.20%	1.70%	2.30%
Persons of Hispanic or Latino Origin, percent, 2011 (b)	81.40%	38.10%	16.70%
White persons not Hispanic, percent, 2011	13.70%	44.80%	6.34%
<u>Language and Educational Level</u>			
Foreign born persons, percent, 2006-2010	26.90%	16.10%	12.70%
Language other than English spoken at home, pct age 5+, 2006-2010	74.80%	34.20%	20.10%
High school graduates, percent of persons age 25+, 2006-2010	71.00%	80.00%	85.00%
Bachelor's degree or higher, pct of persons age 25+, 2006-2010	19.30%	25.80%	27.90%
<u>Income</u>			
Per capita money income in past 12 months (2010 dollars) 2006-2010	\$16,768	\$24,870	\$27,334
Median household income 2006-2010	\$36,333	\$49,646	\$51,914
Persons below poverty level, percent, 2006-2010	25.60%	16.80%	13.80%

Note. Source U.S. Census Bureau 2010. Adapted from Quick County Facts (<http://quickfacts.census.gov/qfd/states/48/48141.html>)

(a) Includes persons reporting only one race

(b) Hispanics may be of any race, so also are included in applicable race categories.

In the end, the teachers college folded and ultimately it was absorbed by the College of Mines and Metallurgy. By the late 1930's, student enrolment had grown to 600 with many students enrolling in the education program (Pacheco, 1999). In 1967, the school was renamed

Border University. Gonzales (2010), citing De los Santos (1991), states that Border University became “increasingly attuned to opportunities for developing educational programs, research, and service activities related to its unique location and clientele” (p. 207). Since then the university has accepted this charge. For example, in 1985, De los Santos (1991), as cited in Gonzales (2010), stated, “its primary mission is meeting the needs of the metropolitan areas it serves through instruction, research, and public service” (p. 217).

In the late 1980’s, Border University joined two other border setting universities in the state, all of whom were defended by the Mexican American Legal Defense and Educational Fund (MALDEF) in a suit that charged that the state’s Higher Education Coordinating Board (THECB) was inequitably funding border institutions. Most border situated universities in the state tend to serve large Mexican American or Mexican National students, and, therefore, MALDEF charged that THECB was causing unfair caches and unequal opportunities to the Mexican American population. Specifically, the lawsuit alleged that the THECB failed to provide equal opportunities to minorities when they denied, repeatedly, the university’s request for new degree programs, especially graduate and doctoral level programs. Ultimately, the suit was settled out of court, and the affected universities were given additional funding to ameliorate the disparate funding gap for border-sitting, Hispanic-Serving Institutions (HSIs).

In 2012, Border University had approximately 22,700 students enrolled, of which approximately 6,000 were freshmen and half were transferring students. A large number of these students transferred from the local community college as there is a memorandum of agreement between the two institutions to coordinate curriculum and degree plans. As described in Table 3.2, more than 25% of the population live below poverty level. Consequently, a high number (76%) of undergraduate students were determined to have received financial aid in 2012 (CIERP,

2012, pp. 27-28)¹. Additionally, this university's geographic location, on the Texas-Mexico border, makes it distinctive in comparison to other U.S.-Mexico border cities. Its students live and study in the world's largest bi-national metropolitan area, unlike any other university setting. One of the unique characteristics of this institution is reflected in the number of Mexican students who attend this university and live across the border in Mexican City. In 2011, of the 22,640 university's student body, 1,820 (8.5%) were international students (Beltrán, 2012) and 1,400 were Mexican students who crossed the Texas-Mexico border daily to attend Border University (Manning, 2011). The college of education is a top ranking producer of teacher education degrees for Latinos in the US, graduating 500 teachers each year (Brochin Ceballos, 2012). It is estimated that more than 80% of teachers employed in Border County are educated in this institution.

Data analysis. In qualitative research, data analysis involves a “process of sorting, arranging, coding and looking for patterns in data for the purpose of coming up with results” (Bogden & Biklen, 2007, p.271). Consistent with this approach, cases were first analyzed individually and subsequently compared with other cases (Creswell, 2007; Merriam, 2002). To strengthen the validity of the findings, frequent member checks (Denzin & Lincoln, 2005) were conducted to provide participants with an opportunity to influence how they were presented in the data and the accuracy of my interpretations. Data analysis was inductive, based on establishing patterns or themes (Charmaz, 2006). Creswell (2002) described the coding process in inductive analysis process as a series of steps which are presented in Table 3.4. Following this coding process facilitated the data analysis.

¹ Socioeconomic status as measured by financial aid received was one of the variables to be included in the present study. However, data were not provided by the university's financial aid department administrators.

Table 3.4

The Coding Process in Inductive Analysis

Initial read through text data	Identify specific segments of information	Label the segments of information to create categories	Reduce overlap and redundancy among the categories	Create a model incorporating most important categories
Many pages of text	Many segments of text	30-40 categories	15-20 categories	3-8 categories

Note: Adapted from Creswell, 2002, Figure 9.4, p. 266

In addition, I approached analysis using grounded theory strategies: initial coding, focused coding, theoretical sampling, memo writing, and sorting. As Charmaz (2006)) points out, data collection, reflection, and analysis are continuous and cyclical processes that become integral aspects of qualitative studies. With this in mind, I first read all interview transcriptions multiple times and then began to organize and classify the data, using qualitative analysis software. As I started to analyze the data, I compared data with data to find similarities and differences. This process is also called *constant comparative method* (Glaser and Strauss, 1967).

Assumptions of the qualitative method. With respect to the qualitative phase of this study, my assumptions are situated within the five philosophical assumptions that Creswell (2007) enumerates:

- (1) Reality is subjective and multiple, (2) researcher attempts to lessen distance between herself and that being researched, (3) researcher acknowledges that research is value-laden and biases are present, (4) researcher writes in a literary style using the personal

voice and uses qualitative terms and limited definition, and (5) researcher uses inductive logic, studies the topic within the context, and uses an emerging design. (p. 17).

This study was based on the postpositivist assumption that, as a researcher, my values and belief systems played an important role in how I conducted the study and interpret the data. As some researchers conducting qualitative studies have suggested (Charmaz, 2006; Merriam, 2002), keeping a reflective journal helped me sort out how my personal characteristics such as gender, ethnicity, language, socioeconomic class, immigrant status, professional experience, and doctoral student position interacted with my interpretation of the data.

Trustworthiness. Qualitative researchers describe the value and validity of research studies using language and concepts that are distinct from quantitative counterparts. Denzin and Lincoln (2005) argue that validity may be an inappropriate term in a critical research context, affirming that trustworthiness is a more appropriate word to use in critical research studies because it implies a different set of assumptions about the research. Lincoln and Guba (1985) described the criteria for trustworthiness, focusing on credibility, transferability, dependability, and confirmability.

With respect to specific strategies to establish trustworthiness of my study, I followed the guidance provided by Merriam (2002) in her descriptions of : triangulation (e.g., using different sources of data such as interviews, observations, field notes, and journal reflections), member checks (asking participants to check data accuracy and interpretation), peer review (advisors), critical self-reflection, adequate time collecting data, detailed account of the methods and procedures, and careful attention to providing rich and thick descriptions of the findings (Geertz, 1973).

Furthermore, as Krathwohl (2009) asserts, in qualitative research, trustworthiness is equivalent to scientific rigor in quantitative terms and claims that credibility is an appropriate synonym for trustworthiness. This author provides a list of criteria for assessing the research quality and rigor. Thus, I employed the same measures in my proposed study. Table 3.5 shows these strategies.

Table 3.5

Quantitative and Qualitative Criteria for Assessing Research Quality and Rigor

Quantitative Term	Conceptual Qualitative Term	Operational Strategy
Internal Integrity (internal validity)	Credibility	prolonged engagement in field triangulation member & peer checking active search for discrepant data and rival explanations
External Generality (external validity)	Transferability	thick description purposive sampling
Reliability	Dependability	create an audit trail code-record triangulation peer examination prolonged engagement
Objectivity	Confirmability	triangulation practice of self-reflection use of participants' quotations audit trail

Note: Adapted from Krathwohl, 2009, p. 345.

Mixed methods approach

This mixed methods study attempted to integrate both quantitative and qualitative research methods to better understand the process of teacher preparation for Mexican American teacher candidates seeking bilingual education certification. The research design including the different phases, procedures, and results is presented in a visual model (Figure 3.2).

The procedures included in this model were designed with the aim to more fully answer the research questions and develop a more robust and meaningful picture of the research problem (Onwuegbuzie & Combs, 2011). The mixing of both methods took place at three different stages during the research: first, in the selection of participants for the qualitative phase, secondly, in the development and refinement of interview questions, and thirdly in the combined interpretation and discussion of the quantitative and qualitative findings. Following is an explanation of the specific procedures utilized in the mixing of both methods.

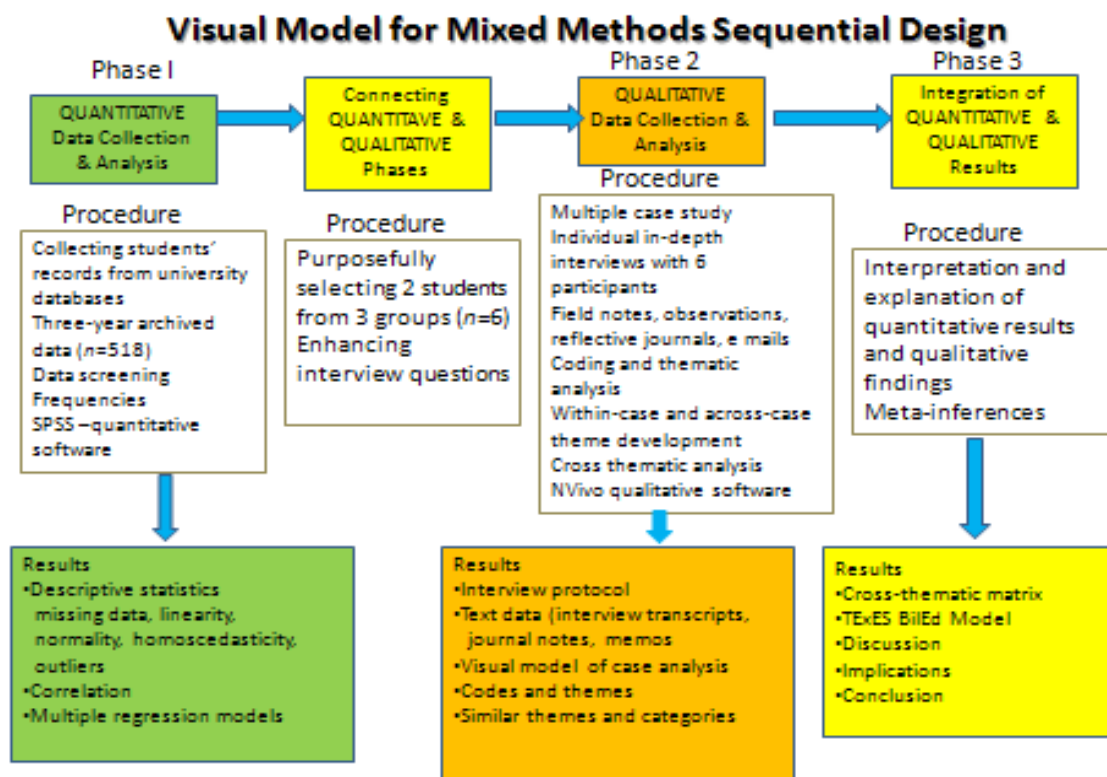


Figure 3.2. Visual model for mixed methods sequential design procedures.

Selection of participants for the qualitative phase. As previously explained in the QUAL section, the method of selection was purposeful sampling. The three primary criteria were: being of Mexican descent, having graduated from Border University with a Bilingual Generalist major in the last three years (from 2010 to 2013), and having taken the TExES exams at least one time. Subsequently, after analyzing the QUAN data, additional criteria were added. I screened potential participants through informal conversations with them. I explained in general terms my research purpose and asked if they would be willing to participate in the study.

Working as a graduate research assistant, mentor, tutor, and advisor in the college of education at Border University for the last three years provided opportunities for me to immerse myself in the field and helped me meet many teacher candidates. During my conversations with some of the students and through my engagement in the advising center for teacher education, I learned who could meet the main selection criteria and be willing to participate. The final criteria to select participants for the qualitative phase were derived from the quantitative phase results.

Although it was not possible to select students directly from the quantitative data base because identifying information was removed, the results revealed certain general demographic and academic characteristics that I attempted to match in an effort to gather rich data (Geertz, 2003). The additional factors derived from the QUAN phase to select for the QUAL phase included, first, the number of TExES test-taking attempts. In this respect, the six participants included two students who had failed the tests more than two times, two other students who had passed after the second attempt, and two who had passed them the first time they took them. A second quantitative factor that influenced the selection of participants in the qualitative part of the study was gender. Because the majority of students were female (95%), five female students and one male student were included. A third aspect used for selection was age, 64.1% of students

in the quantitative results were between the ages of 20 to 29 and 20.8% were between 30 to 39 years of age. An effort was made to reflect these proportions. Thus, four participants fell under the first category (20-29 yrs old) and two of them were between 30 and 39 years old. Fourth, the quantitative results included three academic years; therefore, it was decided to select six participants who had graduated in three different years (two in 2010, one in 2011, and three in 2013). Lastly, the quantitative results showed that 15% of Phase I students graduated with a 4-8 Bilingual Generalist specialization, thus two of the six participants selected for the second phase of the study had graduated with this major.

Instruments: Development and refinement of interview questions. The next stage involving mixing of methods was the development of open-ended questions. The statistical analyses showed that the THEA Reading and SAT Verbal were significant predictors of TExES PPR scores whereas the THEA Reading, SAT Verbal and Math, and GPA were statistically significant predictors for TExES Generalist Bilingual performance,. Therefore, in the interviews I prompted the students to talk about their experiences with college preparation and SAT tests. Additionally, because the quantitative findings revealed that 19% of the students had failed the BTLPT (Spanish proficiency) test, I asked the participants to tell me about their Spanish literacy skills and their performance in the test. Below are examples of these questions:

1. How and where did you learn English?
2. How old were you when you immigrated to the US and started school?
3. What type of college preparation did you receive in high school?
4. Did you take the SAT and if so, how important were the scores for you?
5. Where did you attend high school?
6. How many times did you take the TExES exams?

7. To what extent did the qualifying exams help you prepare for the TExES exams?
8. How did you prepare to take the certification exams?
9. Did you take any teacher education courses in Spanish?
10. How difficult was the BTLPT?

Combined interpretation and discussion of the quantitative and qualitative

findings. The integration of the results of the two phases of this study is presented in chapter 5.

Assumptions of the mixed methods approach. Greene (2007) describes the journey of social inquiry through the concept of *mental models*: “A mental model is the particular constellation of assumptions, theoretical commitments, experiences, and values through which a social inquirer conducts his or her work” (p.3). Greene (2007) observes that the ideas about study design and methods are influenced by or rooted in a variety of predispositions, beliefs, and understandings. These influences are grouped into the following clusters (pp. 11-12):

- Substantive theory, theoretical commitments, and relevant research literature.
- Disciplinary perspective.
- Philosophy of science - to include beliefs about the nature of the social world, nature of knowledge, and what is important to know –as in traditions of realism and constructivism.
- Methodological traditions – experimentalist, case study inquiry, survey research, secondary data analysis, and participatory inquiry.
- Education and training – methodological orientation of one’s formal education.
- Contextual factors – issues of practicality and resources.

- Political factors – issues of race and class, as well as issues of power and voice.
- Personal values – respect for diversity, or commitment to inclusive participation by all affected, personal experience, or ideas, and commitments obtained from one's lived experience.

Furthermore, the concept of mental models has a central role in mixed methods approaches to social inquiry as Greene (2007) eloquently explains:

The core meaning of mixing methods in social inquiry is to invite multiple mental models into the same inquiry space for purposes of respectful conversation, dialogue, and learning one from the other, toward a collective generation of better understanding of the phenomena being studied. (p. 13).

My assumptions in relation to the use of a mixed methods design were three: First, utilizing this design could bring together the strengths of both quantitative and qualitative approaches in answering the research questions guiding this study which relate to the factors and processes involved in becoming a highly qualified bilingual teacher in Texas; secondly, by integrating both methodologies, I expected to present a greater diversity of points of view; and finally, as Tashakkori and Teddlie (2003) suggest, I attempted to make stronger inferences based on the combination of the two methods in the same study. Mixed methods studies offer great potential for investigating both the predictors of bilingual Mexican American students' performance in teacher certification exams and their perceptions and experiences during the process of becoming certified teachers in Texas.

In sum, my assumptions in relation to the use of a mixed methods design were influenced by my mental models that, as Greene (2007) asserts, involve a plurality of philosophical

paradigms, theoretical assumptions, methodological traditions, data gathering and analysis techniques, personal understandings, and value commitments.

Summary

In this chapter, I have described the mixed methods research design of the present study, including the context, instrumentation, variables, participants, data collection, and analyses for the quantitative, qualitative, and mixed methods approaches. In the next chapter, I present the findings of both the quantitative and qualitative components.

Chapter 4

Results

The purpose of this mixed method study of Mexican American bilingual teacher candidates attending a HSI on the U.S.-Mexico border was twofold: First, to examine factors that predict Latino students' success on standardized certification examinations; and second, to develop a deeper understanding about the complex web of issues related to the experiences of bilingual Latino students preparing to become certified teachers, from the students' perspectives. A two-phase data collection process (Creswell & Plano Clark, 2012) was used in this study. The first phase involved quantitative data which was utilized to analyze factors (SAT, THEA Reading, final GPA, and Qualifying Exams) that could predict the performance of teacher candidates attending a Hispanic Serving Institution (HSI) on the U.S.-Mexico border on state certification exams (TExES) for Bilingual Generalist in Texas. The goal of the second phase was to develop a deeper understanding about the complex web of issues related to the experiences of bilingual Latino students preparing to become bilingual certified teachers, from the students' perspectives. In this section I present the results of both phases.

Phase I - Quantitative

The quantitative phase of this study employed archived data extracted from four university data bases containing records for the variables of interest in this study. The criteria for inclusion of the variables were drawn from the two quantitative research questions guiding this study:

1) How are GPA, SAT, THEA, and Qualifying Test scores of future Mexican American bilingual teachers correlated?

2) To what extent do these variables predict the performance of these bilingual teacher candidates on state-mandated high-stakes tests (TExES), particularly Bilingual Education Generalist (BilEd) and Pedagogy and Professional Responsibility (PPR) exam scores?

Consequently, the predictor variables (IVs) were SAT Verbal, SAT Mathematics, THEA Reading, qualifying exams (QUAL) and final GPA. The outcome variables (DVs) were certification test scores on the TExES: PPR, BilEd exams for grades EC-4, EC-6, and 4-8, and Bilingual Target Language Proficiency Test (BTLPT) for Spanish. Separate multiple regression models for the three TExES exams required for Bilingual Generalist certification were developed.

