

12-2018

Higher Education Social Responsibility: An Empirical Analysis and Assessment of a Hispanic-Serving Institution's Commitment to Community-Engaged Scholarship, Student Integration and Sense of Belonging

Juan Salinas Jr.
The University of Texas Rio Grande Valley

Follow this and additional works at: <https://scholarworks.utrgv.edu/etd>



Part of the [Educational Leadership Commons](#)

Recommended Citation

Salinas, Juan Jr., "Higher Education Social Responsibility: An Empirical Analysis and Assessment of a Hispanic-Serving Institution's Commitment to Community-Engaged Scholarship, Student Integration and Sense of Belonging" (2018). *Theses and Dissertations*. 576.
<https://scholarworks.utrgv.edu/etd/576>

This Dissertation is brought to you for free and open access by ScholarWorks @ UTRGV. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of ScholarWorks @ UTRGV. For more information, please contact justin.white@utrgv.edu, william.flores01@utrgv.edu.

HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND
ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO
COMMUNITY-ENGAGED SCHOLARSHIP, STUDENT INTEGRATION
AND SENSE OF BELONGING

A Dissertation

by

JUAN SALINAS, JR.

Submitted to the Graduate College of
The University of Texas Rio Grande Valley
In partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

December 2018

Major Subject: Educational Leadership

HIGHER EDUCATION SOCIAL REPONSIBILITY: AN EMPIRICAL ANALYSIS AND
ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO
COMMUNITY-ENGAGED SCHOLARSHIP, STUDENT INTEGRATION
AND SENSE OF BELONGING

A Dissertation
by
JUAN SALINAS, JR.

COMMITTEE MEMBERS

Dr. Marie Simonsson
Co-Chair of Committee

Dr. Karen Watt
Co-Chair of Committee

Dr. Ralph Carlson
Committee Member

Dr. Hilda Silva
Committee Member

Dr. Olga Ramirez
Committee Member

December 2018

Copyright 2018 Juan Salinas, Jr.

All Rights Reserved

ABSTRACT

Salinas, Juan Jr., Higher Education Social Responsibility: An Empirical Analysis and Assessment of a Hispanic-Serving Institution's Commitment to Community-Engaged Scholarship, Student Integration and Sense of Belonging. Doctor of Education (Ed.D.), December, 2018, 138 pp., 13 tables, 4 figures, references, 111 titles, 7 appendices.

Current efforts in higher education institutions to increase persistence and success among Hispanic students continue to be ineffective and thus new conceptual frameworks need to be explored. Data from the Hispanic Association of Colleges and Universities asserts that increasing the number of Hispanics that graduate is vital for our country's future. In turn, Hispanic-Serving Institutions need to nourish and nurture their students to ensure that they graduate and institutional frameworks would benefit from cultural and epistemological congruence with Hispanic students, their families, and their communities.

Educational leaders have urged educators to take on the responsibility and commitment to students' success and to have a positive impact on the communities they serve. This quasi-experimental study intends to measure the impact of a Hispanic-Serving Institution's social responsibility on underrepresented students' institution affiliation, especially Hispanic students in South Texas.

The following research questions guided this study: 1) What types of perceptual and behavioral characteristics (e.g. social integration, academic integration, perceived campus climate, CESL enrollment status, service learning enrollment status, language proficiency,

gender, and immigration status) are associated with sense of belonging for college students, especially Hispanic students at a HSI in South Texas? and 2) How do community-engaged scholarship and learning experiences encompassed in CESL courses (the treatment) impact college students' sense of belonging and academic and social integration, especially Hispanic students at a HSI in South Texas?

In order to answer the two research questions, a quasi-experimental research design was used in this investigation. It involved two forms of analyses: Regression Analysis addressing question one and Multivariate Analysis of Variance (MANOVA) addressing question two. The Multiple Regression Analysis (N = 208) yielded significant findings ($p < .05$). The full model revealed that 48% of the variance in Sense of Belonging, the dependent variable, was explained by four predictor variables: Peer Group Interaction; Faculty Concern for Student Development and Teaching; Academic and Intellectual Development; and English Proficiency. Although there were no differences ($p > .05$) detected among the comparison groups, recommendations to improve research design, methodology and treatment fidelity for future studies were provided.

DEDICATION

I would like to dedicate this dissertation to my loving wife, Griselda Salinas, who has always been my number one supporter. I want to thank her for her sacrifices during the time I was a full-time doctoral student. She kept me with the mindset that I could get to the finish line and graduate. I want to thank her for always being by my side during our twenty-two years of marriage. Our love and companionship during these years have assured us that we belong together.

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to Dr. Marie Simonsson for her guidance and support. I thank her also for providing me with the opportunity to grow as a doctoral student and researcher in educational leadership. I am grateful for encouraging me to make the decision of joining the doctoral program as a full-time student. This allowed me to continue to build relationships and find opportunities in higher education. I enjoyed being in her classes and visiting her in her office for mentorship and guidance. Her dedication and passion to help her students has inspired me to take my job as an educational leader to a higher level.

Great appreciation to my good friend and mentor Mr. Esteban Salinas for many years of guidance and motivation. He has taught me to appreciate teaching and learning. I have known him for twenty-seven years and he is still enthusiastic and energetic teaching students who seek his help. He has been my role model and I respect him for the work he has done as an educator and person. I wish that some day I can come near to what he has accomplished in helping students succeed in life.

I also want to thank my thesis committee, Dr. Watt, Dr. Carlson, Dr. Silva and Dr. Ramirez for taking time off their busy schedules to help me on my dissertation work. Their advice and help are greatly appreciated.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
DEDICATION	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
CHAPTER I. INTRODUCTION	1
Statement of the Problem	2
Theoretical Framework for the Study	3
Need for the Study	5
Purpose of the Study	6
Significance of the Study	7
Research Questions	8
Overview of Research Design	8
Limitations and Delimitations	10
Definition of Terms	10
CHAPTER II. REVIEW OF LITERATURE	13
Historical Events that Led to the Creation of HSIs	13
Social and Economic Conditions 1850s to 1920s	14

Legal Cases in Support of Equity	17
Political and Legal Representation for Mexican Americans	21
Emergence of Hispanic-Serving Institutions	23
Theoretical Framework	30
Academic and Social Integration Model	30
Climate for Diversity and Sense of Belonging	34
Reframing Higher Education	39
Assets and Capital among Latino Students	40
Culturally Relevant Pedagogy	42
Community-Engaged Scholarship	44
CHAPTER III. METHODOLOGY	49
Research Design	50
Conceptual Model	52
Population, Sample and Participants	53
Instrumentation and Data Sources	54
Treatment	59
Null Hypotheses	65
Data Collection Procedures	65
Data Analysis Procedures	66
Limitations of the Study	68
CHAPTER IV. FINDINGS	69
Research Questions	69
Treatment Fidelity	70

Descriptive Statistics	71
Principal Component Analysis	72
Research Question 1: Regression Analysis	76
Research Question 2: MANOVA	84
CHAPTER V. CONCLUSIONS AND DISCUSSION	88
The Principal Research Questions	88
Implications for Theory	91
Implications for Practice	92
Limitations of the Study	95
Recommendations for Future Studies	97
REFERENCES	99
APPENDIX	108
Appendix A: Request for Permission to use Instruments	108
Appendix B: Survey Instrument	112
Appendix C: Internal Permission Letters	118
Appendix D: Confidential Self-Report Survey - Consent Form	124
Appendix E: Factor Loadings Procedure: Items in Scale V	127
Appendix F: Histograms and Normal Q-Q Plots for Continuous Variables	129
Appendix G: Histograms and Normal Q-Q Plots for Differences	135
BIOGRAPHICAL SKETCH	138

LIST OF TABLES

	Page
Table 1: Research Design of Study.	52
Table 2: Factor Loadings for Exploratory Factor Analysis With Varimax Rotation of Sense of Belonging, Institution Integration and Campus Racial Climate Scales	75
Table 3: Operationalization and Coding for Outcome and Independent Variables	77
Table 4: Summary of Intercorrelation Matrix Table for Sense of Belonging and Independent Variables Under Consideration as Predictors	79
Table 5: Comparison Between the Full Model and One Independent Variable Removed Using All Possible Procedures	81
Table 6: Comparison Between the Full Model and Two Independent Variables Removed Using All Possible Procedures	81
Table 7: Comparison Between the Full Model and Three Independent Variables Removed Using All Possible Procedures	82
Table 8: Comparison Between the Full Model and Four Independent Variables Removed Using All Possible Procedures	82
Table 9: Summary of Multiple Liner Regression Analysis for Predictors of Sense of Belonging	83
Table 10: Descriptive Statistics for Dependent and Predictor Variables	84
Table 11: Graphical Representation of Research Design	85
Table 12: Sense of Belonging Summary Table	86
Table 13: Institutional Integration Summary Table	87