During the months of January to March 2013, after ensuring that all research processes met ethical standards, the university provided the researcher with access to the data bases to extract records for all students who graduated in school years 2008-2009, 2009-2010, and 2010-2011 with an undergraduate degree designed for future bilingual teachers, Bachelor of Interdisciplinary Studies (BIS) with a Generalist-Bilingual Education specialization (EC-4, EC-6, & 4-8). The quantitative analysis and writing of the results took place in April 2013. SPSS, version 19, was utilized to examine the variables for accuracy, missing values, fit between their distributions, and the assumptions of multivariate analysis.

Participants. A total of 2,460 TExES records corresponding to 564 students were obtained for the three academic years. Every student in the sample had multiple test records representing every test taken (i.e., THEA, Qualifying Exams, PPR, Bilingual Education, and BTLPT). Additionally because there are no limits as to the number of times students can take a test prior to passing it, some students had records for multiple attempts. For the purposes of this study, only the highest score for every test taken (THEA, Qualifying Exams, and TExES) was

analyzed. The reason was that at this teacher preparation program, there is no limit as to the number of times a student can take these tests. Because 46 records for the certification (TExES) exams were missing, the sample size for the first parts of the analyses, (descriptive and correlation) was reduced to $n = 518$. In this section, the quantitative results are presented in the following order: First, the sample characteristics represented by frequencies, means, mode, and medians are presented; secondly, a Pearson r correlation matrix showing the coefficient coefficients and their statistical significance among the variables is shown; and in the last part, a series of multiple regression analyses displaying prediction models for the different TExES exams are presented.

Descriptive statistics. This first part of the analysis was performed using SPSS REGRESSION and SPSS FREQUENCIES for data screening and evaluation of normality. After screening, no major violations of normality were found. Ethnicity characteristics of the sample and frequency distributions for the three academic years and academic majors are presented in Table 4.1.

The students' ages ranged from 19 to 59 years, with a mean =29.5 (SD=8.5), median=26, and mode=24. Gender distribution was 95% females ($n=492$) and 5% males ($n=26$). Students self-described as: Hispanics ($n=501$, 96%), International ($n=15$, 2.9%) and White, Non-Hispanic ($n=2$, 0.4%). The graduating student distribution for the three academic years was as follows: 2009 ($n=204$, 39.3%), 2010 ($n=154$, 29.3%), and 2011 ($n=160$, 31.3%). The three Bilingual Education specialization majors had these distributions: EC-4 ($n=313$, 60.4%), EC-6 ($n=125$, 24.1%), and 4-8 ($n=80$, 15.4%). It is important to note that the university does not collect data on the specific ethnicity for Hispanics. However, based on the fact that the university population

matches the city's demographic distribution, it is assumed that the majority of students describing themselves as Hispanics are Mexican Americans.

Table 4.1

Number and Percentage Distribution of Bilingual Education Teacher Candidates' Characteristics for Three School Years (2009 -2011)

Variable	<i>n</i>	%
Age		
≤ 19	1	0.2
20 – 29	332	64.1
30 – 39	108	20.8
40 – 49	61	11.8
50+	16	3.1
Gender		
Female	492	95
Male	26	5
Ethnicity		
Hispanic	501	96.7
International	15	2.9
White, Non-Hispanic	2	0.4
Graduation Year		
2008 – 2009	204	39.4
2009 – 2010	154	29.7
2010 - 2011	160	30.9
Academic Major		
Bilingual Generalist (EC-6)	125	24.1
Bilingual Ed. Generalist (4-8)	80	15.4
Bilingual Ed. Generalist (EC-4)	313	60.4

Note. *n*=518

Descriptive statistics for the IVs (predictors) and DVs (outcome variables) were calculated and are presented in Table 4.2. Means and standard deviations for the predictor variables (SAT, THEA, Qualifying exam scores, and final GPA), and outcome variables (BilEd EC-4, BilEd EC-6, BilEd 4-8, BilEd EC-8, and BTLPT TExES scores) are displayed. As illustrated in the table, the number of cases for each variable varied. That is, not all 518 students in the sample took all the exams. For example, a much larger number (*n* = 423) of students took

the THEA Reading test than the THEA Writing ($n = 59$) and THEA Math ($n = 70$) exams. Similarly, only 38% ($n = 198$) of the 518 students took both SAT tests (verbal and math). Although ACT scores were supplied in one of the data bases, these were not used in the analysis. All the students that took the ACT also took the SAT. Thus, the students' SAT tests were utilized instead of ACT scores. The largest number of tests taken were the Qualifying Exams, Pedagogy and Professional Responsibilities (PPR, $n = 490$) and Generalist, Bilingual Education (BilEd) for the three different grade levels (EC-4, EC-6, & 4-8, $n = 492$). Effective spring semester 2013, a new policy was implemented and teacher candidates, in addition to passing the Qualifying tests, were required to pass the TExES exams in order to complete their student teaching semester and graduate from the program.

As observed in the different sample sizes in Table 4.2, some student records in the data bases did not have SAT or THEA scores. It seemed that not all the 518 students who took at least one TExES exam had taken the THEA and SAT examinations.. The explanation provided by the College of Education data base administrators for these missing test records was that at this university, the SAT was not necessarily required to be admitted and in addition, students transferring from the local community college or other universities are not required to submit SAT scores. Multiple exemptions from the required test scores on THEA or SAT were used as criteria for admission. For example, no SAT scores were required for first year students if they graduated in the top 10% from a Texas high school. In the same way, although they do need to submit their scores; no minimum SAT scores were required for students graduating in the top 25% of Texas or out-of-state high schools. Similarly, although the teacher preparation program required minimum scores on the THEA tests (230 for Reading and Mathematics and at least 220 for Writing), students were allowed to substitute THEA scores with grades of A or B in

designated courses. Although the researcher asked for the number of substitutions that had been allowed, the COE did not provide the data.

Table 4.2

Descriptive Statistics for the Predictor and Predicted Variables

Variable	<i>n</i>	Minimum	Maximum	M	SD
GPA Final	518	2.48	4	3.41	0.32
THER Score	423	179	299	263.23	16.15
THEW Score	59	180	270	221.02	27.38
THEM Score	70	100	298	229.10	33.62
SAT Verbal	198	200	610	414.49	78.41
SAT Math	198	210	640	416.62	70.50
SAT Composite	198	500	1220	831.11	132.34
PPR Qualifying	490	62	100	84.93	6.61
BilEd Qualifying	492	40	97	81.83	6.53
PPR TEXES	473	184	291	250.4	17.54
BilEd EC-4	280	191	291	252.07	17.40
BilEd EC-6	147	186	273	235.82	16.31
BilEd 4 - 8	70	168	268	240.53	22.16
Spanish Proficiency (TOPT)	384	6	8	6.73	0.80
BTLPT	116	193	288	252.55	18.81

In addition, to pass the Qualifying exams, a minimum score of 78 was required. TExES scores were measured on a scale of 100 to 300 points, with a passing score of 240 points (TEA, 2012). Due to changes in the test format of the TExES Bilingual Generalist exams in 2009 by SBEC/TEA, students taking these exams have taken different versions of this test from 2009 to 2011.

Finally, in addition to the PPR and Generalist, Bilingual Education TExES exams, students majoring as Bilingual Generalists were required to take a language proficiency test.

Prior to 2011, the Spanish proficiency test was called Texas Oral Proficiency Test (TOPT) Spanish. The TOPT was an oral test scored on a scale ranging from 1 to 8 and the minimum required passing score was 6 out of 8. All students in the sample ($n = 384$) passed this test on their first attempt. In 2011, a new test called Bilingual Target Language Proficiency Test (BTLPT) was implemented, using the same grading scale as the PPR and BilEd. This new exam tested for oral proficiency and written proficiency. As observed in table 2, not all students who took the BTLPT ($n = 116$) passed it. The minimum passing score was 240. The frequency distribution for this group showed 22 students out of the 116 (19%) who took this test did not pass.

In the next sub-section, I present the Pearson r product moment correlation for the predictor variables and the outcome variables.

Pearson r product moment correlation index. The Pearson r product moment correlation coefficient examines the relationship between quantitative variables in a study (Gravetter & Wallnau, 2009). Krathwohl (2009) indicates that the correlation statistic suggests the strength and direction of a relationship and is expressed as numbers that range from -1.00 to +1.00. A correlational analysis was conducted to determine if the relationships between the predictor variables (SAT Math, SAT Verbal, THEA tests, QUAL Exams, and GPA) and the outcome (predicted) variables (BilEd EC-4, BilEd EC-6, BilEd 4-8, and BTLPT TExES scores). Table 4.3 presents these correlation results.

Table 4.3

Correlations between the Predictor Variables (GPA, THEA, SAT, and Qualifying exams) and the Predicted Variables (PPR, BiEd EC-4, BiEd EC-6, BiEd 4-8, and BTLPT) TexES Exams

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. GPA	1													
	(518)													
2. THER	.24**	1												
	(423)	(423)												
3. THEW	.33*	.37**	1											
	(59)	(59)	(59)											
4. THEM	0.19	0.16	.37*	1										
	(70)	(66)	(32)	(70)										
5. SAT Verbal	.26**	.36**	.46*	.61**	1									
	(198)	(173)	(20)	(24)	(198)									
6. SAT Math	.21**	.35**	.58**	.55**	.58**	1								
	(198)	(173)	(20)	(24)	(198)	(198)								
7. PPR QUAL	0.03	0.04	0.08	0.06	-0.01	-0.07	1							
	(490)	(403)	(56)	(67)	(189)	(189)	(490)							
8. BiEd QUAL	.09*	.11*	-0.06	0.12	-0.06	-0.04	.25**	1						
	(492)	(404)	(56)	(68)	(191)	(191)	(482)	(492)						
9. PPR TEXES	.27**	.48**	.57**	.32*	.58**	.40**	0.02	0.06	1					
	(473)	(387)	(49)	(61)	(186)	(186)	(446)	(448)	(473)					
10. BiEd EC-4	.27**	.48**	.46**	0.31	.65**	.59**	0.08	0.08	.71**	1				
	(280)	(221)	(35)	(32)	(113)	(113)	(255)	(257)	(268)	(280)				
11. BiEd EC-6	.38**	.39**	0.50	0.24	.58**	.42**	-0.05	0.15	.74**	0.60	1			
	(147)	(125)	(13)	(23)	(55)	(55)	(145)	(145)	(129)	(5)	(147)			
12. BiEd 4-8	.48**	.49**	0.87	.65*	.56**	.70**	0.02	0.04	.75**	-1.00**	0.79	1		
	(70)	(54)	(5)	(10)	(26)	(26)	(69)	(68)	(66)	(2)	(4)	(70)		
13. Spanish	0.08	0.07	0.15	-0.02	0.03	0.11	.11*	0.03	0.09	0.08	0.11	0.21	1	
	(384)	(310)	(39)	(49)	(156)	(156)	(361)	(360)	(359)	(256)	(71)	(54)	(384)	
14. BTLPT	.35**	.25*	.52*	0.01	0.18	0.03	-0.04	-0.01	.43**	.50*	.39**	.76**	.41*	1
	(116)	(96)	(18)	(18)	(46)	(46)	(113)	(112)	(108)	(20)	(76)	(21)	(35)	(116)

Note. **Correlation is significant at the .01 level (2-tailed). *Correlation is significant at the .05 level (2-tailed). Numbers in parenthesis represent number of cases.

In general, no statistically significant correlations were found between the Qualifying exams and the TExES as demonstrated by the low correlation coefficients among these tests. With the exception of an $r = .105$ ($n = 482$, $p = .05$) between the PPR QUAL exam and the old version of the TExES Spanish Language Test (TOPT), none of the correlations were statistically significant. Additionally, the PPR qualifying exam was not correlated with any of the other predictor variables (GPA, THEA, and SAT). Conversely, although the correlation coefficients were low, the Biled Qualifying exam was significantly correlated with GPA and THEA Reading. The corresponding correlation coefficients were: GPA, $r = .094$ ($n = 492$, $p = .05$); and THEA Reading, $r = .112$ ($n = 490$, $p = .05$).

Additionally, the outcome variables, TExES PPR and Biled tests, significantly correlated with all the predictor variables (GPA, THEA, and SAT), however there was no significant correlation with the Qualifying exams. However, a positive significant correlation between the two Qualifying exams (PPR and Biled) was found ($r = .252$, $n = 482$, $p = .05$). The TExES BTLPT was significantly correlated with GPA, THEA Reading, and THEA Math at the .05 level. The correlation analysis also indicated convergent validity between the three TExES exams as demonstrated by the statistically significant results for the correlations between the TExES PPR and TExES Biled exams.

Multiple regression. Regression analyses are a set of statistical techniques that assess the relationship between one DV and several IVs (Tabachnick & Fidell, 1996). According to these authors, “the term regression is often used when the intent of the analysis is prediction” (p.127). Regression analyses reveal relationships among variables “but do not imply that the relationships are causal. An apparent strong relationship between variables could stem from many sources, including the influence of other currently unmeasured variables” (Tabachnick & Fidell, 1996, p.

131). The use of a multiple regression model involves the following four assumptions (Mertler & Vannatta, 2005): First, the DV is a linear function of the IVs. This means that increasing or decreasing one variable (X) will cause a corresponding increase or decrease on the other variable (Y). Second, variables have normal distributions. Third, IVs and DVs are accurately measured; and fourth, the errors (residuals) are normally distributed. Residual is the difference between the actual value of a dependent variable (DV) and the value of a variable that was predicted by a statistical model (Tabachnick & Fidell, 1996).

Testing of these four assumptions using scatter plots and histograms revealed there were no significant violations. These were the results: 1) variables were normally distributed, 2) linear relationship between the dependent variable and independent variables were found, 3) variables were measured without error, and 4) homoscedasticity (the variance of errors is the same across all levels of the IV) assumption was met for all IVs.

A series of standard multiple regression tests were conducted for every one of the three DVs: PPR, BilEd, and BTLPT. Tabachnick and Fidell, 1996 defined this model:

In the standard or simultaneous model all predictor or IVs enter into the regression equation at once; each one is assessed as it had entered the regression after all IVs had entered. Each IV is evaluated in terms of what it adds to prediction of the DV that is different from the predictability afforded by all other IVs. (p. 149).

In these multiple regression models, no interaction effects were considered. The IVs in this analysis were: SAT verbal, THEA reading scores, final GPA, and QUAL exams. THEA writing and math test scores were not included as predictors because in comparison to the THEA reading, very few students took the writing and math portions of this test. One of the criteria for entering cases in the regression analysis is that all cases must have values in all the IVs and DVs

selected for analysis. Although there is no consistent rule regarding sample size when considering power analysis and effect size in multiple regression (Tabachnick & Fidell, 1996), Stevens (2002) recommended a minimum of 15 cases per IV. Cohen (1992) provided a more comprehensive presentation of required sample sizes for multiple regression analysis, depending on the number of IVs or predictors. For a multiple regression/correlation analysis with significance tests at $\alpha = .05$, a medium effect size of .15, and five predictor variables, “the minimum required sample size is 91” (p. 158). Based on Cohen’s recommendations, the present study met the sample size guidelines for two of the regression models, PPR and Generalist Elementary Bilingual Education (EC-4 and EC-6).

A regression equation for each model was generated, taking the following form:

$$Y' = A + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k K_k$$

where Y' is the predicted value on the DV. A is the Y intercept (the value of Y when all the X values are zero), the X s represent the various IVs (of which there are k), and s are the coefficients assigned to each of the IVs during regression (Tabachnick & Fidell, 1996, p. 127). In the next sub-sections, the results for every one of the five models are presented.

Multiple regression model for TExES PPR exam. Descriptive statistics for the GPA, SAT, THEA reading, qualifying exam scores and PPR are presented in table 4.4. The number of cases in this analysis was $n = 157$. Table 4.5 presents the correlations between variables.

Table 4.4

Descriptive Statistics for Independent Variables in TExES PPR Regression Model

Variables	M	SD
PPR TEXES	255.29	15.35
SAT Verbal	414.59	80.84
SAT Math	417.9	73.14
THER Score	267.68	13.89
GPA	3.40	0.33
PPR QUAL	84.94	6.42

Note. $n = 157$

Table 4.5

Correlation Matrix of Variables in TExES PPR Regression Model

Variables	PPR TEXES	SAT Verbal	SAT Math	THER	GPA	PPR QUAL
PPR TExES	1					
SAT Verbal	0.58**	1				
SAT Math	0.38**	0.59**	1			
THER	0.39**	0.35**	0.36**	1		
GPA	0.29**	0.23*	0.19**	0.30**	1	
PPR QUAL	0.09	0.05	-0.01	0.01	0.02	1

Note. ** Correlation is significant at the 0.01 (one-tailed) *Correlation is significant at the 0.05 level (one-tailed) $n = 157$

Table 4.6

Summary of TExES PPR Regression- Full Model

	SS	df	MS	F	Sig.
Regression	14452.45	5	2890.49	19.59	0.00
Residual	22280.07	151	147.55		
Total	36732.52	156			

$$R^2 = .39$$

$$\text{Adj. } R^2 = .37$$

Note. Dependent Variable: PPR TEXES

Predictors: (Constant), PPR QUAL, SAT Math, GPA, THER, SAT Verbal

Table 4.7

PPR Regression Model with Coefficients and Significance Tests

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
(Constant)	131.31	23.30		5.64	0.00
SAT Verbal	0.09	0.02	0.48	5.96	0.00
SAT Math	0.00	0.02	0.02	0.20	0.84
THE-R	0.20	0.08	0.18	2.50	0.01
GPA	5.75	3.14	0.12	1.83	0.07
PPR QUAL	0.15	0.15	0.06	0.99	0.32

Note. Dependent Variable: TExES PPR

The model summary resulted in $R^2 = .39$ and adjusted $R^2 = .37$. Table 4.6 shows the ANOVA with the standard R^2 , and adjusted R^2 . The multiple R value for the full regression model was significantly different from zero, $F(5, 151) = 19.59, p < .0001$. The five predictor variables SAT verbal, SAT math, THEA reading (THE-R), GPA, and the PPR Qualifying exam contributed to 39% (37% adjusted) of the variability in PPR, the predicted variable. However, only two of the variables contributed significantly to prediction of PPR scores, SAT verbal and

THEA reading. The unstandardized regression coefficients (B), the intercept, and the standardized regression coefficients (Beta or β) are presented in Table 4.7. The standardized regression coefficient is a “regression coefficient expressed in z score form; interpreted as the amount of change in the DV associated with one standard deviation unit change in that IV, with all other IVs held constant” (Mertler & Vannatta, 2005, p. 344). Thus, based on the values of the regression coefficient that were statistically significant in this model, SAT Verbal standardized had more weight ($\beta = .48$) or had a much larger contribution to the variance in PPR scores than THEA Reading test scores ($\beta = .18$).

Multiple regression for TExES bilingual education elementary education. This model combines scores for the three different BilEd levels (EC-4, EC-6, and 4-8). Descriptive statistics for the GPA, SAT (Verbal & Math), THEA reading, BilEd QUAL, and TExES BilEd are presented in table 4.8. Table 4.9 presents the correlations between variables. Four variables are significantly correlated at $p = .01$ level, with the exception of the Qualifying Bilingual Education Exam.