LIST OF FIGURES

	Page
Figure 1: Salomon Four-Group Design	51
Figure 2: Conceptual Map	53
Figure 3: Multiple-Treatment Interference	55
Figure 4: Partition of Variance Among Three Predictor Variables (X_1 , X_2 , and X_3)	80

CHAPTER I

INTRODUCTION

Historically, access to equitable education has been a struggle for many people due to their race, ethnicity, socio-economic status, and immigrant status (Allsup, 1982a; Valencia, 2010; Blanton, 2007). The Treaty of Guadalupe Hidalgo, which resulted from the defeat of Mexico in the U.S.-Mexican War (1846-1848), granted Mexicans constitutional rights protecting their land and freedoms. Unfortunately, social, political and legal institutions failed to protect the constitutional rights of Mexican Americans and Hispanics in general (Valencia, 2010). From the mid-1880s and well into the twenty-first century, Hispanics in South Texas have had to endure racism and discrimination. Many of these acts of oppression culminated in extreme violence such as killings that were never punished and publicized lynching against Mexican Americans and Mexicans.

Not until *Hernandez v. Texas* (1954) where the U.S. Supreme Court ruled that persons of Mexican descent were a separate class, distinct from whites, did institutions, including those in public education, receive a mandate by the Constitution to not systematically exclude persons of Mexican descent. South Texas has a long history of marginalization of Hispanics/Latinos in institutions of public education where acts of racism, discrimination and segregation continued well into the 1970s even though the Supreme Court had mandated that these actions cease since the mid-1950s (Guajardo & Guajardo, 2004; Ovando, 2003). The violation of their Constitutional rights has led to underrepresentation of Mexican Americans in higher education, a

factor that contributed to the low graduation and degree attainment rates among Hispanic/Latino college students (Nuñez, 2009). In *Richards v. LULAC* (1993) the courts recognized that higher education institutions in South Texas, which are now designated as Hispanic-serving institutions, were being underserved throughout the twentieth century and into the twenty-first century.

The focus of the study is to explore how a Hispanic-serving institution (HSI) in South Texas can reframe its role from an institution of “higher education” to an engaged institution that serves its students and the communities they come from. This HSI is on the verge of transforming its systems, programs, curriculum, pedagogy and research, leveraging its resources, internal and external (De La Trinidad, Guajardo, Kranz, & Guajardo, 2017). Through an institutional transformational framework, Community-Engaged Scholarship and Learning (CESL), this HSI attempts to shape its new identity that connects research and student learning to the communities it serves by fostering a sense of belonging, empowerment and social responsibility while addressing systemic inequities. Community-engaged scholarship redefines scholarship/research as a relational process that emphasizes mutuality or reciprocity or social responsibility among scholars and community members (Giles, 2016). Support systems like the Carnegie Classification for Community Engagement are beginning to manifest a shift in “higher education to a more responsive engaged human enterprise” (p. 195). This study attempts to empirically measure the impact of the CESL framework on students’ sense of belonging (Hurtado & Carter, 1997) and institutional integration (French & Oakes, 2004).

Statement of the Problem

Despite decades of efforts to increase graduation rates in the United States, the White-Latina/o gap in attainment of bachelor’s or higher degrees has gone from 20% in 1995 to 27% in 2015 (Kena et al., 2016). Sadly, the gain for each group during this period was low, 14% and

7%, respectively, and 11% for the total population. Current efforts in higher education institutions to increase persistence and success among Hispanic students continue to be ineffective and thus new conceptual frameworks need to be explored (Schreiner, Louis, & Nelson, 2012).

Arciniega (2012) presented substantial data from the Hispanic Association of Colleges and Universities (HACU) that support his claim that increasing the number of Hispanics that graduate is vital for our country's future. He also stressed that Hispanic-Serving Institutions (HSI) need to nourish and nurture their students to ensure that they graduate. As importantly, institutional frameworks would benefit from cultural and epistemological congruence with Hispanic students, their families, and the communities they come from (Cárdenas & Cárdenas, 1977). Educational leaders have urged educators to take on the responsibility and commitment to students' success and to have a positive impact on the communities they serve (Nellum & Valle, 2015; Santiago, 2012; Galdeano, Flores, & Moder, 2012; MacDonald, Botti, & Clark, 2007).

Theoretical Framework for the Study

The theoretical framework for this study draws from Hurtado and Carter's (1997) model for sense of belonging and Tinto's (1993) model for institutional integration. Merging these two models seems adequate to assess the impact of the treatment, CESL courses, in this quasi-experiment. What follows is a brief description of these two models, which will be explored in more detail in Chapter II and the CESL treatment will be described in Chapter III.

For decades, Tinto's (1993, 1987, 1975) institutional integration (social and academic) model has long been utilized to study first year college students claiming that the experiences in the first year of college shapes the persistence students may reflect in the later years with the

understanding that the largest attrition rates occur in the transition between the first and the second year. This is important for this study as the researcher was interested in studying first year students as well as students in their second and third years. Tinto's (1993) model claims to put the student's persistence at its center and that the student's success in college requires the incorporation and integration of the individual student into the social and academic environments/communities that exist within the institution. In 2004, French and Oakes conducted a study seeking to improve Tinto's model by examining the psychometric properties of the Institutional Integration Scale first created by Pascarella & Terenzini (1980). Based on Tinto's (1975) theoretical framework, the Institutional Integration scale consisted of 30 items (see Appendix B) with the following five subscales: Scale I: Peer-Group Interactions, Scale II: Interactions with Faculty, Scale III: Faculty Concern for Student Development and Teaching, Scale IV: Academic and Intellectual Development, and Scale V: Institutional and Goal Commitment (Pascarella & Terenzini, 1980).

Critics to Tinto's model of integration, Hurtado and Carter's (1997) sense of belonging model looks more into the complex realities of Latino students that exist in the interactions among these social and academic environments/communities within and outside the institution. Hurtado and Carter's (1997) model addresses the racial-ethnic dimension that Tinto's integration model fails to acknowledge and it advocates for:

1. Theories and models of transition to college, to gain a better understanding of the full range of difficulties that students encounter in college and for improving services and programs to address these transition issues.

2. An understanding of how students resolve transitional dilemmas or students' strategies for success, particularly with regard to the challenges that students face in the multiple communities that compose racially-ethnically diverse environments.
3. An understanding of how students' memberships in various communities are related to conformity (or nonconformity), cohesion (or marginalization), and successful negotiation of the social and academic interactions in college. (p. 340)

The sense of belonging model intends to diminish marginalization that addresses critical transitions of Latino college students, especially early in their college years, and a viable resource to evaluate service and/or instructional programming (Hurtado & Carter, 1997). Nuñez (2009) increased the number of items in the Scale VI: Sense of Belonging Scale to five items and used three items for Scale VII: Perceived Campus Climate. These new items were added to the survey that was used in the study, see Appendix B.

Need for the Study

Recent research has created an important counter discourse to disrupt institutional practices that exist in deficit thinking (a view of minority students' differences as deficits) structures and tracking confirms that large numbers of Latinos from low-income families rarely attain social mobility through education (Zambrana & Hurtado, 2015). Robust empirical studies that merge institutional (i.e. social and academic) integration experiences and sense of belonging of college students in South Texas are sparse. More research focused on how HSI's institutional policies impact Hispanic students is vital to demonstrate their intentionality to serve Hispanics (Santiago, 2012). In this study, CESL is an initiative that claims to have a positive impact on student success and a transformative effect on the HSI where this study was be conducted. This institutional transformative initiative needs to be evaluated in order to assess if it in fact serves its

purpose. Besides, more research on how HSIs enroll, retain, and increase Hispanic students' educational attainment would contribute to the sustainability of resources, especially funding from federal government and private funding sources (Zambrana & Hurtado, 2015).

Purpose of the Study

The purpose of the study is two-fold: (1) to determine if sense of belonging is a function of social integration, academic integration, perceived campus climate, CESL enrollment status, service-learning enrollment status, language proficiency, gender, and immigration status of college students at a HSI in South Texas; and (2) to compare the social and academic integration experiences and sense of belonging of college students who enroll in CESL courses and service learning courses with those who do not enroll in CESL or service learning courses at a HSI in South Texas.

This quasi-experimental study intends to measure the impact of a HSI's social responsibility through Community-Engaged Scholarship and Learning (CESL) courses on underrepresented college students' institutional affinity and affiliation (i.e. sense of belonging and institutional integration), especially of Hispanic students in South Texas. This empirical research study sought to collect student survey data and analyze how college students may benefit from engagement opportunities, informal and formal mentoring, cultural competency, classroom environment, research projects, and scholarship, which are inequities commonly found in educational systems in four-year and in two-year colleges and universities that marginalize underrepresented minority students (Contreras & Contreras, 2015).