Table 4.8

Descriptive Statistics for Variables in TExES Bilingual Generalist Regression Model

	M	SD
BilEd TExES	249.76	16.42
SAT Math	416.23	71.63
SAT Verbal	414.32	79.65
THER	267.56	13.74
GPA	3.39	.33
BILED QUAL	82.00	5.87

Note. $n = 162$

Table 4.9

Correlation Matrix for TExES Bilingual Education Regression Model

Variable	BilEd	SAT Verbal	SAT Math	THER	GPA	QUAL BilEd
BilEd	1.00					
SAT Verbal	0.59**	1.00				
SAT Math	0.53**	0.60**	1.00			
THER	0.41**	0.34**	0.35**	1.00		
GPA	0.33**	0.24**	0.20**	0.31**	1.00	
QUAL BilEd	-0.04	0.08	-0.04	0.02	0.08	1.0

Note. ** Correlation is significant at the 0.01 (one-tailed). $n = 162$

The model summary resulted in $R^2 = .45$ and adjusted $R^2 = .44$. Table 4.10 shows the ANOVA with the standard R^2 , and adjusted R^2 . R for regression was significantly different from zero, $F(5, 156) = 25.74, p < .0001$. The five predictor variables SAT verbal, SAT math, THEA reading, GPA, and the Bilingual Education Qualifying exam contributed to 45% (44% adjusted) of the variability in TExES BilEd performance, the predicted (outcome) variable. Four of the five predictor variables contributed significantly to the prediction of TExES BilEd scores: SAT Verbal, SAT Math, THEA Reading, and GPA. The unstandardized regression coefficients (B), the intercept, and the standardized regression coefficients (Beta or β) are presented in Table 4.11.

Four of the five IVs were significant predictors. The Qualifying BilEd exam was not a statistically significant predictor. The standardized regression coefficients (β) that were

statistically significant in this model, meaning that they significantly contributed to the variance in the TExES exam were both SAT (Verbal and Math) scores, THEA Reading, and GPA. Their respective contributions were based on the respective coefficient weights: SAT Verbal ($\beta = .36$), SAT Math ($\beta = .23$), THEA Reading ($\beta = .17$) and GPA ($\beta = .15$).

Table 4.10

Summary of Regression Analysis on Full-Model for Bilingual Education

	SS	df	MS	F	Sig.
Regression	19628.43	5	3925.69	25.74	.000
Residual	23791.18	156	152.51		
Total	43419.61	161			

$$R^2 = .45$$

$$\text{Adj. } R^2 = .44$$

Note. Dependent Variable: TExES Bilingual Education

Predictors: (Constant), SAT Verbal, SAT Math, THER, GPA, and QUAL BilEd

Table 4.11

TExES Bilingual Education Regression Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	β	t	
(Constant)	123.31	23.35		5.28	0.00
SAT Verbal	0.08	0.02	0.36	4.77	0.00
SAT Math	0.06	0.02	0.23	3.00	0.00
THER	0.20	0.08	0.17	2.51	0.01
GPA	7.39	3.13	0.15	2.36	0.02
QUAL BilEd	-0.05	0.17	-0.02	-0.31	0.76

Note. Dependent Variable: TExES Bilingual Education

Multiple regression models for TExES bilingual education domains. The TExES BiEd Generalist exam contains six areas of competencies or domains. In Appendix A, the results of multiple regression models, with their respective descriptive and correlation statistics, for every one of the domains included in the TExES Bilingual Generalist Exam are presented. Six domains are tested in grade levels EC-4 and EC-6: Bilingual Education, Language Arts, Mathematics, Social Studies, Science, and Fine Arts. However, the TExES 4-8 exam contains the first five domains and does not include a Fine Arts section. Table 4.12 presents the descriptive statistics for the six domains of the TExES BiEd exam and Figure 4.1 is a graph displaying the means for every one of the six Domains.

Table 4.12

Descriptive Statistics for TExES Bilingual Generalist with Domains

	N	Minimum	Maximum	M	SD
BIL EDUCATION	486	168	291	245.55	19.34
DOMAIN I BiEd	486	90	284	240.47	27.95
DOMAIN II LangArts	484	96	300	236.63	32.59
DOMAIN III Math	484	66	288	238.43	32.50
DOMAIN IV SocStudies	484	63	290	224.01	41.92
DOMAIN V Science	484	99	285	230.82	36.32
DOMAIN VI Fine Arts	415	120	300	237.76	31.81

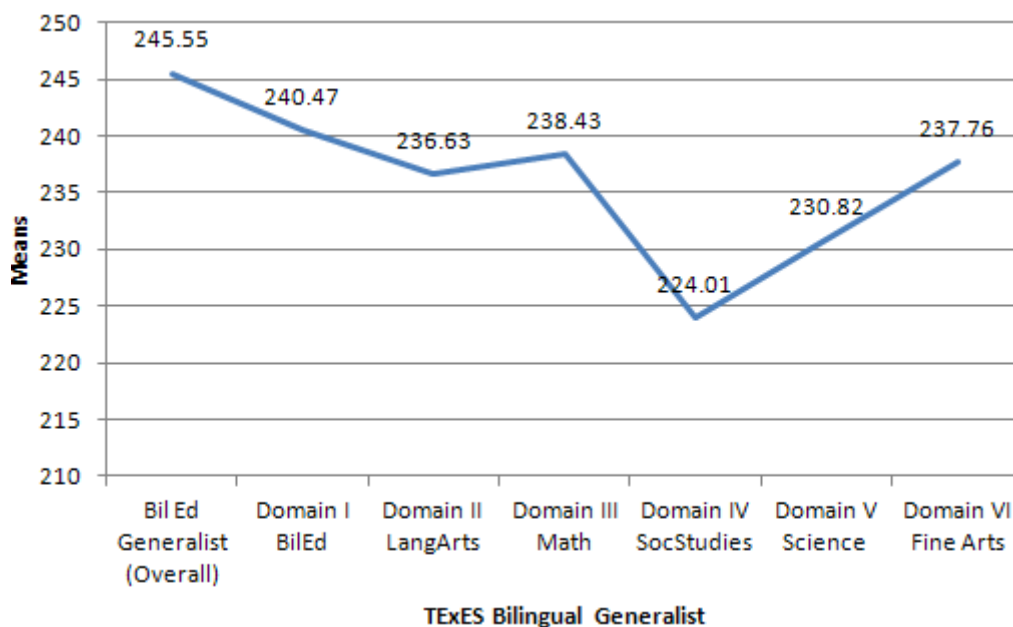


Figure 4.1. Graph presenting the means for the six domains in the *TExES Bilingual Generalist Exam*.

The regression models for every one of the six BilEd exam Domains were statistically significant but they had a wide range of prediction rates (R^2). Table 4.13 displays these values along with their respective statistically significant standardized coefficients (β). The prediction rate (Adjusted R^2) in every model varied from $R^2 = .15$ in the Language Arts Domain to $R^2 = .27$ in the Bilingual Education Domain. The two areas with the highest domains were Bilingual Education ($R^2 = .27$) and Math ($R^2 = .23$).

Table 4.13

Multiple Regression Models for the Domains in the TExES BilEd Exam

Domain	M	SD	R^2	Adj. R^2	Significant β
I BilED	240.47	27.95	0.29	0.27	THEAR (.25**) SATVerb (.25**) GPA (.15*)
II LanArts	236.63	32.59	0.18	0.15	SATVerb (.19*) GPA (.19*)
III Math	238.43	32.50	0.26	0.23	SATMath (.24**) THEAR (.22**) GPA (.15*)
IV SocStud	224.01	41.92	0.24	0.21	SATVerb (.21**) THEAR (.20**) GPA (.20**)
V Science	230.82	36.32	0.21	0.18	SATVerb (.28**)
VI Fine Arts	237.76	31.81	0.19	0.16	SATVerb (.23*)

Note. *Significant at $p < .05$ **Significant at $p < .01$

Multiple regression model for TExES BTLPT. This exam is computer delivered and is designed to assess proficiency in the Spanish language. It consists of 84 multiple-choice questions, four oral expression constructed-response tasks with five questions, and three written expression constructed-response tasks. This test contains four Domains: I) listening comprehension, II) reading comprehension, II) oral expression, and IV) written expression (SBEC, 2010). Table 4.14 presents the descriptive statistics for every Domain. These data demonstrate that the standard deviations for oral expression and written expression were larger in comparison to the other two Domains involving listening and reading comprehension. In addition, these two domains had higher means than the oral and written expression domains. A graph showing the averages for the Domains is presented in Figure 4.2. The four Domains do not

contribute equally to the overall BTLPT score. The designated percentages are graphically displayed in Figure 4.3, depicting the differential values assigned to the respective domains (i.e., more weight (53%) is assigned to oral and written expression skills than to the oral and reading comprehension skills (47%)).

Table 4.14

Descriptive Statistics for the Four Domains in the TExES BTLPT Exam

	BTLPT DOMAINS	M	MEDIAN	SD	MIN	MAX
I	Listening Comprehension	250.06	252.00	26.22	161	297
II	Reading Comprehension	258.84	264.00	20.58	195	300
III	Oral Expression	239.45	248.50	39.37	72	300
IV	Written Expression	220.57	234.00	50.33	84	300

Note. $n = 116$

Based on the means for the BTLPT Domains, students had more difficulty passing the oral and written expression portions of the exam in comparison to the listening comprehension and reading comprehension sections. Additionally, based on a minimum passing score of 240, the median score on the written expression domain shows that more than half of the students failed this part of the test. The highest mean and median scores were in reading comprehension with 258.84 and 264, respectively.

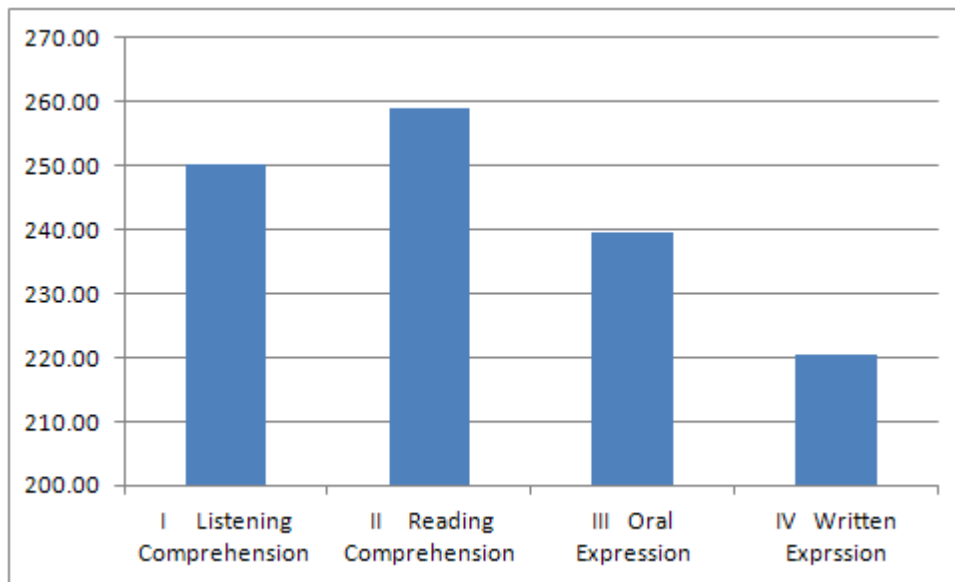


Figure 4.2. Bar graph presenting the average scores in the four domains of the BTLPT ($n=116$).

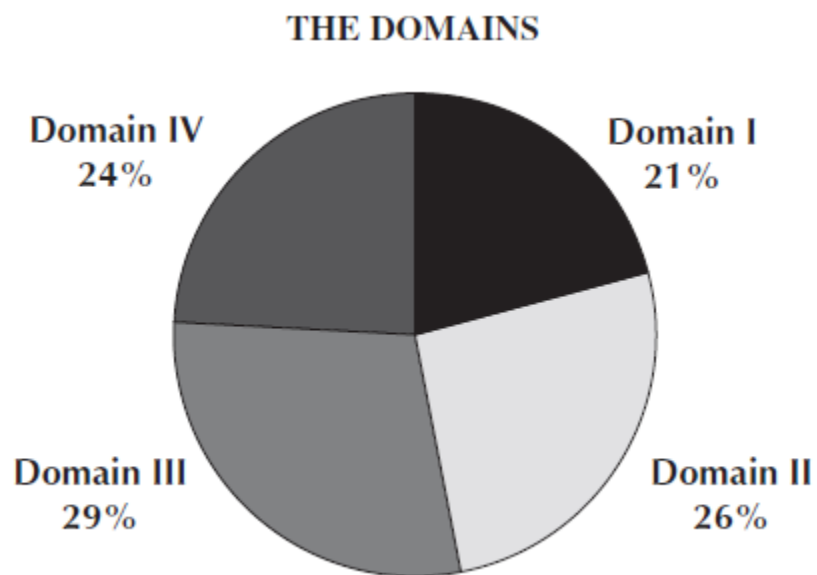


Figure 4.3. Percentages assigned to each one of the four domains in the BTLPT exam. TExES Preparation Manual 190 (SBEC/TEA, 2010)

Table 4.15 displays the descriptive statistics for the IVs (SAT, THEA, and GPA) and DV (BTLPT). Because there was no Qualifying Exam available for BTLPT, this variable was not included in the model. Table 4.16 presents the correlations between the predictor variables and the outcome variable.

Table 4.15

Descriptive Statistics for TExES BTLPT (Bilingual Target Language Proficiency Test) Regression Model

Variables	M	SD
BTLPT	254.41	16.59
SAT Verbal	400.77	63.64
SAT Math	421.54	59.10
THER	263.74	14.90
GPA	3.34	0.33

Note. $n = 39$

Table 4.16

Correlation Matrix in TExES BTLPT Regression Model

Variables	BTLPT	SAT Verbal	SAT Math	THER	GPA
BTLPT	1.00				
SAT Verbal	0.08	1.00			
SAT Math	-0.12	0.35*	1.00		
THER	0.26	0.17	0.41**	1.00	
GPA	0.50**	0.08	-0.06	0.17	1.00

Note. **Correlation is significant at the .01 level (one-tailed). *Correlation is significant at the .05 level. $n = 39$.

The model summary resulted in $R^2 = .32$ and adjusted $R^2 = .24$. Table 4.17 shows the ANOVA with the standard R^2 , and adjusted R^2 . R for regression was significantly different from zero, $F(4, 34) = 4.00$, $p = .01$. The four predictor variables SAT verbal, SAT math, THEA

reading, and GPA contributed to 32% (24% adjusted) of the variability in BTLPT scores. As shown on Table 4.18, only GPA was a significant predictor ($\beta = .43$). However, because of the small sample size, the validity of this model is questionable.

Table 4.17

Summary of Regression Model for BTLPT

	SS	df	MS	F	Sig.
Regression	3344.29	4	836.07	4.00	.01
Residual	7113.15	34	209.21		
Total	10457.44	38			

$$R^2 = .32$$

$$\text{Adj. } R^2 = .24$$

Dependent Variable: TExES BTLPT

Predictors: (Constant), SAT Verbal, SAT Math, THER, and GPA

Table 4.18

TExES BTLPT Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
(Constant)	121.71	45.55		2.67	0.01
SAT Verbal	0.02	0.04	0.08	.54	0.59
SAT Math	-0.07	0.05	-0.23	-1.41	0.17
THE-R	0.30	0.18	0.27	1.69	0.10
GPA	21.98	7.37	0.43	2.98	0.01

Dependent Variable: TExES BTLPT

Summary of quantitative results. Based on the quantitative research questions, these are the results:

- 1) How are GPA, SAT, THEA, and Qualifying Test scores of future Mexican American bilingual teachers correlated?

Correlation analyses revealed that there were statistically significant correlations between almost all the variables of interest, with the exception of the Qualifying PPR and TExES BilEd exams. GPA was moderately correlated with THEA (Reading and Math) SAT (Verbal and Math) and with the Qualifying BilEd exams although this correlation was relatively low ($r = .09, p = .05$). Interestingly, GPA was not correlated with THEA Math scores although SAT Math and THEA Math were highly correlated ($r = .55, p = .01$). As expected, THEA Reading was moderately correlated with THEA Writing, SAT (Verbal and Math), and slightly correlated with the Qualifying BilEd exam ($r = .11, p = .05$). THEA Writing was also moderately correlated with THEA Math and SAT (Verbal and Math). THEA Math was highly correlated with SAT Verbal ($r = .61, p = .01$), and SAT Math ($r = .55, p = .01$), and finally, SAT Verbal and Math scores were also significantly correlated ($r = .58, p = .01$).

- 2) To what extent do these variables predict the performance of these bilingual teacher candidates on state-mandated high-stakes tests (TExES), particularly Bilingual Education Generalist (BilEd) and Pedagogy and Professional Responsibility (PPR) exam scores?

The three multiple regression models for the TExES exams were statistically significant. The respective R^2 for each model varied. The BilEd model had the highest rate of prediction

($R^2 = .44$) That is, 44% of the variance in the BilEd exam can be attributed to the five predictors (THEA Reading, SAT Verbal, SAT Math, GPA, and Qual BilEd). However, only the first four variables were significant predictors. In order of importance the standardized coefficients for the four IVs were SAT Verbal ($\beta = .36$), SAT Math ($\beta = .23$), THEA Reading ($\beta = .17$), and GPA ($\beta = .15$).

The next regression model in terms of rate of prediction was TExES PPR. The adjusted R^2 was .37. For this model, only two IVs, SAT Verbal ($\beta = .48$) and THEA Reading ($\beta = .18$) were significant predictors, the most important one was SAT Verbal as shown by their respective standardized coefficients. The third TExES model was for the BTLPT exam. This was the weakest model, with an adjusted $R^2 = .24$. For this test, the only significant predictor was GPA ($\beta = .43$). One of the reasons for the low level of prediction in this model could be attributed to the low number of scores ($n = 39$) available for this new test, the BTLPT.

In this section, I have provided the results of the quantitative data analyses, including descriptive statistics for the predictor variables and outcome variables. Additionally, the answers to the quantitative research questions have been presented. In the next section, I present the qualitative findings.

Phase II - Qualitative Findings

In this study the qualitative phase sought to uncover the meanings behind the numbers by listening to the voices of Latina/o teachers. A multiple case study approach was employed to answer the qualitative research question:

- 3) How do Mexican American college students attending a Hispanic-Serving Institution (HSI) on the U.S.-México border describe their experiences of navigating the pathway to becoming "highly qualified" teachers?

Participants. The integration of the quantitative results with the qualitative was first implemented at the time of the final selection of the six participants in this study. The purposeful sampling method employed in this second phase attempted to find approximate matches for the demographic characteristics (age, gender, major, and number of TExES test attempts) of the archived data analyzed in the first phase. Following is an abbreviated profile description of the six research participants. Pseudonyms are used to ensure confidentiality of information.

Ana

Ana was a 38 year-old transnational student who was born in Mexico and attended schools in Mexico and the United States. She learned English in a private middle school in Border City. When she graduated from high school, she enrolled for the first time at Border University but stopped attending because in her own words she “felt lost”. Being the first in the family to attend college, she had difficulty navigating the university system. She could not find tutors or counselors to guide her. Ana had decided to resume her education and become a teacher after her children started school. While being an active, participating parent involved in her children’s school, she saw the need to have more bilingual teachers who could connect with their students’ culture. However, she described herself as “very scared” when she returned to school because she saw herself as a “drop-out”. She restarted at the local community college and

according to her, “it was an amazing experience”. The instructors there helped her gain confidence in her learning abilities.

Moreover, having a school of education advisor from Border University to assist her and other transferring community college students helped in her transition to the university’s teacher preparation program. In addition to being an outstanding student, because of her active involvement in her children’s school as a parent volunteer, she had earned several community awards. Ana graduated with a 4.0 GPA, passed the certification exams the first time she took them in the spring semester of 2013, and was hired as bilingual teacher at a local school district shortly after graduation. She attributed her academic success to the support she has received from her family, professors, and Blanca who is her close friend, classmate, and study partner.

Blanca

Blanca, a 36 year-old teacher candidate with two children, is a first-generation immigrant as well as the first in her family to graduate from college. She is a single parent who finished high school in Mexico. She had always wanted to be an educator, but because there were no schools of education in the Mexican city where she grew up, she took some courses in psychology and nursing. However, she could not complete her career in Mexico because she got married and migrated to the United States. Before resuming her college studies, while still married she administered her husband’s business and worked as a professional singer. She earned an associate’s degree in teaching from the local Community College before transferring to the university. Although Blanca felt confident speaking English, she had some difficulty writing it. Writing essays was one of the greatest challenges she encountered. Blanca and Ana met while taking some common courses in the teacher preparation program and since then, they studied together and formed a circle of collaboration and friendship, supporting each other.

Blanca passed the Spanish and the pedagogy certification exams the first time she took them, but she had taken the content exam three times before passing it.

Carlos

Carlos was the only male in the group of participants. He was 28 years old and had been working as a substitute teacher for two years. The school district where he had been working is in the same border locality where he had lived since his family migrated to the United States. The median income for residents in this rural area is one of the lowest in Border County (U.S. Census, 2010). Although he had already completed fourth grade in Mexico, he was placed in second grade when he enrolled for the first time in a U.S. public school. In 2010, Carlos completed the Bilingual Generalist 4-8 course work and graduated. After three unsuccessful attempts during the two years after graduation, he had stopped trying to take the certification exams. However, when I interviewed him, he stated he was studying again for the PPR test.

Delia

Delia was a 26 year old student who was born on the Mexican side of the border. Her family immigrated to the United States when she was in fourth grade. At the time of the first interview, she had just earned her master's degree as Instructional Specialist in Bilingual Education. She had some trouble passing the bilingual generalist certification exam and took it twice, passing it two years after completing her bachelor's degree course work. Although she is a fluent Spanish speaker, she found the Spanish proficiency test for the teacher certification difficult. Another area that was also problematic for her was the Social Studies Domain, the Social Studies History content area in particular. She thought that it could have been because her elementary schooling was in Mexico. Because of the limited teaching positions available in

Border City due to generalized budget cuts in public education (Cannella, 2007), she relocated to a larger Texas city after finding a job as a bilingual teacher.

Elena

Elena was born and raised in Border City. She was 27 years old and after earning a bachelor's degree in bilingual education and master's degree in special education, she became a university administrator. She described herself as friendly, sharing, loving, outgoing, understanding, compassionate, willing to help others, with a smile on her face, and always in a good mood. Before she was born, her parents and her two older brothers were undocumented immigrants. Because of this, the family was separated when she was growing up. Her father was deported and put in jail several times. Although Elena's father and mother level of education was second grade and middle school, respectively; their four children had graduated from Border University with education degrees. Shortly after Elena completed her teacher preparation course work in 2010, she took the three certification exams for Bilingual Generalist 4-8. She passed the PPR and BTLPT certification exams the first time she took them, but had to take the BilEd (4-8) twice.

Felicia

Felicia was a 22 year old female who had just graduated and completed her teacher certification when I interviewed her. She was born and raised in Border City. During her elementary and middle school years, she was placed in ESL courses. Her parents were college graduates and held professional positions. Becoming a bilingual teacher was her second choice because initially she wanted to be a marine biologist. However, after learning that this career was not offered in the local university and that there were limited jobs in this area, she opted for a teaching career. She passed the PPR and BilEd (EC-6) exams after her first attempt but had to

take the BTLPT test twice. Felicia attributed her lower score on this test to her lack of Spanish language practice after middle school. In high school all she spoke was English and her Spanish language skills were never academically developed.

This section has described the general profiles and characteristics of the six participants in this study. The next section presents the data collection procedures in this multiple case study method.

Qualitative data analysis. Findings from the primary method of data collection, i.e., face-to-face, semi-structured interviews are presented in this section. In addition, the following section presents findings from field notes, observations, and reflective journals, all of which were part of the qualitative data collection process.

Credibility. Credibility ‘usually refers to the credible linking of the steps in a process rather than to the establishment of reality’ (Krathwohl, 2009, p. 692). I attempted to establish credibility by securing the support of the participants. The strategies included triangulation, member checking, and peer debriefing. Triangulation has to do with determining the consistency of evidence gathered from different sources of data across time. In my research, I used different data sources to triangulate. These were observations, field notes, and interviews. Member checking was accomplished by sharing the interviews’ transcripts and my interpretative analysis with the participants. Peer debriefing was provided during the course of the research by the faculty supervising this dissertation research.

The qualitative data analysis procedures involved the utilization of grounded theory strategies: initial coding, focused coding, theoretical sampling, memo writing, and sorting. As Charmaz (2006)) points out, data collection, reflection, and analysis are continuous and cyclical processes that become integral aspects of qualitative studies. With this in mind, I first read all

interview transcriptions multiple times and then began to organize and classify the data, using qualitative analysis software. After the analysis of the interview transcriptions, field notes, observations, and reflection journal, I compared data with data to find similarities and differences. This process is also called *constant comparative method* (Glaser and Strauss, 1967).

Table 4.19

Common Themes Emerging from Initial Coding

1) Being afraid of entering a four-year higher education institution	11) Wanting to pursue higher academic goals after seeing other Latinos as role models
2) Feeling lost without any friends in college at start	12. Having difficulty mastering academic English and Spanish proficiency
3) Being first-generation U.S. college graduate and not having close friends or relatives who have attended college	13. Having feeling of self-efficacy after receiving good grades
5) Enrolling in a community college helped them build confidence in academic abilities	14 Overcoming feeling of devaluation for being Spanish native speaker and not knowing English
6) Making new friends at community college with similar social backgrounds was helpful	15. Learning bilingual theories helped them accept themselves
7) Receiving support and guidance from community college advisors was instrumental in their transition to Border University	16. Wanting to help other students like themselves
8) Describing community college instructors as caring and helpful	17. Making a difference in their students' lives
9) Being English Language Learners was a motivator to become a bilingual teacher	18. Connecting with peers at community college and Border University facilitated and improved study habits
10) Not being prepared for college level courses in HS	19. Learning collaboratively was an essential factor in preparing for exams
	20. Being perseverant and resilient in spite of failure

Coding process. Qualitative coding, “the process of naming segments of data with a label that simultaneously categorizes, summarizes, and accounts for each piece of data” (Charmaz,

2006, p. 43), was the first step in the data analysis. The first step of coding, or line by line coding, generated 48 codes. Through an iterative process of coding and re-coding, these codes were categorized into 20 common themes, presented in Table 4.19. The next step in my scrutiny, exploration, and interpretation of data was *focused coding*. Focused coding is the second major phase in coding of qualitative data (Charmaz, 2006). In this process, the codes are more directive, selective, and conceptual than line by line coding (Glaser, 1978). Table 4.20 shows the 10 most common categories emerging from focused coding of the interview transcripts. I established the credibility of the codes through triangulating data sources (transcripts and interview notes), member checking, and peer debriefing (Marshall & Rossman, 2011).

Table 4.20

Categories Resulting from Focused Coding

1. Feeling unprepared for college
2. Taking remedial courses in community college
3. Overcoming language and cultural barriers
4. Stopping college and returning
5. Forming learning circles
6. Achieving a sense of self-efficacy
7. Having caring academic advisors
8. Receiving financial support
9. Having family support
10. Taking relevant courses, related to certification tests

From the combination of these 10 categories, four major themes relating to their pathway to success experiences in the U.S. higher education system emerged from the analysis of the perspectives and insights of these Mexican American teacher candidates: 1) Persistence and resilience; 2) Biliteracy as cultural wealth; and 3) Collaborative learning; and, 4) Supportive Systems. These major themes are discussed in the next section.

Themes

Persistence and resilience. Pajares (1996) stated, “the higher the sense of efficacy, the greater the effort, persistence, and resilience” (p. 544). Thus teacher candidates’ resiliency and persistence are strongly related to their sense of self-efficacy. Self-efficacy has to do with the amount of confidence individuals have in their ability to complete tasks successfully; therefore judgments of efficacy forecast how much effort one expends and how long he or she persists on a task (Bandura, 1982). According to Bandura's (1986) social cognitive theory, self-referent thought mediates between knowledge and action, and through self-reflection individuals evaluate their own experiences and thought processes Knowledge and prior skill attainment are poor predictors of future performance because the beliefs people hold about their performance have more power than acquired learning (Pajares, 1996). In relation to teacher education programs, Yost (2006, p. 61) suggested:

It is not enough to merely increase feelings of worth or of competence; instead the focus should be on raising competence and confidence primarily through successful authentic mastery experiences. Practical applications of this construct for teacher education

programs should be geared to greater understanding of how to provide authentic experiences for teacher candidates that not only teach them what to do (raising competence), but how to do it well in a variety of contexts (raising confidence).

One of the major challenges that the participants experienced in the course of becoming certified teachers was passing state-mandated exams. Two teacher candidates were still trying to pass these exams while four of them had already passed them when data was collected. However, by the time I was writing the results at the beginning of the new school year, I received an email message from Blanca. She was happily informing me that she had passed the TExES Bilingual Generalist exam (after the third time). Blanca also shared with me the good news that she had been hired as a kindergarten teacher.

The experiences of academic struggle and “subtractive schooling” for these students had started in elementary school and continued on into high school (Valenzuela, 1999). Like many students of color who attend high schools in poor neighborhoods, they had been placed into a non-college track curriculum (Oakes, 2005). As Carlos (participant) expressed:

For me college was for only smart people with straight A’s. I did not consider myself a smart student since, you know, I did not really talk a lot of English. When I saw people in monolingual classes, I thought college was for them and not for me.

Five of the six teacher candidates expressed that they had completed high school without being prepared to attend college or without having a clear idea and expectation of enrolling in a university. Elena, a bilingual certified teacher with a master’s degree in education, employed as program administrator at Border University shared her experience:

To me, graduating from high school was a big deal. It sounds very naïve but I did not even know we had a university when I was in high school. When I started at [Border

University], my first year was a very bad experience because the first semester, I only passed one class out of four so I was placed in academic probation. The second semester I again passed one out of four so I was in academic probation for a whole year. I wasn't ready. I wasn't prepared.

Similarly, Carlos, who graduated in 2010, at the time of the interviews in spring 2013, had not been able to pass any of the three exams and had been working as a substitute teacher for the last three years. He had taken the Pedagogy and Professional Responsibilities (PPR) exam and the Bilingual Generalist exam more than three times and the Spanish proficiency test twice. He had passed the older version of the Spanish proficiency test (TOPT) the first time he took it, but due to a recent change by the State Board for Educator Certification, he had to take a more complex test (BTLPT) involving reading comprehension, writing expression, oral expression, and listening comprehension. Carlos narrated that he felt extremely anxious when he took the tests. It seemed that he had stopped taking the tests after several failed attempts. When he was describing his experiences, I could sense his sadness and disappointment with himself. In comparison to the other students, he had a low level of confidence in his academic abilities. This is consistent with Bandura's theory of self-efficacy; it seemed he had not had the authentic experiences in comparison to resilient teacher candidates. These experiences involved not only teaching him what to do (raising competence), but how to do it well in a variety of contexts (raising confidence) (Pajares, 1996).

Along the same lines, Ana described her initial college experience. Being the first in the family to attend college, she had difficulty navigating the academic system the first time semester she attended Border University right after graduating from high school. She could not find tutors or counselors to guide her. She stopped college, and it was not until her children

enrolled in school that Ana decided to resume her education. While being an active, participating parent in her children's school, she saw the need to have more bilingual teachers who could connect with their students' culture. However, she described herself as "*very scared*" when she returned to school because she saw herself as a "*drop-out*". She restarted at the local community college and according to her, "*it was an amazing experience.*" The instructors there helped her gain confidence in her learning abilities.

Educational researchers (e.g., Nieto, 2010; Flores, Sheets, & Clark, 2011; Fránquiz, Salazar, & DeNicolo, 2012; Yosso, 2005) have debated the causes for the low academic achievement of many Latinos, including Mexican Americans: "Despite the 2002 No Child Left Behind legislation intended to promote academic success across all student groups, Hispanic students experience academic success at much lower rates than students of other ethnic groups" (Chun & Dickson, 2011, p. 1581). Moreover, the U.S. Department of Education confirmed this fact:

Higher percentages of Hispanic students in 2009 dropped out of school than students in any other racial/ethnic group in the United States and a higher dropout rate among Hispanics born outside of the United States (32%) compared to those born in the United States (10%) partially accounts for the relatively high overall Hispanic rate (17%). (*The Condition of Education*, 2011, p. 66).

Critical race studies help to illuminate the ways in which these marginalized students' experiences with oppression symbolize important social, cultural and political struggles in the larger society (Lynn & Parker, 2006). This is important given our society's tendency to blame children of color and their families for their failure in school (Cuero & Valdez, 2011). Critical Race Theory (CRT) brings attention to structural inequalities, and points out that public schools

are unequal, inadequate and lacking in the necessary resources to help the majority of children become successful in the larger society. {CITE}

The intersection between socio-economic status and ethnicity is exemplified by the schooling experiences of these Mexican American bilingual teacher candidates. Participants who attended high schools located in impoverished zones were more likely to have had a high school curriculum that did not prepare them for college and, as a result, they had to enroll in remedial courses at the community college. Conversely, Felicia, who attended a high school located in a residential area with one of the highest household incomes (U.S. Census, 2010) and whose parents had university careers, stated that for her beginning college courses at UTEP were easy, “*it was high school stuff, but it was boring*”. Felicia passed the PPR and Bilingual Education exams on her first attempt. However, she had to take the Spanish proficiency exam twice because although her first language was Spanish, she had not practiced it since she completed elementary school. Although the teacher candidates in this study received some kind of financial support from their families, they subsidized their education with financial aid, federal loans and their own work. For instance, Felicia stopped receiving her parents’ financial support after they divorced and she had to move to an apartment. She narrated that in her last semester when she was completing her internship, she had to be in school early:

It was from 7:30 in the morning to 3:30 to 4 o’clock, then going straight to work until 9:30 or 10. So that was very hard because it was Monday through Friday but I didn’t quit. I needed to work. I had to pay for my apartment and it was very, very hard on me.

Taking remedial courses in English and mathematics at the local community college was part of the initial college experience of four of the six participants. This is consistent with a report by the National Center for Public Policy and Higher Education and the Southern Regional

Education Board (2010) which confirmed: “Every year in the United States, nearly 60% of first-year college students discover that, despite being fully eligible to attend college, they are not ready for postsecondary studies” (p. 1). After enrolling, these students learn that they must take remedial courses in English or mathematics, which do not earn college credits. In 2008, 42% of all students entering post-secondary education in the United States registered at community colleges (Community College Facts, 2009; Measuring Up, 2008). Approximately half did not register for a second semester (Provasnik & Planty, 2008; Millar & Tanner, 2011). The common element among community college students is a high drop-out rate (Millar & Tanner, 2011). The drop-out rate is particularly high among the academically underprepared (Grimes & David, 1999). Stopping college and returning several years after they had already formed a family were determinant factors in the subsequent academic success of Ana and Blanca, the two candidates who were in their 30’s and had children. In fact, both of them graduated with 4.0 and 3.9 GPAs, respectively. However, only Ana was able to pass the three certification exams on her first attempt. Blanca, on the other hand, had some difficulty passing the Bilingual Education TExES and was attempting to pass it for the third time.

In spite of institutional policies reproducing the dominant culture (Bourdieu, 1986), these Mexican American future teachers appropriated the language of the oppressor in order to have their voices heard (Daniels, 2001). As Blanca said, “I was an ELL. Now [as a kindergarten teacher], I want to promote dual language so children can explore and have more opportunities in life being bilingual.” During the first two years at the community college, they learned to navigate the school system while being guided and supported by the advisors and instructors at that institution. They developed a high sense of *self-efficacy* (Bandura, 1995) after repeated academic successes. Bandura explained that self-efficacy involves a behavior/thinking cycle and

that people who experience success are more likely to expect to do well and thereby work harder due to their expectation of achievement. According to Wilson and Youngs (2005), there are critical gaps in the research base and limited literature on teacher testing. They add that there has been no consensus on what are the most effective approaches to teaching, and that there is a moral, ethical, and practical imperative to produce better research, considering the high-stakes role that testing plays in determining who can become a teacher. They conclude that we cannot quantify or test for what makes a good teacher. These state-mandated tests for licensing teachers have also been criticized (Banks, et al., 2005) because they do not address important skills and knowledge that teachers must have in order to work with diverse students.

Persistence and resilience are two of the characteristics that some students of color have developed as a result of discriminative practices and policies such as high-stakes testing that privilege members of the dominant culture in the United States (Flores, Sheets, & Clark, 2011; Yosso & Solórzano, 2006). Diana shared one of her favorite phrases that her mother taught her; “*no te des por vencida*” [never give up]. These students as the pre-service teachers in Irizarry’s (2011) with Latino pre-service teachers continued “*en la lucha*” [in the struggle] while attempting to pass the certification exams. In the next section I discuss, biliteracy as cultural wealth, another relevant theme emerging from the qualitative data analysis.

Biliteracy as cultural wealth. As some educational researchers assert (Smith & Murillo, 2013), “curriculum, educational materials, and other elements of education policy do not always acknowledge or value the multiple languages in learners’ home lives and linguistic repertoires” (p. 301). Similarly, for four of the participants who attended K-12 schools in the US, their language was not recognized as part of their *funds of knowledge* (González, Moll, & Amanti, 2005). Instead of fostering *biliteracy* (the practice of producing and interpreting written texts in

two languages) and seeing as an asset, three of the four participants schooled in Border City K-12 public schools attended transitional bilingual programs. These programs aimed to quickly transition students into English-language classes (Montrul, 2013). As Elena (participant) attested:

When I was in middle school, I would not even talk. It sounds bad but now I look at it, and I am disgusted at the fact that I did not even want to talk to those who spoke Spanish because it was enforced in middle school: “Only English and only English”. So if you talked Spanish, you were the outsider. Now, I know after finishing my bachelor’[s], that it is essential to know Spanish. The culture it has, the weight that it carries professionally, I think it has helped me and allowed me to grow more academically and professionally. I am able to relate to those students who are struggling, learning English and who want to surpass having those obstacles of not knowing English.