Significance of the Study

Sense of belonging provides a model intended to diminish marginalization of underrepresented minorities that addresses critical transitions, especially early in their college years and a viable source to evaluate service and/or instructional programming (Hurtado & Carter, 1997). Measuring students' sense of belonging such as positive interactions with students, faculty, and/or staff can be used as an assessment tool on how institutional systems at this particular HSI impact the campus racial climate as perceived by the students it serves. Furthermore, this study may yield significant results that support the CESL framework as an institutional, transformative model for institutional change and social responsibility in higher education, particularly for HSIs with similar student population. Areas in higher education that could be impacted are: funding allocation, student services, faculty development and support, scholarship and tenure promotion, and pedagogical practices.

The impact the CESL courses has on students, faculty, and the community could encourage other departments from the present HSI to adopt the CESL framework and other HSIs to seek similar innovative, high-impact approaches to transform their academic disciplines and divisions impacting research, pedagogy and curriculum. Faculty could then expand on their research, incorporate culturally relevant pedagogies (teaching and learning practices that places students' lives, their stories, and historical realities at the center of the instructional process) and develop new curriculum that engages faculty, students and the community. This level of engagement may lead to increased student performance. The blending of the Institutional Integration (social and academic) and the Sense of Belonging constructs, which have been tested and are well supported by previous research (Hurtado & Carter 1997; Maestas, Vaquera, & Zehr, 2007, Hurtado, Griffin, Arellano, & Cuellar, 2008; Nuñez, 2009; Pascarella & Terenzini, 1980;

French & Oakes, 2004; Crisp & Nora, 2010) may provide a viable framework for student success as a higher education social responsibility, especially at HSIs as they claim to serve Hispanic students. The CESL framework engaged the HSI under study with the communities it serves establishing healthy, long-lasting relationships, which may lead to increased career opportunities for graduates and improve the HSI's image and brand impacting student enrollment and retention.

Research Questions

The following questions were used to guide the researcher in the study:

Research Question 1

What types of perceptual and behavioral characteristics (e.g. social integration, academic integration, perceived campus climate, CESL enrollment status, service learning enrollment status, language proficiency, gender, and immigration status) are associated with sense of belonging for college students, especially Hispanic students at a HSI in South Texas?

Research Question 2

How do community-engaged scholarship and learning experiences encompassed in CESL courses (the treatment) impact college students' sense of belonging and academic and social integration, especially Hispanic students at a HSI in South Texas?

Overview of Research Design

To answer the two research questions of this study, a quasi-experimental research design was utilized, and it involves two forms of analyses: Regression Analysis addressing question one and 3 (groups) x 2 (pre- and post-test) Factorial Multivariate Analysis of Variance (MANOVA) addressing question two. The study sought to collect student survey data and analyze how

college students may benefit from community-engaged scholarship, formal and informal mentoring, culturally-relevant pedagogy, positive classroom environments, experiential learning, and undergraduate participatory research that was facilitated by well-trained faculty who taught the CESL courses (the treatment) at the HSI in South Texas where the study was conducted. Exploratory and confirmatory analyses were performed side by side to test the null hypotheses as part of the research process and provide validity to the obtained results (Tukey, 1977).

The quantitative method of analysis to address research question one is regression analysis. It intends to identify perceptual and behavioral characteristics that are related to and explain variances in college students' sense of belonging, especially Hispanic students at a HSI in South Texas. The dependent/criterion variable is Sense of Belonging (Nuñez, 2009) and the independent/predictor variables are social and academic integration (French & Oakes, 2004), perceived campus climate (Hurtado & Carter, 1997), CESL enrollment status (treatment), service learning enrollment status, language proficiency, gender, and immigration status.

The quantitative method of analysis to address research question two is 3 (groups) x 2 (pre- and post-test) Factorial MANOVA. It intends to measure the impact of a South Texas HSI's social responsibility implemented through the CESL framework and courses on the dependent variables, college students' sense of belonging and institutional integration, especially of Hispanic students. This design and methodology of analysis was selected because the study compares mean vectors that describe college students' institutional affiliation (i.e. sense of belonging and institutional integration) between groups of first year college students and students after their first year at the institution (Mills & Gay, 2016). The grouping variable is Enrollment Status (0: No CESL and No Service Learning, 1: CESL, 2: Service Learning). The hypotheses

testing and method of analyses to answer both research questions along with the validity and reliability of the instruments will be further elaborated in Chapter III.

Limitations and Delimitations

The study has certain limitations. First, this is a cross-sectional study that was done at only one HSI. Therefore, the population sample is representative of the student population at this HSI, but the results may not be generalized to student populations at other universities. Secondly, the study targets students that are predominantly from the region of South Texas, which may not be a good representation of populations in other areas. Furthermore, other factors such as parental support and education, college readiness and GPA, which are generally studied, were not considered. Instead, the study focused on factors such as field of study, classification, gender, and immigration status, which can be easily obtained from the participants/subjects and used to desegregate student data. Also, there is no direct analysis used to establish a correlation to predict the performance of students. On the other hand, future studies, especially longitudinal ones, may be conducted to provide evidence that suggests that student performance, retention and graduation rates are impacted. Another limitation is the use of a survey as a data collection method and thus social, cultural and political biases in the responses should be considered.

Definition of Terms

For the purpose of the study, the following terms are defined as follows:

Hispanic or Latino: A person of Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race (Kena et al., 2016, vii).

Higher Education Social Responsibility: A community-engaged scholarship that redefines scholarship from the fundamentals of traditional disciplines to a relational process that emphasizes mutuality or reciprocity among scholars and community members (Giles, 2016).

Hispanic-Serving Institution (HSI): The Higher Education Act of 1965, as amended in 1998, defines the term “Hispanic-serving institution” explicitly. For the purpose of this study and the references therein, a HSI was summarized as an accredited, degree-granting, public or private nonprofit, two- or four-year institution of higher education with 25% or more total undergraduate Hispanic full-time equivalent student enrollment.

Institution Integration: By institution integration, Tinto (1993) refers to the degree of the individual’s social and intellectual experiences that serve to “integrate the individual into the social and intellectual life of the institution” (p. 50). In this study, the treatment were courses that provided students with experiential learning opportunities (Dewey, 1916). These include: undergraduate research, culturally-relevant pedagogies and community-engaged scholarship.

Sense of Belonging: Hurado & Carter (1997) make a persuasive distinction between sense of belonging and Tinto’s Institution Integration empirically and theoretically. Their definition of sense of belonging refers to Bollen & Hoyle’s (1990) perceived cohesion from “a variety of collective affiliations, formed in large environments, that can contribute to an individual’s sense of belonging to the larger community” (p. 328). Maslow (1970, 1999) also relates sense of belonging to motivation, personality and a psychology of being.

CESL Enrollment Status: Students are enrolled in a course designated as a Community-Engaged Scholarship and Learning (CESL) course or are enrolled in a course taught by an instructor who completed the faculty development workshop series through the CESL framework and is practicing CESL pedagogies and research in that course.

Service Learning Enrollment Status: Students are enrolled in a course designated as a Service Learning course and the instructor is not a CESL faculty.

CHAPTER II

REVIEW OF LITERATURE

This chapter contains five sections, each with subsections, organized in a way that the researcher intended for the reader to be exposed as each section builds on the previous. The first two sections, historical events that led to the creation of Hispanic-Serving institutions and their role in higher education, set the historical and present, social and political, contexts to portray a sense of urgency for educational leaders to respond to higher education's social responsibility. The two sections that follow, learning, motivation and undergraduate research and the two theoretical frameworks for student success used by this study, provide the basis in the development of Community-Engaged Scholarship & Learning (CESL) initiative as the treatment in this study. Finally, the last section, culturally responsive practices, provides tools and a pathway to institutional transformation as well as social change.

Historical Events that Led to the Creation of HSIs

In an effort to provide an understanding of the leadership role and the impact that HSIs bring to the community, this section is devoted to present historical events (social, cultural, and political) that Mexican Americans endured and overcame. First, a brief account, dating from the 1840s to the mid-1900s, of legal and illegal oppression towards young and old immigrants and residents of Mexican descent will aim to provide the reader with a perspective of the historical context. This will be followed by the development of organizations or groups that strategically set out to represent Mexican Americans in and outside the courts and their contribution towards

equal representation in public education and in social and political environments. Thirdly, the advancement of Hispanic or Latino representation in higher education institutions leading to the creation of HSIs will be summarized.