Elena describes how learning about bilingual education theory and practices in the teacher preparation program contributed to helping her regain confidence in her academic and professional skills. In the case of Ana and Blanca, having attended P-12 schools in Mexico did not seem to affect their attitude toward their native language. Both of them passed the BTLPT the first time they took it. On the other hand, Felicia was schooled in a two-way bilingual program. The objective of these programs is to promote bilingualism and biliteracy in the heritage language and in the majority language (Montrul, 2013). The goal of these programs is to achieve dual language proficiency in two languages. For example, in Border ISD, these two-way bilingual programs enroll students who are native English speakers and native Spanish-speaking students. The percentage of time spent on each language varies from 50% to 90%, depending on the program and the grade level (Montrul, 2013). However, many of these two-way or dual bilingual programs do not extend beyond the 6th grade. Thus, the opportunities to continue

learning Spanish, especially the academic variety, are diminished once the students start middle school. This was the case for Felicia, although she was in a two-way bilingual program for six years, she said that once she started middle school, she started to use more English than Spanish. Once in high school, she exclusively used English. For this reason, she failed the BTLPT the first time she took it. Before she took it the second time, she prepared herself by reading Spanish books and magazines, by watching TV *novelas* (soap operas), and by talking more in Spanish to members of her family.

Being a native Spanish speaker was a powerful motivator to become a bilingual teacher for these participants as Delia expressed:

The reason I decided to become a bilingual teacher was because I lived in Juárez. I was born there and when I moved here [to El Paso] and I was in elementary school, it was difficult for me to learn English. Many of the teachers did not value my L1, my native language, and I took ESOL classes and it was really difficult for me to transition and to get to know the new culture and make new friends. It was very, very difficult even in high school getting to talk to my friends and for that reason I decided to go into education and to major in Bilingual Education to support those students because I have my perspective and I was one of the students who had difficult time learn the second language I would like to support those students as well. That is why I continue [advancing] my education in graduate school. To learn a little bit more.

Delia was motivated to become a bilingual teacher because her teachers did not value her native language. When her family migrated to the United States, it was very difficult for her to learn English, transition to a new culture, and make new friends. Furthermore, she decided to major in bilingual education because she wanted to support students like herself, who had trouble learning

a second language. Similarly, Carlos who was born in Guanajuato, Mexico and who migrated to the US with his family when he was 8 years old stated:

The reason that I chose to be a bilingual teacher was that I remember that when I was in school like elementary and middle school, I used to struggle a lot with English, understanding English... Later, when I was thinking - What I should study? Teaching came to my mind because of my own struggle. I thought how hard was learning English for me. I used to cry because of not knowing English. I used to always sit in the back. I was the quietest one. Now that I have a chance what to be, I would like to be a teacher and make a difference.

Carlos expressed that he struggled in school and used to cry because he did not speak English. He comes from a family of hard workers. His father, mother, and brother had to work as farm workers or general laborers. Carlos said that being exposed to this hard work motivated him to first, enroll at the local community college and then continue his studies at the university in the teacher preparation program. One of the phrases that he often shares with his students who do not want to study derives from his own experience: “*Life is hard, but without education, [it] is even worse.*” He added that he never saw a White person working in the fields. All he saw were Mexicans who only spoke Spanish.

During his elementary and high school years, Carlos did not really understand English well. His friends used to make fun of him if he spoke English. He usually sat in the back of the classroom and it seemed teachers did not care if he learned. For them, he was just another ESL student who would not graduate, much less go to college. Despite multiple attempts, Carlos had not passed the certification exams. He explained that he gets very anxious every time he takes the exams and feels he does not have enough time to carefully read the question and select the

correct answer. Because of his lack of college preparation in high school, he took remedial English courses at the community college. He was surprised to see so many students enrolled in these remedial courses because it seemed that many of the students spoke English very well. According to him, their English was perfect and he wondered what could have been happening. Later after he started to learn more about language acquisition theories, he understood. These students who were fluent English speakers were not proficient in the academic variety of English needed to succeed in college (Valdés, 2004). Carlos compared himself to them. That is, although he was a fluent Spanish speaker, he had trouble writing Spanish.

Along the same lines, Ana and Blanca had the desire to become teachers since their childhood years. For instance, at 7 years of age while still living in *Mexican City* (pseudonym), Ana taught English to her neighbors. She was enrolled at a Montessori school at two years old and when she was in middle school, Ana took English as a Second Language (ESL) courses at a U.S. private school. She said that she returned to finish high school in Mexico because the ESL classes were boring. By then, she had already learned English watching U.S. television programs for children. Blanca, who was born and raised in Mexican City, also wanted to be an educator but could not realize her dream because, according to her, when she completed preparatory school, there were no schools of education in Mexican City. Navigating the U.S. school system was difficult for her. Before reencountering her vocational interest in education, she attempted to be a nurse and after taking several courses, she found that she did not like that profession. Writing in English was also a challenge for her because although she had been able to develop a higher level of conversational English, she struggled with *academic English* - the ability to read and write the kind of English that educated adults use (Valdés, 2004). Valdés stressed this point by stating the ability to develop academic English goes hand in hand with

access to a much broader range of information and affords a wider set of opportunities, particularly economic opportunities. Further, Valdés (2013) emphasized that non-native English speakers continue to learn English throughout their lives.

Unfortunately, not all educators are aware of the struggle that some students go through when they are attempting to reach a high level of proficiency in two languages (Escamilla, 2006). Escamilla's (2006) study demonstrated that school teachers were not prepared to teach or assess biliteracy (Spanish/English) to Spanish speaking children attending a school in Colorado. With the exception of one teacher who studied education in Mexico, the elementary school teachers who participated in this study were not prepared to teach bilingual education. It is not surprising to find that it is not in the best interests of the dominant culture to teach proficiency in Spanish, a language that is considered inferior and spoken by members of a deficient culture (Gutiérrez, Morales, & Martínez, 2009). As Valenzuela (1999) has pointed out, instead of adding to the educational growth of students, these institutions alienate and subtract from the cultural and language practices of Spanish speaking students; "schools are organized in ways that fracture students' cultural and ethnic identities creating social, linguistic, and cultural divisions among the students and between the students and the staff" (p. 3).

Furthermore, Gutiérrez, Morales, and Martínez (2009) argue that deficit notions about the cognitive abilities and literacy of individuals from nondominant communities have persisted and continue to be areas of concern because they infiltrate school systems. The authors challenge this deficit view of culture and review different theories of literacy. The word re-mediating used in the title of their article suggests the intent of the authors of using diverse students' culture and language as mediators to learn in school. Along the same vein of perceiving language as a problem, Escamilla (2006) talks about the socially constructed term *semilingualism* and how it

has been applied to “characterize the linguistic abilities of children who are thought to be nonverbal in both English and their native language” (p. 2330). She extends the concept of semilingualism to reading and writing and calls it ‘bi-illiteracy’. The negative stereotypes that many teachers have regarding native Spanish speakers are not circumscribed to only K-12 schools, based on one of the participant’s experiences; these deficit views also occurred at the university level as evidenced by the experience of one of the participants. Delia, who now has earned a master’s degree in education and is ready to start a new job as a bilingual teacher, narrated how a new university Latina/o instructor in the teacher preparation program created a hostile and intimidating classroom environment for Delia. Delia expressed a strong emotion when she remembered how this instructor did not believe Delia was following the instructor’s advice of going to the university writing center to have her school papers reviewed. Delia perceived that the instructor had internalized a deficit-view of the Spanish language and the Mexican American culture as she narrated,

Sometimes I did not even want to respond to one of the questions because she [university professor] would say, “you are almost going to graduate and you are never even prepared – you will be a teacher and you did not even know this information?”

Macedo (1998) asserted that bilingual education models in the United States have been developed under the cultural reproduction ideology, leading to a neocolonial education model. Similarly, Giroux (1983) argued that the learning of English language skills alone would not enable linguistic minority students to acquire the “critical tools to awaken and liberate them from their mystified and distorted views of themselves and their worlds” (p. 226). As eloquently expressed by Freire (1970):

Cultural conquest leads to the cultural inauthenticity of those who are invaded; they begin to respond to the values, the standards, and the goals of the invaders. For cultural invasion to succeed, it is essential that those invaded become convinced of their intrinsic inferiority (p. 153).

Because the majority of Mexican Americans are products of years of schooling in the United States, many internalize the deficit and dominant views toward their own language, culture, and literacy practices (Fránquiz, et al., 2006; Luykx & Heyman, 2013). Moreover, Hall, Smith, and Wicaksono (2011) explain that the dominant language ideology plays a major role in shaping attitudes and beliefs. These authors suggest that we are under the spell of language and as a result, beliefs or myths that they name *dead-ends* create a wide range of misperceptions about languages and people who speak those languages: “we tend to equate language with thought itself, because we can’t see the join between them, and we identify languages with the groups who speak them, because that’s what’s mostly visible to us” (p.4). For instance, native English speakers who are biliterate are commonly held in admiration in the United States if they acquire competence and literacy in languages other than English. Conversely, language minorities who achieve functional literacy in English are generally not similarly admired by English-speaking monolinguals for their biliterate abilities (Wiley, 2005). Similarly, Valdés (2004) argues that “opponents of bilingual education argue passionately that if children are not taught in English, they will not acquire the common public language” (p.102).

In order to change deficit views of Latina/o students; it is vital that educators, students, and the general public understand the richness embodied in the *transnational* experiences of Latina/os. As exemplified by the bicultural and multiliteracy practices of these teacher candidates, students attending Border University have developed a cultural capital of

transnational experiences that have enriched them and have become part of what Yamamura et al. (2010) called *Borderland Cultural Wealth*. Felicia's poem illustrates this borderland cultural wealth, represented by her bicultural and bilingual roots.

I am from...

*I am from the collection of porcelain dolls on my dresser
from Victoria's Secret lotion and Reese's peanut butter cups eaten every day
I am from the green house on the Franklin Mountains
where the dark sky allows you to see the stars
where the coyotes roam the trails
I am from the Steelers lamp sitting on my nightstand
the moon glowing above
the luminescence shining through my window
I am from Sunday afternoon get togethers and loud conversations
from Rachel and Francisco
from a family divided in two; yet lucky enough to have two homes
I am from the procrastination habits and humorous cross fires
from If you don't eat you won't grow and You can do anything you set your mind to
I am from Puebla and Casas Grandes
from tamales and buñuelos
from the four day trip to North Carolina to visit my uncle and long nights driving through
rain and fog
I am from pictures in scrapbooks, home videos in totes, baby pampers and clothes in
bags, and
birthday cards stored in a closet*

In this poem, the essence of being a transnational student is beautifully expressed. It evokes emotions that may be difficult to understand for people who do not know how culturally enriched are the lives of border crossers. As Anzaldúa (1990) eloquently explained: “A woman-of-color who writes poetry or paints or makes movies knows there is no escape from race or gender when she is writing or painting” (p. xxiv). In her poem, Felicia not only alluded to her gender and Mexican American ethnicity, but also to her linguistic heritage and culture when she uses the Spanish word *buñuelos*, an essential dish in Mexican cuisine (Hackett, 2004). This is clearly an example of how some transnational Mexican Americans are proud of their heritage, recognizing the cultural wealth existing in the borderlands. As Fuentes (1992) rightfully stated,

The United States brings its own culture –the influence of its films, its music, its books, its ideas, its journalism, its politics, and its language – to each and every country in Latin America. We are not frightened by this, because we feel our own culture is strong enough, and that in effect, the enchilada can coexist with the hamburger. Cultures only flourish in contact with others; they perish in isolation. (p. 346).

Furthermore, this author critically examined the assumption that the United States was a melting pot. He claimed that the cultural dilemma of the American of Mexican descent was: “to integrate, or not? To maintain a personality and add to the diversity of North American society or to fade away in anonymity in the name of the after all nonexistent ‘melting pot’?” (Fuentes, 1990, p.347). In the next section, I proceed to discuss collaborative learning, an additional theme that emerged in the analysis.

Collaborative learning. Research has pointed to the importance of creating learning communities, especially for Latina/o students (Garcia, 1991). As Anzaldúa (1989) affirmed, “the

welfare of the family, the community, and the tribe is more important than the welfare of the individual” (p. 40). In the same way, this group of transnational Mexican American teacher candidates learned in school to succeed against all odds through collaboration as corroborated by Delia:

Working in teams has been essential for me. If I don't understand something, I have a friend or classmate who explains or gives me her point of view. When you are wrong, you learn from what the other person is saying.

This orientation toward collaborative learning is founded by a sense of community belonging and support (Stryhorn, 2012). In contrast to this community orientation, a strong sense of individualism is reinforced in U.S. public education (Rippberger & Staudt, 2003). These authors' study revealed that in comparison to Mexican classrooms, U.S. teachers stressed more individualism and competition than collaborative skills or community-building. Academic-cohort programs are common in graduate education as is the case for the undergraduate programs in the college education at Border University. Research suggests that colleges should consider their long-term benefits for Latina/o undergraduates in general (Cortez, 2011).

Moreover, collaborative learning was an important aspect in the successful completion of teacher certification for Ana, Blanca and Delia. In Ana's words:

Trabajar en equipo para mí eso ha sido clave - que si yo no entiendo una cosa, tengo una compañera o compañeras que te explican o te dan su punto de vista. Cuando tú estás equivocada, ellas te dan su punto de vista y así como que aprendes cuando otra persona te lo dice.

[Working in teams for me has been the key – if I do not understand something, I have a classmate or classmates who explain or give you their point of view. When you are wrong, they give you their point of view and this is the way that you learn when other person tells you.]

These learning circles of collaboration helped these students not only to study but also to prepare for teacher certification tests. They would form study groups and share resources as test manuals, textbooks, websites, and notes. The collaborative relationships also facilitated the creation of strong bonds of friendship and camaraderie between these Mexican American teacher candidates.

Incorporating values of altruism and reciprocity have contributed to the development of a collectivist orientation which, in turn, has formed an aspect of *Mexicanist* cultural knowledge (Vélez-Ibañez, 1983; Zamora, 1993). According to Zamora (1993), this term captured the idea of community solidarity and a form of cultural nationalism that has been historically utilized by Spanish-language newspapers and mutual aid societies. These dense social networks have been founded on the cultural construct of *confianza* [mutual trust] (Vélez-Ibañez, 1983). In his study of *tandas*, Vélez-Ibañez defined *confianza* as “the willingness for persons to stand in a reciprocal relationship with one another” (p. 10). Critical to the cultural construct was that “reciprocity is an exchange in which people give each other material items, favors, or labor without expecting anything in return at that time or in immediate future” (p. 11). These aspects may be part of the funds of knowledge that shaped the identity of these future Mexican American teachers. However, one cannot automatically assume that Mexican American students who possess funds of knowledge would automatically bring these cultural resources into the classroom or appreciate those of their students.

Scholars have pointed out the subtractive process of schooling and the marginal position that people of color continue to occupy, regardless of their upbringing and academic or professional success (Macedo, 2000; Fránquiz, Salazar, & DeNicolo, 2012; Irizarry, 2011; Valenzuela, 1999, 2005). It is important to note that only five of the six participants brought up collaborative learning as one aspect that helped them prepare for the teacher certification exams. Carlos was the exception. He felt isolated once he lost contact with his friend, Diana. He said that because both Diana and him were so busy they did not have time to meet very often once they completed their program of studies. During the course of my conversations with Carlos, by ‘reading’ his body language, (i.e., his tone of voice and sad look) I observed that talking about not passing the certification exams evoked in him feelings of helplessness and hopelessness. In the next section, I discuss how and what kinds of supportive systems helped these students succeed academically during their journey to become certified bilingual teachers.

Supportive systems. Based on the experiences that the four students who attended the local community college narrated, they perceived the instructors and counselors at that institution as supportive with whom the students formed meaningful relationships that helped them build confidence in their academic abilities. Diana, Carlos, Blanca, and Ana described the counselors at the community college as more caring and empathetic than the ones at Border University

Ana contrasted her experiences at Border University and at Community College:

For me, thinking of Border University was overwhelming because the first time [I attended] I didn't have a good experience – I was very young. I had a one year-old [child]. My attention was somewhere else. Now he is 19 and I have a 15 year old as well. I am attentive to them but they do not require my attention 100%, right. I thought it was

going to be harder [school] because I was older. I thought I was not going to be able to learn. I felt very intimidated coming back to Border University. Then I think my experience at community college, because when I returned, I started at community college and it was such an amazing experience.

Ana adds that at the local community college she gained confidence and that confidence helped her become a motivated student ready to excel. According to her, community college professors were willing to help students – “*they’re committed to your success*”, she said. As a result of this totally different experience at community college, her mindset changed and she felt empowered, with a positive attitude. Ana explained how she felt more confident after graduating with an associate’s degree from the community college.

The professors are there to help you, to guide. There are more classes. I gained confidence. I gained confidence and that confidence is what helped me here at Border University. And then professors are also willing to help you – they’re committed to your success. It was a totally different experience [from Border University] but it was because my mind set changed. I was committed; I was motivated because I found that motivation at community. I had 100s so I knew I could do it. I felt empowered. Yes, I felt empowered. So I came here with a positive attitude and that’s how I changed.

Conversely, Elena described her negative experience with a UTEP counselor during her freshman year:

When I started at Border University [as college freshman], I wanted to become a physical therapist and I met with one of the advisors. He was a White male working at the academic services and he told me that as a Hispanic female I would not be able to even

pass the courses for physical therapy so I completely changed the degree that I wanted to fulfill. And since my two older brothers were in education, I said I would go toward education. That is the only reason I got my degree in education.

Elena perceived that the advisor did not help her and that, on the contrary, he was showing the stereotypical behaviors that some members of the dominant group in the United States overtly displayed toward groups of people they perceive as inferior. However, Elena narrated that during the first semesters and when she saw this advisor, she was failing almost all her courses and her GPA was very low (less than 2.0). She also said that this was because she did not know what to expect in college and her parents never mentioned the possibility of her or her siblings attending college. She did not even know there was a university in the city. In spite of the advisor's low expectation, Elena went on to complete her bilingual teacher certification, earned a master's degree, and she is now employed as an administrator at Border University. In discussing the reasons for departure from commuter institutions such as Border University, Torres (2006) citing Braxton *et al.* (2004) explains, "support from significant people would decrease the likelihood of departure from the institution" (p. 49).

The supportive role that Hispanic-Serving Institutions (HSIs), such as Border Community College and Border University, played for this group of Mexican Americans and for this borderland community in general is confirmed by research (Torres & Zerquera, 2012). In reviewing the roles of HSIs, Torres (2012) maintained that HSIs play an important role in educating Latino college students. According to this researcher, HSIs "have 25% of their enrollment made up of Latino students and at least 50% of their students receive need-based assistance" (p. 260).

Furthermore, Baez, Gasman and Turner (2008) in discussing Minority-Serving Institutions (MSIs) affirmed that “racial and ethnic minorities are disproportionately represented in the small number of MSIs” (p. 3). In addition to HSIs, MSIs include historically Black colleges and universities (HBCUs) and Tribal colleges and universities (TCUs). Baez et al. (2008) attribute the disproportionate lower number of African America, Hispanic, and Native American students in higher education in comparison to White or Asian-American students to several factors. Most of these students are first-generation college attendees; they often come from poor and low-income households; they can barely afford post-secondary education; they attend poor, segregated public schools; and they experience hostility and unsupportive environments at many historically (HWIs) and predominantly White institutions (PWIs). These researchers add that “bur for MSIs, many students of color would have a significantly lower chance of attaining postsecondary education. Baez et al. (2008) stress the supportive role of MSIs which derives “from their collective missions to educate and graduate students from underrepresented groups, the culturally sensitive programs they provide those students, and the public service they provide those students, and the public service they perform for their racial and ethnic communities “(p. 3).

Indeed, the participants in this study presented here can be compared with the typical student attending a MSI. That is, receiving financial and caring support from Border University and Border Community College advisors and faculty helped five of them attain their academic goals and become certified teachers. These findings are consistent with prior research conducted at this same university (Valenzuela & Munter, 2012). The ones that succeeded against the odds were, for the most part, first-generation college students in need of financial aid and they had graduated from low-income high schools. In fact, Border University reported in 2012 that out of

the 18,883 students who applied for financial aid, 76% was the percentage of need that was met for students who were awarded any need-based aid (CIERP, 2012). Moreover, *Washington Post* recently ranked Border University in first place for promoting social mobility among its student population. Baez et al. (2008) urge MSIs to form coalitions by joining forces to better fund their positions. Their concluding remarks are thought provoking when they state that MSIs are treated very differently by accrediting agencies. Citing Donahoo and Lee's research, Baez et al. (2008) argue that "cultural beliefs and stigmas get expressed in seemingly neutral accrediting practices ... perhaps even in purportedly neutral journal practices" (p. 16).

As evidenced by the perspectives of these teacher candidates, the challenges they experienced are sometimes unfamiliar to many academic advisors, administrators, and educators in institutions of higher education (Irizarry, 2011). This author explains that this is "in part because the voices of students of color are often rendered mute, especially in regard to issues of racialized discrimination". (p. 2816). Indeed, "social support in the school has been implicated in the academic adaptation of students, and immigrant students appear to be no exception" (Suárez-Orozco, Pimentel, & Martin, 2009).

Summary of qualitative findings. In conclusion, the objective of the qualitative approach in this study was to listen to the voices of Mexican Americans and develop a deeper understanding about the complex web of issues related to the experiences of these transnational students residing on the Texas-Mexico border who are preparing to become bilingual certified teachers, from the students' perspectives.

Research question three. The research question guiding the QUAL phase was:

How do Mexican American college students attending a Hispanic-Serving Institution (HSI) on the U.S.-México border describe their experiences of navigating the pathway to becoming "highly qualified" teachers?

The findings of this second phase of the study involving the concurrent analysis and interpretation of data revealed that contrary to racial stereotypes, some transnational students, particularly Mexican American bilingual teacher candidates such as the participants in this case study, are able to overcome the obstacles and structural barriers created by historical, political and socioeconomic forces established with the deterministic goal of perpetuating the status quo and privilege of the dominant group (Darder, 2011; Delgado Bernal, 2001, Foley, 2010; Ladson-Billings, 2009, Nieto, 2010; U.S. Commission on Civil Rights, 1971-1974; Yosso, et al., 2009). The four major themes that emerged from the participants' experiences and perceptions provide an understanding of how they navigated their journeys to becoming certified teachers. These themes were: 1) Persistence and Resilience, 2) Biliteracy as Cultural Wealth, 3) Collaborative Learning, and 4) Supportive Systems. These themes represent the major aspects in the lives of these students that had a major influence and impact in their teaching certification process. In the next section, the mixing of QUAN and QUAL results is discussed.

Phase III - Mixed Methods Integration

Rationale for integrating quantitative and qualitative findings. According to Creswell and Plano Clark (2007), integrating the quantitative and qualitative data and connecting the two data bases is one of the main objectives of mixed methods research. This mixed methods study integrated both quantitative and qualitative research methods in three phases during the research process to better understand the process of teacher preparation for Mexican American teacher

candidates seeking bilingual education certification. The rationale for integrating quantitative and qualitative data within the same study was that mixing the two methods would more fully answer the research questions and develop a more robust and meaningful picture of the research problem (Onwuegbuzie & Combs, 2011). Furthermore, my decision to employ a mixed method design was guided by the purpose of the study and the research questions. As Greene (2007) asserts, “a study does not begin with design or method, but rather with a well-defined and well-justified purpose and a clearly set of inquiry questions”. (p. 97).

Mixing of quantitative and qualitative findings. The mixing of both methods took place at different stages during the research. First, in the selection of participants for the qualitative phase, secondly, in the development and refinement of interview questions, and thirdly in the combined interpretation and discussion of the quantitative and qualitative findings. The first two processes of mixing methods that occurred in the intermediate stage were explained in the methodology chapter. In the discussion chapter, I integrated the finding of the first two phases to answer the mixed methods research questions.

Research question four. The overarching mixed methods research question was: To what extent does combining quantitative and qualitative findings provide a better understanding of the bilingual teacher certification process for Mexican Americans? The next two sub-questions helped answer the main question. What do the quantitative data tell us about the qualitative data? What do the quantitative data tell us about the qualitative data?

These questions emerged from my philosophical, epistemological, and ideological stance of engaging in a dialogue with diversity, including social inquiry methodology (Greene, 2007). As this author asserts, “a mixed methods way of thinking actively engages with epistemological differences in order to respect multiple ways of knowing” (p. 27).

Summary

In this chapter, I have presented the results of the analyses of quantitative and qualitative data. The quantitative results were based on the statistical analyses of three-year archived data for bilingual teacher candidates. Correlation and multiple regression tests were conducted. The three regression models using SAT, THEA Reading, and GPA as predictors and having the TExES PPR, Bilingual Generalist, and BTLPT as outcome variables were statistically significant. The qualitative findings were based on a multiple case study approach. Employing grounded theory strategies, data consisting in interview transcripts, field notes, observations, and reflection journals were analyzed. The four themes emerging from the analysis (persistence/resilience, biliteracy as cultural wealth, collaborative learning, and supportive systems) were discussed. In the next chapter, I discuss how the results of these two approaches were interpreted to produce a better understanding of how Mexican American teacher candidates navigate their pathways to bilingual teacher certification.

Chapter 5

Discussion

The purpose of this study was to explore at the macro and micro levels the bilingual teacher licensure process for Mexican Americans who graduated from a traditional teacher preparation program at a HSI located on the Texas-México border. At the macro level, this examination included the testing of a predictive model that could possibly explain which variables were associated with successful teacher licensure at different levels throughout a traditional teacher education program (admission to the university, teacher candidacy, student teaching, graduation, and certification). At the micro and deeper level (Geertz, 1973), this study sought to explore the perceptions and experiences of a selected group of bilingual Mexican Americans who had gone through the teacher preparation program and met the following criteria: graduated from Border University in academic years from 2010 to 2013 with a bachelor of Interdisciplinary Studies with a major in Bilingual Education and had taken the Texas certification exams at least once.

This chapter is divided in four major sections. In the first part, I summarize the quantitative results and qualitative findings by answering the research questions related to these two approaches. Secondly, I discuss the meta-inferences derived from the integration of the two phases in this study. Thirdly, I provide a summary of my role as researcher. Fourthly, I present the assumptions and limitations of the study; and in the last section, implications and recommendations are discussed.

Summary of Quantitative Results and Qualitative Findings

In this section, a discussion of the summarized results for Phases 1 and 2 of this study are presented. The quantitative results were based on the three multiple regression models that were tested using the three TExES exams for Bilingual Generalist teacher in Texas as DVs, and SAT (Verbal and Math), THEA Reading, and GPA as IVs. From the qualitative findings, four common themes emerged from the inductive analysis of the qualitative data derived from a multiple case study involving interviews with six Mexican American teacher candidates who had graduated with a Bachelor's of Interdisciplinary Studies and had taken the Bilingual Generalist exams.

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Results of the quantitative phase indicated that there were significant relationships between SAT test scores, THEA test scores, and final college GPA. Earlier research also indicated relationships between these variables and the pedagogy certification test, but none of those studies included all of the predictor variables (Barton, 2008; Brown, Brown, & Brown, 2008; Burke, 2005; Gitomer et al., 2011; Jones, McDonald, Maddox, & McDonald, 2011; Justice & Hardy, 2001; Pohan & Ward, 2011; Tanner, 2003). Furthermore, none of these studies had included all these predictor and outcome variables, involving a large sample of Mexican American students attending a HSI on the US-Mexico border.

Gay, Mills, and Airasian (2003) indicate that correlational research is conducted so that predictions can be made, and prediction studies are performed to assist in making decisions regarding individuals or to assist in various types of selection. They are also used to test variables that are thought to be good predictors of a criterion, and then to determine the predictive validity of measuring instruments, as well as to predict the likeliness of success in a certain area of study. Since initial significant correlations were established between variables, the subsequent step was to develop predictive models that could predict the probability of success on the TExES Bilingual Generalist exams.

The three regression models for the TExES exams were statistically significant. The R^2 for each model varied. The BilEd model had the highest rate of prediction, with 44% of the variance in the BilEd exam being attributed to four predictors (THEA Reading, SAT Verbal, SAT Math, and GPA). The standardized coefficients' weights for the four IVs in order of importance were: SAT Verbal ($\beta = .36$), SAT Math ($\beta = .23$), THEA Reading ($\beta = .17$), and GPA ($\beta = .15$). This means that SAT verbal had a higher level of prediction than GPA.

The next regression model in terms of rate of prediction was TExES PPR. The adjusted R^2 was .37. For this model, only two IVs, SAT Verbal ($\beta = .48$) and THEA Reading ($\beta = .18$) were significant predictors. Based on the β weight, the most important contributor to the prediction model was SAT Verbal. The third TExES model was for the BTLPT exam. This was the weakest model, in terms of prediction since it had an adjusted $R^2 = .24$. The only significant predictor was GPA ($\beta = .43$). Given that this test measures Spanish proficiency in terms of oral comprehension, reading comprehension, oral expression, and written expression, it is not surprising that the English standardized SAT and THEA tests were not significant predictors.

These findings are significant because although considerable research has been conducted

with respect to the issues of standards, teaching, and teacher preparation, studies attempting to identify the predictors of Mexican American candidates' success in teacher preparation programs employing quantitative methods are scarce (Poelzer, Zeng, & Simonsson, 2007). Few quantitative studies have been conducted at Southern Texas universities. One of these studies is the one conducted by Poelzer and his colleagues (2007) at a HSI where 87% of the population is Hispanic. They found that English language skills predicted success on the certification exams. In a similar study conducted in South Texas, Zeng, Simonson and Poelzer (2002) developed a prediction model using logistic regression. Their model predicted 71.7% of the variance on the scores in the former Texas Pedagogy certification exam (ExCET), using GPA and TASP (former THEA) Reading test scores. Similarly to the results in the present study, the Qualifying (benchmarking) tests were not significant predictors. These research results suggest that the qualifying tests may not be very useful tools for the teacher certification tests.

To summarize, the quantitative results showed that high-stakes testing at all academic levels for future teachers continues to have a strong and correlated effect on their pathway to become highly qualified teachers as measured by the TExES exams.

The findings of the second phase of the study involving the analysis and interpretation of qualitative data revealed that contrary to racial stereotypes, some transnational students, particularly Mexican American bilingual teacher candidates such as the participants in this case study, are able to overcome the obstacles and structural barriers created by the political and socioeconomic structures with the deterministic goal of perpetuating the status quo and privilege the dominant group (Darder, 2011; Delgado Bernal, 2001, Foley, 2010; Ladson-Billings, 2009, Nieto, 2010; Yosso, et al., 2009). The four major themes that emerged from the participants' experiences and perceptions provide an understanding of how they navigated their journeys to

becoming certified teachers. These themes were: 1) Persistence and Resilience, 2) Biliteracy as Cultural Wealth, 3) Collaborative Learning, and 4) Supportive Systems.

Mixed Methods. Integration of Quantitative Results and Qualitative Findings

According to mixed methods researchers (Creswell & Plano Clark, 2007; Greene, 2007; Teddlie & Tashakkori 2009), one of the rationales for mixing methods is to answer a mixed method research question and the way that this is generally done is to connect the quantitative and qualitative methods at one (or more) point(s) in the study. Consequently, in the research presented here, the mixing of methods occurred at three different points: (1) in the selection of participants for the qualitative phase; (2) in the development of additional questions for the semi-structured interviews; and (3) in the integration of quantitative results and qualitative findings to develop meta-inferences (Teddlie & Tashakkori 2009). The process of integrating at the first two points was explained in the methods section. In this section, I discuss the third aspect of integration.

Meta-inferences are “conclusions or interpretations drawn from separate quantitative and qualitative research strands of a study” (Creswell & Plano Clark, 2011, pp. 212-213).

Furthermore, Teddlie and Tashakkori 2009 assert that the quality of the inferences a researcher makes in a mixed methods study also depend on the strength of the inferences that emerge from the quantitative and qualitative strands of the study:

High quality QUAL and QUAN strands are necessary (but not sufficient) for a high quality MM study. In other words, you might make very credible inferences on the basis of your QUAL and QUAN results but fail to integrate them well at the end of the study. (p. 291).

Consequently, in this last phase of this research, I answered the fourth, broad question by creating a dialogue between the quantitative and qualitative findings through the process of answering the two more focused questions which were part of the broader question.

4) To what extent does combining quantitative and qualitative findings generate new knowledge and new insights about the bilingual teacher certification process for Mexican Americans?

a) What do the quantitative data tell us about the qualitative data?

b) What do the qualitative data tell us about the quantitative data?

Self-efficacy as framework. To answer these questions, Bandura's *self-efficacy* (1995) theory served as a framework to explain the combined results of the quantitative and qualitative findings. Self-efficacy theory is part of a larger theoretical framework known as *social cognitive theory* which postulates that human achievement depends on interactions between one's behaviors, personal factors (e.g., thoughts and beliefs), and environmental conditions (Bandura, 1995). The notion of self-efficacy has a "long history in social and motivational psychology" (Boykin & Noguera, 2011, p. 51). Bandura first postulated the concept in 1977 by stating: "An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the (desired) outcomes" (p. 193). Later, Bandura (1995) elaborated on his original definition by referring to perceived self-efficacy as "beliefs in one's capabilities to organize and execute the course of action required to manage prospective situations" (p.2). Bandura (1995) proposed that people make causal contributions to their own psychological functioning through mechanisms of personal agency adding that "among the mechanisms of agency, none is more

central or pervasive than people's beliefs of personal efficacy" (p. 2). Moreover, Pajares (1996) emphasized that sociocultural aspects played a major role in the development of personal agency. Because personal agency is socially rooted and operates within sociocultural influences, individuals are viewed both as products and as producers of their own environments and of their social systems.

According to self-efficacy theory, there are four sources of efficacy beliefs: *mastery experiences, vicarious experiences, social persuasion, and physiological and emotional states* (Bandura, 1995). Table 5.1 presents a matrix displaying the four sources of self-efficacy theory in connection to the quantitative and qualitative results.

Mastery Experiences. The most effective way of creating a strong sense of self-efficacy is through mastery experiences or personal accomplishments (Bandura, 1995). Successes build a robust belief in one's personal efficacy. Failures undermine it, especially if failures occur before a sense of self-efficacy is firmly established. Schunk (2003), assert that "compared with students who doubt their learning capabilities, those who feel efficacious for learning or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve a higher level" (p. 161). The mastery experiences of the six teacher candidates were represented by the quantitative results (SAT, THEA Reading, GPA, TExES scores) and the qualitative findings (self reported GPA, SAT and THEA scores, number of times participants took the TExES exams, and their teacher certification status). These quantitative measures of performance were associated with persistence and resilience, one of the themes that emerged from the qualitative data.

Table 5.1

Matrix Integrating Quantitative and Qualitative Findings through Self-Efficacy Theory Sources

Case	Performance Experiences	Vicarious Experiences	Social Persuasion	Physiological & Emotional State
Ana	PPR =1 BilEd=1 BTLPT=1 Above average SAT, THER, GPA Certified	<i>"Seeing people like you motivated me to pursue a master's and even a doctoral degree"</i> Attended private schools in Mexico and US.	<i>"My community college professors were amazing. I felt they wanted me to succeed."</i>	<i>"Being at Border College was an amazing experience"</i>
Felicia	PPR =1 BilEd=1 BTLPT=2 Above average SAT, THER, GPA Certified	<i>"My parents have bachelor's degrees. My mother is a nurse and my father is a supervisor"</i> College preparation, enriched curriculum in high school.	<i>"My mother researched with me my college options"</i>	<i>"I learned to write poems to express my emotions"</i>
Delia	PPR =1 BilEd=2 BTLPT = 1 Average SAT,THER, GPA Certified	<i>"My sister is a medical doctor in Mexico"</i> Non-college preparation in high school	<i>"In my master's program, I learned so much from my professors that I became proud of my culture"</i>	<i>"I used to cry because one of the instructors did not believe I was going to the writing lab as she advised me"</i>
Elena	PPR =1 BilEd=2 BTLPT=1 Average SAT, THER,GPA Certified	<i>"I decided to become a teacher after seeing my two older brothers became certified teachers"</i> Non-college preparation in HS.	<i>"Working at Border University has helped me build confidence on my abilities"</i>	<i>"I was so upset when the advisor told me I could not be a physical therapist"</i>
Blanca	PPR =1 BilEd=3 BTLPT=1 Below Average SAT, THER Above average GPA Certified	<i>"Having a friend like Ana helped me improve my grades"</i> High School in Juarez Non-college preparation Difficulty with academic English	<i>"Graduating from college was such a great event for all my family."</i>	Feelings of anxiety were observed after not being able to pass the first time.
Carlos	PPR >3 BilEd = 3 BTLPT =1 Below average SAT,THER,GPA Not certified	<i>"Seeing my family working so hard in the field, motivated me to enroll in college"</i> Rural area HS. Non-college preparation. Difficulty w/ academic English/Spanish	<i>"Delia motivated me to not give up and take the tests again"</i>	<i>"I used to be afraid every time I had to take the certification exams but Delia encouraged me to try again."</i>

Furthermore, as evidenced by the number of times the students took the TExES exams and their initial low level of academic English proficiency (Váldez, 2004); the qualitative findings and the qualitative results appear to converge in this aspect. Five of the students confirmed that they had taken English remedial courses because they were not prepared for college.

Interestingly, the only participant who did not take remedial college courses was the one who had been in a college track in high school. It seemed that being on a college track was associated with her lower Spanish proficiency level since she failed the BTLPT the first time she took it. This participant corroborated what other researchers have found regarding the lack of development of Spanish literacy skills. She stated that as soon as she started middle school, she stopped using the Spanish language.

Vicarious Experiences. The second influential way of creating and strengthening efficacy beliefs is through the vicarious (observational) experiences provided by social models. “Seeing people similar to themselves succeed by perseverant effort raises observers’ beliefs that they, too, possess the capabilities to master comparable activities” (Bandura, 1995, p. 3). In the same manner, Bandura (1995) maintained, observing others fail despite high effort lowers observers’ judgments of their own efficacy and lowers their level of motivation. Furthermore, Bandura (1995) explained that the impact of modeling on beliefs of personal efficacy is strongly influenced by perceived similarity to the models: “The greater the assumed similarity, the more persuasive are the models’ successes and failures” (p.3). Bandura (1995) explained that the impact of modeling on beliefs of personal efficacy is strongly influenced by perceived similarity to the models: “The greater the assumed similarity, the more persuasive are the models’ successes and failures” (p.3).

As evidenced by the qualitative results, attending a HSI on the U.S-Mexico border enriched their bicultural and bilingual experiences that affirmed their identity and provided opportunities to achieve higher levels of self-efficacy through observational or modeling learning. Through the informal conversations with some of the teacher candidates, I learned that becoming a role model and being able to teach in English and Spanish to the new generations of Mexican American students attending public schools was a powerful motivator to pass their teacher certification exams.

Social Persuasion. People who are persuaded verbally that they possess the capabilities to master given activities are likely to exert greater effort and sustain it than if they harbor self-doubts and dwell on personal deficiencies when problems arise (Bandura, 1995). In addition to interactions among individuals, social structures can also play a major role as a source of self-efficacy. As Bandura (1995) affirmed, “successful efficacy builders do more than convey positive appraisals. In addition to raising people’s beliefs in their capabilities, they structure situations for them in ways that bring success and avoid placing people in situations prematurely where they are likely to fail often.” (p. 4). The influence of social persuasion in relation to biliteracy can be exemplified by Guerrero (2011) who asserted that bilingual education teachers acquire academic Spanish by participating in and becoming a member of a community of people, mostly professionals, who use and perpetuate academic Spanish.

One of the qualitative research findings in relation to academic performance measures, such as GPA and TExES exam success rates, was the theme of collaborative learning. The interpretation of the term collaborative learning for the purposes of this study refers to the informal study groups that these friends formed motivated by their desire to collaborate and learn from each other. Some of these teacher candidates’ college experiences, especially the ones from

the community college, demonstrated how they were able to achieve higher levels of self-efficacy by interacting with caring advisors and instructors that provided guidance, support, and helped them succeed academically (as reflected on their GPA) during their first two years of college. They also felt a sense of empowerment when they learned through their bilingual education courses that being biliterate and having transnational roots, as expressed in Felicia's (a participant) poem, was part of the Borderland Cultural Wealth (Yamamura et al., 2010) they possessed.

Physiological and Emotional States. According to Bandura (1995), people rely on their physiological and emotional states in judging their capabilities. Individuals interpret their stress reactions and tension as signs of vulnerability to poor performance. However, Bandura (1995) theorized:

It is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. For example, people who have a high sense of efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas those who are beset by self-doubts regard their arousal as a debilitation (p. 5).

For example, “students experience stress when an academic task requires skills perceived as beyond performance capability. In addition, a task within performance capability becomes stressful when students are over-extended emotionally or physically” (Torres & Solberg, 2001). Furthermore, Luykx and Heyman (2013) posited,

Analysis of structured inequalities (race, gender, and especially class) can evoke complex emotions in academically successful students from non-traditional backgrounds.

Confronted with their own victimization by and/or complicity in processes of social stratification, many take refuge in deeply rooted individualistic interpretations of social mobility. (p. 351).

In the context of this study, some of these Mexican American teacher candidates had been experiencing a high level of emotion, such as fear, and stress since the time they were in elementary school. They attributed this fear to their lack of English proficiency and as a result of feeling lost and isolated. In other cases, the fear and anxiety some of the teacher candidates students felt when taking the certification exams was not necessarily attributed to their lack of preparation or competency. This extreme anxiety was caused by the nature of high-stakes testing represented by the TExES exams' outcomes. Literature suggests that test anxiety may be reason for low test scores on standardized tests (Darling-Hammond, 1998; Kuncel, Hezlett & Ones, 2004). Students may have a GPA of well over 3.0 but score miserably on standardized tests. Although it is difficult to determine if there is lack of rigor in coursework, grade inflation, lack of experience by professors, or a multitude of other possibilities, it is still noted that GPAs do not necessarily reflect success on standardized tests (Barton, 2008).

Summary. Self-efficacy has functional value with respect to academic outcomes (e.g., Boykin & Noguera, 2011). For instance, Schultz (1993) reported that self-efficacy is a significant correlate with mathematics performance for 4th and 6th grade African American and Latino students. Similar results on the significant predictive value of math self-efficacy are reported by Stevens, Olivárez, and Hamman (2006) for both Latino and White students from 4th through 10th grade. Furthermore, self-efficacy has also been positively linked to key literacy skills. For example, it has a positive influence on reading comprehension at the elementary level (Schunk, 2003). Other research showed that self-efficacy in writing affects the quality of compositional

writing outcomes. This finding has been demonstrated among students from elementary to college level (Pajares, 2003). Social cognitive theory is rooted in an *agentic* perspective. In this view, people are self-organizing, proactive, self-reflecting and self-regulating, not just reactive organisms shaped and shepherded by environmental forces or driven by concealed inner impulses. Human functioning is the product of a dynamic interplay of personal, behavioral, and environmental influences. In this model of triadic reciprocal causation, people are producers as well as products of their environment (Pajares, 2004).

Sociocultural influences. According to Oettingen (1995), culture plays an influential role in the formation of beliefs of self-efficacy: “Culture reveals its effect on self-efficacy beliefs by affecting the fundamental systems and institutions of virtually all human societies” (p.151). Furthermore, Bandura (1986, 1997) specified that not all outcome expectations are determined entirely, partially, or not at all by efficacy beliefs.

Moving beyond deficit models. Bandura (1997) stressed the importance of sociostructural conditions which in many cases play a major part in the variance of outcomes expectations with efficacy beliefs accounting for a smaller portion. Pajares (1997) emphasized this point:

In prejudicially structured systems, for example, outcomes can be highly dependent of the performances in which individuals engage and of the outcomes that result from those performances. When individuals in excluded groups perceive that desired outcomes will not result from their efforts, no matter how hard they work, efficacy beliefs will result in little control over environments and will not be predictive of outcomes (p.24).

Similarly, the teacher candidates in this study, like many Mexican American students, were at times subject to a cultural deficit-thinking framework that explained their inability to have higher SAT scores, THEA scores, or pass the teacher certification tests on their alleged cognitive

abilities, poor motivation, low SES background, and inadequate family socialization. As Valencia and Villarreal (2005) emphatically affirm, “the characteristics of the student’s school – for instance, degree of segregation; curricular offerings; teacher certification status-are very seldom considered by policy makers and educators as factors that help to shape school failure” (p.140). The fact that five of the six participants were not college ready speaks loudly of the need to rethink and create new paradigms on how to prepare the new generations of not only Mexican Americans but also students who are not part of the dominant culture with the academic skills needed to achieve their maximum potential in a world that is becoming ever more interdependent and interconnected. Unfortunately, Padilla (2005) asserts, “it is cultural deficit that currently holds sway, and it will continue to do so as long as those who hold cultural deficit thinking views also wield the most political power” (p. 254).

Contrary to the informal collaborative learning circles that the research participants formed to support each other, “self-interest is privileged over the common good, with notable consequences: Schools reproduce existing social hierarchies, stifle the upward mobility of students and retard the economic development of certain communities” (Padilla, 2005, p. 255). Hence, it is necessary to expand our view beyond the individual student and focus on the social context of learning.

Interestingly, none of the participants during the course of our conversations and interviews questioned or mentioned the Texas accountability system based on high-stakes testing to which they have been exposed at different stages on their pathway to teacher certification. As some scholars have pointed out (Guerrero & Guerrero, 2009; Luykx & Heyman, 2013; Murillo, 2010), it seemed that these pre-service teachers, as a result of being schooled in the US had internalized the hegemonic mainstream practices and values.

Creating new awareness: Conscientization. Approaches to learning that create awareness of possibilities for social transformation through community action, such as *conscientization* – awakening of consciousness (Freire, 1970; Rossatto, 2005) can stimulate learning, particularly for Mexican American students. From a Borderland Cultural Wealth perspective (Yamamura, Martinez, & Saenz, 2010), for Mexican American living on the U.S.-Mexico border, family and community are an important aspect of their lives. In fact, there are strong community-based organizations that provide social services, including health education and college education (IAF, 2013).

Summary. To summarize, I attempted to represent the integration of the quantitative findings and qualitative results in the model presented in Figure 5.1. Some of the qualitative findings help explain the reasons for some quantitative results. For example, the low scores on the TExES BTLPT can be explained by the lack of attention to the cultivation of academic Spanish. As these teacher candidates expressed, the ones that attended U.S. public schools were enrolled in bilingual transitional programs. In these programs, the goal is to transition other than English-speaking students to English-only classes. The approximate length student stay in these programs is three years (Montrul, 2013). These results are consistent with other research that has shown that not all Latino bilingual preservice teachers have developed the academic level of Spanish required to teach curriculum to native Spanish speaking students (Ekiaka & Reeves, 2010; Guerrero & Guerrero, 2009; Murillo, 2010; Scarcella, 2003; Sutterby, Ayala, & Murillo, 2005; Valdés 2004; Valdés & Geoffrion-Vinci, 1998). Guerrero and Guerrero (2009) attributed this limited academic Spanish proficiency to the U.S. capitalist system that operates in such a powerful way that language policies are designed to prevent the teaching and development of academic Spanish among Latinos as this population is a major source of cheap labor. Brochin

Ceballos (2012) expounds on the causes and affirms that as a result of years of schooling in the US, many Latinos internalize the deficit perspectives and dominant views toward their own language, culture, and literacy practices.

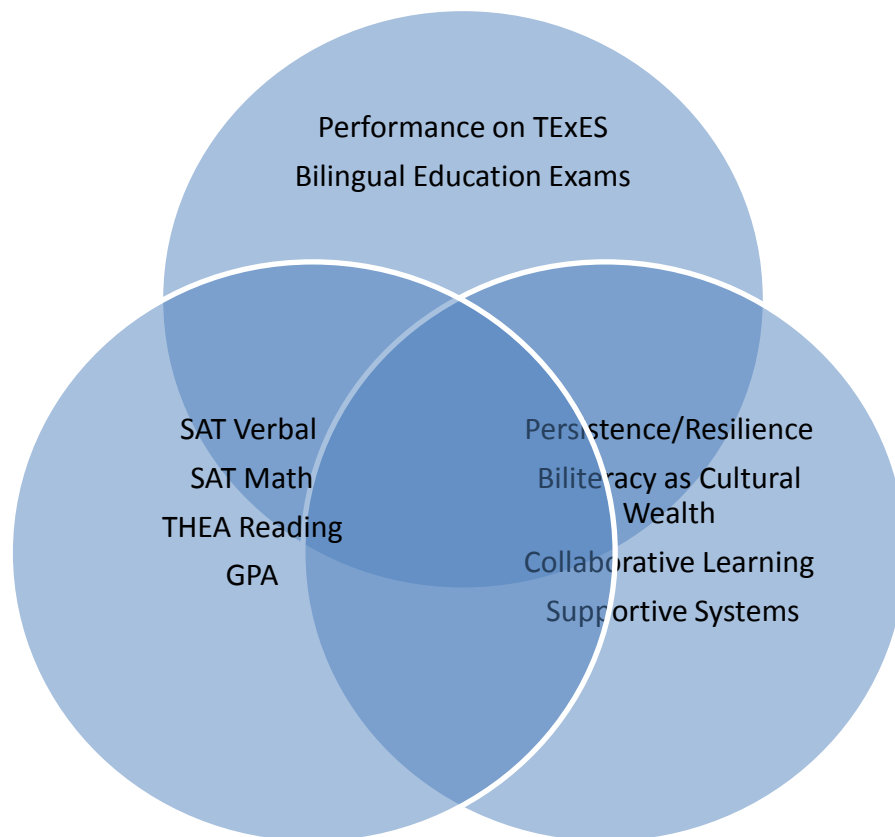


Figure 5.1. Model of TExES bilingual teacher certification performance derived from the integration of the quantitative and qualitative results.

In addition, the qualitative findings revealed that three of the six students who had some difficulty passing the TExES Bilingual Generalist exam had been educated in schools located in

low-income districts. Hence, it is hypothesized that these teacher candidates' prior schooling might have been a factor in their inability to pass the certification exams. Some researchers (Flores & Clark, 2005) found the same results in a similar study conducted at another Texas university. Referring to the teacher candidates that failed, these authors posited that poor schooling "coupled with exclusionary gatekeeping mechanisms resulted in a lack of equal opportunity" (p. 235). Flores and Clark (2005) concluded that the educational system had failed those students "when they were public school students, continue to fail them, and suppress their aspirations of becoming teachers today" (p. 235).

In terms of the qualifying exams, the quantitative results showed that there was no significant correlation between them and the TExES exams. One of the participants said that for her the qualifying exams had been more difficult. It is important to note that this teacher candidate was the only one that passed all the TExES exams on her first attempt. Another participant, who had taken the newest version of the on-line qualifying exams, said that her impression was that many of the students taking these exams were not really concentrating on the material and they just pressed buttons until they got the correct answer since there was no minimum number of attempts. Interestingly, Flores and Clark (2005) observed the same results in their qualitative study conducted at another public Texas university. These authors concluded that there was a mismatch between what a bilingual teacher candidate had learned and what was being tested on the university's qualifying exam, a test designed specifically for generalist candidates.

Furthermore, based on the analysis of the TExES Bilingual Generalist Domains' results, some students were having problems passing five of the six domains of this test. This means that

if state policies changed and passing scores were required for every one of the six domains, a larger percentage of teacher candidates would fail this test.

To conclude this section, the quote from Darling-Hammond and Hyler (2013) becomes relevant with respect to the topic of teacher preparation:

The bureaucratic management of teaching might make sense if students learned in exactly the same way and at the same rate. But, as every teacher knows, students are not standardized and teaching is not routine. Teaching requires deep knowledge of how children learn differently and a sophisticated repertoire of skills deployed through professional judgment. Standardized teaching can never produce high levels of learning for all students. For students to be well served, teaching must become a real profession. (para. 8).

Researcher as a Research Instrument.

I am an immigrant, woman of color who has been enriched with the transnational cultural wealth that is rediscovered and transformed every day by the border people living on the Texas-U.S. Southwest/Mexican border. One of these treasures was the opportunity to learn two languages and adopt some of the values and beliefs of both U.S. and Mexican cultures. Growing up on the Mexican side of the border and migrating to Texas as a teenager played a major role in the construction of a transnational identity. From my interaction with these two cultures emerged my transnational identity which may also be called “denationalized citizenship” (Sassen, 2006, p. 288). My transnational identity more closely resembles the type that Sassen (2006) describes as a “global sense of solidarity and identification, partly out of humanitarian convictions” (p. 289). According to this author, “transnational civil society and citizenship focuses on new

transnational forms of political organization emerging in a context of rapid globalization and proliferation of cross-border activities that go beyond the nation” (pp. 288-289). It involves all sorts of actors, NGOs, first nation people, human rights, the environment, arms control, women’s rights, labor rights, and rights of national minorities.

Similarly, this mixed methods story is closely linked to my academic background. Earning a Bachelor of Science degree in psychology and a Master of Arts in general experimental psychology from Border University provided me with a solid base knowledge in quantitative research methodology. It was not until I enrolled in the teacher education doctoral program in 2010, that I became familiar with qualitative methodology. During this time, the majority of the teacher education professors at this university were using qualitative methodology. Thus, during the last three years, while pursuing a doctoral degree, with the exception of two studies, the majority of my research activities involved the use of qualitative methods using different approaches, such as ethnography, participatory action research, and case studies. My experience in this area is very similar to Greene’s (2007) depiction of her qualitative research story as she eloquently states: “I frequently struggled with the challenges of legitimating the assumptions and stances of interpretive and constructivist traditions. I wondered more than once what was really at stake in this battle”. (p. 64). Further, I completely understand and can identify with the main reasons for using this approach. Her eloquent words explain it.

Mixed methods approach to social inquiry represents a potentially deep and meaningful engagement with different ways of knowing and being. It offers multiple avenues to meaningfully engage with difference and diversity. I came to believe that with a mixed methods approach I could position my work in service of values. I cherish-values of tolerance, understanding, and acceptance. (p. 65).

It is not surprising then to see how a study design is determined by its philosophical foundation. Moreover, it is also affirmed that the selection of a specific research paradigm is determined by the value, beliefs, and philosophy of the researcher (Plano Clark & Creswell, 2008; Denzin & Lincoln, 2011) and these paradigms are the worldviews or belief systems that guide researchers (Lincoln & Guba, 2005).

Furthermore, it has now been widely accepted within the research community that science is not value free and it is influenced by the investigators' philosophy. Hence, in this section, I have provided some details about how my life story and my academic background shaped my values, beliefs, and philosophical foundations (Creswell & Plano Clark, 2011; Denzin & Lincoln, 2011) and how these, in turn, influenced every stage in this social inquiry research.

Limitations

The limitations in this study were:

1. The uniqueness of this study within a specific context makes it difficult to replicate exactly in another context.
2. The results of statistical tests have limited generalizability. Usually they generalize only to those populations from which the sample was obtained.
3. The archived data provided by the university did not have identifying information.

Therefore, it was not possible to match the six participants' official records (GPA, SAT scores, THEA scores, qualifying exams, and TExES exam scores) with their self-reported data.

4. The number of archived records was significantly reduced because of missing THEA or SAT records.

5. The exact percentage of Mexican origin students that were part of the quantitative data was not known because the archived data the university provided did not disaggregate the group classified as Hispanic.
6. The data collected in the qualitative phase of this study did not provide an inexhaustible list of characteristics or factors that influence the performance of Mexican American teacher candidates in TExES bilingual generalist exams. However, within the established scope and sequence, the data collected through interviews, field notes, observations, and reflection journals illustrated the key elements that played a major role in the teacher certification exam performance of Mexican American teacher candidates.

Implications for Policy and Practice

1. Requiring SAT and THEA test scores as soon as students declare a pre-education major. These instruments can be used as assessment tools so specialized advisors can provide more student-centered guidance to develop the students' basic academic skills and improve the students' self-efficacy, especially when students have not been prepared for college or are first-generation college students. However, as Gitomer et al. (2011) emphasized, the nature of skills required by basic skills tests "makes it clear that many students are not leaving the P-12 system with skills that they rightfully should have mastered much earlier" (p. 442). These researchers concluded, "It is a daunting challenge to think we can create a teacher preparation system that produces large numbers of teachers by first engaging in significant remediation and repair an inadequate P-12 education" (p. 442).
2. Developing biliteracy skills for Bilingual Generalist preservice teachers by incorporating reading and writing tasks in pre-education and teacher preparation courses.

3. Eliminating the use of benchmark or qualifying exams as a requirement to take TExES exams. A better method of measuring effective teaching could be developed by utilizing multiple methods of assessment during the student teaching period.
4. Instituting policies and support systems for repeating test-takers can improve passing rates. Some of these students took the exams different times as there is no limit on the times they can take them.
5. Not allowing students to complete their student teaching until they pass their TExES exams could also improve passing rates because teaching preparation programs can design special courses tailored to address deficiencies.
6. Consolidating all the SAT, THEA, GPA, degree plans, courses taken, Qualifying Exams and TExES scores in one data base accessible to stakeholders at all levels (university administrators, faculty, and students).
7. Collecting survey data that could identify the first language of teacher candidates in general and more specifically, administering a Spanish proficiency test early in the teacher preparation program could help develop their Spanish literacy skills.
8. Creating learning communities in schools of education can potentially help students learn in collaboration.
9. Having more teacher education courses that challenge dominant language and culture ideologies by affirming students' values, beliefs, and funds of knowledge (González, Moll, & Amanti, 2005).
10. At the state and national level, developing alternative teaching assessment methods. As other researchers (e.g., Gitomer et al., 2011; Pohan & Ward, 2011) and the American Psychological Association have recommended, relying on tests alone to ensure highly

qualified teaching can potentially eliminate effective teachers who do not perform well in exams not because of lack of competency but because they are not familiar with standardized testing as is the case of some transnational teacher candidates who went to school in Mexico. In fact, the American Psychological Association (APA) recommends against the use of standardized tests as the sole measure of aptitude or achievement. The APA's (2005) Code of Fair Testing (sec. C.5) stresses the importance of interpreting test scores in conjunction with other performance indicators. Furthermore, Darling-Hammond and Hyler (2013) have recently proposed the use of performance assessments as an alternative to the current multiple-choice method of testing. These assessments would be developed by teachers and could be used to evaluate teachers authentically. This type of assessment would allow teachers to be evaluated in their own student-teaching using curriculum they have designed such as, how to plan around learning goals and student needs, how to engage in purposeful instruction and reflect on the results, how to evaluate student learning, and how to plan for next steps for individual students and the class as a whole.

Implications for Future Research

1. Future research, including mixed methods, in teacher preparation is needed at other HSIs located on the US-Mexico border with high Mexican American student populations. This could assist schools of education in planning intervention programs and implementing research-based policies.

2. Studies with Mexican Americans seeking to become bilingual teachers need to be conducted in different areas of the country to expand the scope of the findings of this study.
3. Research using survey instruments could be designed to collect additional data about other relevant variables that can help answer additional questions emerging from this study such as:
 - a) How is socioeconomic status correlated with teacher certification performance? and b) What is the relationship between language background and bilingual teacher certification test performance?
4. Developing collaborative studies with Mexican American bilingual teachers and involving several HSIs may increase external validity by including larger number of students.
5. Longitudinal studies with Mexican American bilingual teachers during different phases of their career (from pre-service to in-service) could provide a more accurate picture of their teaching career pathway.
6. Research using other types of regression models such as logistic regression which can predict a discrete outcome such as passing/not passing tests can build on the findings of this study.
7. Comparative studies with Mexican Americans seeking teacher certification in different areas of specialization such as Mathematics, Language Arts, or Social Studies may build the knowledge base on the different factors that are associated with teacher certification test performance.

Conclusion

The purpose of this mixed method research was twofold: First, to analyze factors that predict Latino bilingual students' success on standardized bilingual certification examinations; and second, to develop a deeper understanding about the complex web of issues related to the experiences of bilingual Mexican American students residing on the Texas/Mexico border and preparing to become certified teachers, from the students' perspectives. The overall results provide evidence of how the influence of subtractive educational practices, such as the lack of development of biliteracy and the failure to prepare students for college, are aimed to reproduce inequalities among different groups of students. They are detrimental and produce long-term effects in society, particularly Mexican Americans (Valenzuela, 1999, 2005). Recognizing the enormous academic potential that Mexican Americans possess through the development of biliteracy is a matter of critical importance. As these study findings have shown, there is a significant association between successful TExES Bilingual Education test performance and literacy skills as measured by the SAT verbal scores and the THEA reading scores.

Furthermore, as evidenced by the research findings presented here, the testing requirements of the No Child Left Behind (NCLB) Act have pressured schools to mainstream students with limited English proficiency as soon as possible and to focus on the content of standardized exams rather than on students' academic and linguistic development (Garcia & Bartlett, 2007). The pressures of "accountability" and the publication of standardized test scores in the news media reinforce the assumption that student, teacher, and school achievement can be measured by high stakes test scores alone and that the only kind of achievement that really matters is individualistic, quantifiable, and statistically comparable. Such an assumption is

misleading because it distracts attention from the larger cultural contexts of living, of which formal education is just a part (Apple, 2001; McNeil, 2000).

Policymakers at all levels of government need to be looking for ways to increase the Mexican American teacher workforce. State policymakers arguably have a great deal of leverage over teacher quality by setting standards for teacher preparation programs, teacher licensure, and recertification; states determine who is eligible to join and remain in the teaching profession. While there has been a marked increase over the last decade in the number of teachers entering the profession through alternative routes, most teachers are prepared for their professional careers at traditional state-approved colleges and universities. Thus, changing the way teachers in undergraduate teacher preparation programs are selected or prepared could significantly impact the numbers of the Mexican American bilingual teacher workforce.

Understanding the roles of culture and context in the professionalization of future teachers is difficult and complex (Darling Hammond & Hyler, 2013). As such, this study was designed to answer fundamental research questions. Although this study answered those questions, in relation to Mexican American future teachers, future research is evidently needed to expand the findings of the present study and answer remaining research questions. Moreover, future studies focusing on designs that include *epistemic injustice* perspectives (Frank, 2013) can bring to the fore the voices of marginalized students. Frank (2013) explained the rationale for doing this.

Because those with power cannot see the existence of the perspectives of the disempowered, they have an unhelpfully partial view of the social world they live in. Nonetheless, those with power often determine what perspectives are important and worth listening to. If the perspectives of those positioned without power in our social

world go unheard, then our collective epistemic resources are less robust than they otherwise would be. This situation is one of epistemic injustice. Those without power are silenced and this leads to an incomplete and inaccurate vision of the social world. (p. 365).

In addition, the findings of the research presented here need to be considered as action points in the agenda of policy makers, administrators at all K-16 school levels, faculty, teachers, and parents. I purposefully selected in the quantitative phase factors that were malleable and could be changed if adequate policies were established. In terms of K-12 education, it is critical that Mexican immigrant parents and Mexican Americans, in general, know that the Spanish language is not inferior compared to the English language and that research has proven that being bilingual increases the cognitive abilities of children, improves their self-esteem, and opens the door to more job opportunities (citation). Teachers need to engage parents in the educational process of their children and not assume that Mexican immigrant parents are not interested in the education of their children. It is imperative that researchers, besides publishing their significant findings, take a more proactive role and interact with the members of the community they serve. Scholars, teachers and parents can play a major role as leaders in community organizing to demand equal access to educational opportunities and serve as role models to the rest of the community. Now more than ever when conservative forces in the government are cutting funding for education at all levels, it is important to be actively engaged in addressing issues such as bilingual education because not addressing them can bring long term consequences that can negatively affect the future of millions of children.

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Appendix A

Tables

Table 4.21

Summary of Regression Model TExES Bilingual Education Domain I (Bilingual Education)

	SS	df	MS	F	Sig.
Regression	22008.01	5	4401.60	12.62	.000
Residual	54392.25	156	348.67		
Total	76400.27	161			
$R^2 = .29$					
Adj. $R^2 = .27$					

Table 4.22

TExES Bilingual Education Domain I Regression Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
(Constant)	87.97	35.31		2.49	0.000
SAT Verbal	0.08	0.02	0.28	3.28	0.001
SAT Math	0.01	0.03	0.04	0.45	0.651
THER	0.40	0.12	0.25	3.32	0.001
GPA	10.10	4.74	0.15	2.13	0.035
QUAL BilEd	-0.25	0.25	-0.07	-0.97	0.332

Note. Dependent Variable: TExES Bilingual Education Domain I (Bilingual Education)

Table 4.23

Summary of Regression Model TExES Bilingual Education Domain II (Language Arts)

	SS	df	MS	F	Sig.
Regression	26012.22	5	5202.45	6.61	.000
Residual	121130.02	154	786.56		
Total	147142.24	159			

$R^2 = .18$
 Adj. $R^2 = .15$

Table 4.24

TExES Bilingual Education Domain II Regression Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
(Constant)	38.02	53.11		.72	0.475
SAT Verbal	0.07	0.04	0.19	2.06	0.042
SAT Math	0.02	0.04	0.06	0.60	0.547
THER	0.34	0.18	0.25	1.89	0.060
GPA	16.98	7.13	0.19	2.38	0.018
QUAL BilEd	0.17	0.38	0.03	0.45	0.653

Note. Dependent Variable: TExES Bilingual Education Domain II (Language Arts)

Table 4.25

Summary of Regression Model TExES Bilingual Education Domain III (Mathematics)

	SS	df	MS	F	Sig.
Regression	29903.73	5	5980.75	10.57	.000
Residual	87123.27	154	565.74		
Total	117026.99	159			

$R^2 = .26$
Adj. $R^2 = .23$

Table 4.26

TExES Bilingual Education Domain III Regression Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
(Constant)	10.77	45.04		.24	0.811
SAT Verbal	0.03	0.03	0.08	0.90	0.367
SAT Math	0.09	0.03	0.24	2.76	0.007
THER	0.44	0.15	0.22	2.89	0.004
GPA	12.03	6.05	0.15	1.99	0.048
QUAL BilEd	0.33	0.32	0.07	1.04	0.313

Note. Dependent Variable: TExES Bilingual Education Domain III (Mathematics)

Table 4.27

Summary of Regression Model TExES Bilingual Education Domain IV (Social Studies)

	SS	df	MS	F	Sig.
Regression	54149.98	5	10830.00	9.57	.000
Residual	174206.36	154	1131.21		
Total	228356.34	159			

$R^2 = .24$
Adj. $R^2 = .21$

Table 4.28

TExES Bilingual Education Domain IV Regression Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
(Constant)	-28.10	63.69		-.44	0.660
SAT Verbal	0.12	0.04	0.25	2.71	0.007
SAT Math	0.01	0.05	0.02	0.27	0.787
THER	0.55	0.22	0.20	2.56	0.011
GPA	23.09	8.55	0.20	2.70	0.008
QUAL BilEd	-0.27	0.46	-0.04	-.59	0.554

Note. Dependent Variable: TExES Bilingual Education Domain IV (Social Studies)

Table 4.29

Summary of Regression Model TExES Bilingual Education Domain V (Science)

	SS	df	MS	F	Sig.
Regression	32619.76	5	10830.00	7.93	.000
Residual	126673.99	154	822.56		
Total	159293.74	159			

$R^2 = .21$
 Adj. $R^2 = .18$

Table 4.30

TExES Bilingual Education Domain V Regression Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
(Constant)	100.15	54.31		1.84	0.067
SAT Verbal	0.11	0.04	0.28	3.08	0.002
SAT Math	0.03	0.04	0.07	0.79	0.434
THER	0.28	0.18	0.12	1.54	0.125
GPA	11.20	7.29	0.12	1.54	0.127
QUAL BilEd	-0.44	0.39	-0.08	-1.41	0.256

Note. Dependent Variable: TExES Bilingual Education Domain V (Science)

Table 4.31

Summary of Regression Model TExES Bilingual Education Domain VI (Fine Arts)

	SS	df	MS	F	Sig.
Regression	14638.41	5	2927.68	6.11	.000
Residual	63741.03	133	479.26		
Total	78379.44	138			

$R^2 = .19$
 Adj. $R^2 = .16$

Table 4.32

TExES Bilingual Education Domain VI Regression Model with Coefficients and Significance for Predictors

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
(Constant)	118.58	47.97		2.47	0.015
SAT Verbal	0.07	0.03	0.23	2.33	0.021
SAT Math	0.05	0.03	0.14	1.45	0.150
THER	0.25	0.16	0.14	1.58	0.117
GPA	4.87	6.06	0.07	0.80	0.423
QUAL BilEd	-0.10	0.33	-0.02	-0.31	0.757

Note. Dependent Variable: TExES Bilingual Education Domain V (Science)

Appendix B

Interview Questions

1. Why did you decide to become a teacher?
2. How would your friends or the people who know you best describe you?
3. What did you expect to encounter in college? Tell me more.
4. Which classes in your experience have been your favorites? How about your least favorites?
5. What are your academic, personal, professional goals? Who helps you succeed in college? Who have you asked for help while in college?
6. What motivates you? Can you share a favorite saying, quote, or advice from a person important to you that you think of when you face challenges?
7. What are the three biggest barriers you have faced as you prepare to become a certified teacher?
8. What do you consider has helped you the most to prepare for teacher certification? How about the least?
11. How and where did you learn English?
12. How old were you when you immigrated to the US and started school?
13. What type of college preparation did you receive in high school?
14. Did you take the SAT and if so, how important were the scores for you?
15. Where did you attend high school?
16. How many times did you take the TExES exams?
17. To what extent did the qualifying exams help you prepare for the TExES exams?
18. How did you prepare to take the certification exams?
19. Did you take any teacher education courses in Spanish?
20. How difficult was the BTLPT?

Appendix C

Informed Consent

University of Texas at El Paso (UTEP) Institutional Review Board

Informed Consent Form for Research Involving Human Subjects

Protocol Title: Expanding the Pipeline for Latino Bilingual Teachers: A Mixed-Methods Study

Principal Investigator: Amabilia V.Valenzuela

Dissertation Chairs: Judith H. Munter, PhD and Arturo Olivárez Jr, PhD

UTEP College of Education: Teaching, Learning, and Culture Ph.D. Program

1. Introduction

You are being asked to take part voluntarily in the research project described below. Please take your time making a decision and feel free to discuss it with your friends and family. Before agreeing to take part in this research study, it is important that you read the consent form that describes the study. Please ask the study researcher or the study staff to explain any words or information that you do not clearly understand.

2. Why is this study being done?

The purpose of the study is to explore in what way Mexican American recently teacher education bilingual graduates or teacher candidates in the College of Education at the University of Texas at El Paso can shed light on the topic of becoming a highly qualified teacher.

From four to ten bilingual Mexican American bilingual teacher candidates *or* teacher education graduates will be participating in this study at UTEP. You are being asked to be in the study because you meet the selection criteria.

If you decide to enroll in this study, your involvement will last about six months.

3. What is involved in the study?

If you agree to take part in this study, the researcher will interview you individually in person or by phone and in groups at different times (from 4 to 6 times) during the course of the spring 2013 semester. Interviews may be conducted in a study room at the library or in a classroom or office of the college of education, depending on availability. If you are not able to meet in person, phone interviews will be scheduled at your convenience. You may also be asked to keep a reflection journal during your study participation and to share with the investigator these journal notes. In addition, you may be asked to share with the investigator or the rest of the participants, documents, photos, or audio- and video-recordings that you consider relevant to the study.

4. What are the risks and discomforts of the study?

There are no known risks associated with this research. If you feel any discomfort, please advise the investigator so she can immediately stop the interview.

5. What will happen if I am injured in this study?

The University of Texas at El Paso and its affiliates do not offer to pay for or cover the cost of medical treatment for research related illness or injury. No funds have been set aside to pay or reimburse you in the event of such injury or illness. You will not give up any of your legal rights by signing this consent form. You should report any such injury to the principal investigator, Amabilia V. Valenzuela at (915) 562-3520 or amvalenz@miners.utep.edu and to the UTEP Institutional Review Board (IRB) at (915) 747-8841 or irb.orsp@utep.edu.

6. Are there benefits to taking part in this study?

There will be no direct benefits to you for taking part in this study. There is an expectation that through the participation in this project, a deep level of dialogue and reflection may be reached among the participants with respect to the different aspects related to becoming a certified teacher.

7. What other options are there?

You have the option not to take part in this study. There will be no penalties involved if you choose not to take part in this study.

8. Who is paying for this study?

There is no internal or external funding for this study.

9. What are my costs?

There are no direct costs. You will be responsible for travel to and from the research site and any other incidental expenses.

10. Will I be paid to participate in this study?

You will not be paid for your research participation.

11. What if I want to withdraw or am asked to withdraw from this study?

Taking part in this research is voluntary. You have the right to not take part in this study or to not answer any questions that you do not wish to answer. If you do not take part in the study, there will be no penalty.

If you choose to take part, you have the right to stop at any time. However, we encourage you to talk to a member of the research group so that they know why you are leaving the study. If there are any new findings during the study that may affect whether you want to continue to take part, you will be told about them.

The researcher may decide to stop your participation without your permission, if he or she thinks that being in the study may cause you harm or if you feel uncomfortable discussing issues.

12. Who do I call if I have questions or problems?

You may ask any questions you have now. If you have questions later, you may call *Amabilia Valenzuela* at 915/562-3520 or email her at amvalenz@miners.utep.edu

If you have questions or concerns about your participation as a research subject, please contact the UTEP Institutional Review Board (IRB) at 915/747-8841 or irb.orsp@utep.edu.

13. What about confidentiality?

Your part in this study is confidential. None of the information will identify you by name. The researcher will use pseudonyms for participants and the university when sharing the data with supervisors, professional conferences, or publications. To ensure confidentiality, all records will be kept in a locked cabinet located in the home office of the investigator.

14. Mandatory reporting

If information is revealed about child abuse or neglect, or potentially dangerous future behavior to others, the law requires that this information be reported to the proper authorities.

15. Authorization Statement

I have read each page of this paper about the study (or it was read to me). I know that being in this study is voluntary and I choose to be in this study. I know I can stop being in this study without penalty. I will get a copy of this consent form now and can get information on results of the study later if I wish.

I authorize the audio recording of the interviews. _____

I do not authorize the audio recording of the interviews. _____

Participant Printed Name _____ Time _____

Participant Signature: _____ Time: _____

Consent form explained/witnessed by: _____

Signature

Printed name: _____

Date _____

Time _____

Curriculum Vitae

Amabilia Valverde Valenzuela was born in Chihuahua, México to Roberto Valverde and Aurora Cruz. After immigrating with her family to the United States, she started to attend the University of Texas at El Paso where she earned a Bachelor of Science degree in Psychology and a Master of Arts degree in Experimental Psychology. She was employed for a Texas state agency as a counselor and an administrator. For the last 10 years, she has been teaching psychology courses at the El Paso Community College.

While pursuing her degree, she worked as a research associate in the department of Teacher Education. She was the recipient of various scholarships, including the Frank B. Cotton Trust Scholarship and a College of Education Summer Scholarship.

Amabilia has presented her research at numerous international and national conferences including the American Educational Research Association Meeting (AERA), the International Symposium on Bilingualism and Bilingual Education in Latin American (BILINGLATAM), the Literacy Research Association (LRA) Conference, the Texas Association of Teacher Educators (TXATE) Conference, the Sun Conference, and the Circle Conference. Additionally, she has published her research in the *Yearbook of the Literacy Research Association* and in the *Education in a Democracy Journal*.

In July 2013, she was hired by the Texas Workforce Commission as the director of El Paso Tele-Center.

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