Social and Economic Conditions 1850s thru 1920s

Allsup (1982a) provides a sequence of compelling statements that describe the Anglo oppression towards Mexicans that followed the Mexican War. This voracious depiction of Anglos does not stop here. Allsup (1982a) claims that Americans used history books purposefully to steal several well-established Mexican ideas and practices in irrigation, mining, cattle and sheep manipulation, and take ownership of these and portray them as the American “ingenuity”.

James K. Polk, U. S. President (1845-49), inconspicuously led the country to believe that a war with Mexico was necessary to address America’s Manifest Destiny, to expand the U. S. territory from coast to coast. This belief was among most Americans, who “were quite eager to teach Mexicans ‘their place.’” (Allsup, 1982a, p. 2). Unfortunately, Mexico lost the war and Mexican inhabitants of California, New Mexico, Arizona, Nevada, Utah, and South Texas, were forced to abide by the new rules as conquered and vulnerable to oppression and colonialism. Both, the War for Texas Independence and the US-Mexican War turned U.S. citizens against Mexicans living in the U. S. to become “lower class” people that could be hunted like animals (Carrigan & Webb, 2013). Lynching of Mexicans by Anglo vigilantes/mobs became prevalent from 1850 to 1928 and were often celebrated by the local people. The mob leaders, often law officers, were never punished for their crimes. Some of the most publicized lynching were: fifteen people killed in El Porvenir, Texas, Juana Loaiza hanged in California, and Antonio Rodriguez burned alive in Rock Springs, Texas.

Although the Treaty of Guadalupe Hidalgo, that ended the U.S.-Mexican War (1846-1848), granted Mexican inhabitants with constitutional rights of their land and freedoms, the absence of Mexican leaders in the social and political structures at that time, facilitated abuses by Anglo Americans. These types of abuses, commonly supported by law enforcement officials and the rest of the country, became a part of life for Mexicans. According to Allsup (1982a), “By varying methods, Mexican landholders were dispossessed, political rights disassembled, and economic opportunity destroyed” (p. 4). Anglos utilized their financial advantage and the loopholes in the financial and political systems to remove Mexicans from their property, (e.g. land and cattle). Bacilio Ramos was arrested in McAllen, Texas in 1915; he had a “Plan de San Diego” document with him, which described an upcoming attack on the Anglos by Mexicans. This never happened, but it led to Anglo raids to displace Mexicans in the Texas border back to Mexico (Carrigan & Webb, 2013). It was not until people like J. T. Canales, Texas Congressman and Cameron County Superintendent of schools, and Manuel Tellez, Journalist and Ambassador from Mexico to the U.S., that the lynching and the killing of so many Mexicans reached the public eye. Canales made public the illegal actions of Texas Rangers and the killing of Mexicans by law enforcement officers while Tellez acted on behalf of the Mexican government and protested to Washington the many cases of lynching that had taken place in the Southwest (Carrigan & Webb, 2013).

World War I and poor economic conditions of Mexico contributed to the creation of a wave of Mexican farmworkers immigrants, who desperately needed a job to be able to feed their families, into the U. S. (Allsup, 1982a). The American agribusiness agents and Midwestern industrialists took this opportunity to exploit Mexican immigrants under poor working conditions. The Mexican Revolution of 1910 caused larger numbers of Mexicans to immigrate

in search for jobs. The exploitation and disregard of Mexican immigrants that continued well into the early 1900s was due to the lack of social and political representation for Mexican immigrants. During and, for several decades after, the recession of the 1920's, Mexican workers were left unemployed and without any type of financial or social assistance. Public services were unresponsive and insensitive to the language needs of non-English speaking Mexicans. This led Mexicans into terrible health and sanitation conditions in *barrios* that were commonly credited by Anglos to the "lack of intelligence, unclear cultural traits, and a general disposition toward dysfunction" (Allsup, 1982a, p. 9). All these accounts considerably show that the Treaty of Guadalupe Hidalgo failed to keep its promise, to protect the constitutional rights of Mexican Americans and the Mexican culture and language, especially in the education of Mexican American children (Blanton, 2007).

Since 1896, the Supreme Court decision in *Plessy v. Ferguson*, which will be further described in the following section, formalized and legalized segregation between Whites and Blacks under the U.S. Constitution. The indifference of education administrators towards Mexicans and Mexican Americans caused the marginalization of brown children in segregated schools that were later proved to fail to provide equal educational opportunities, by *Brown v. Board of Education* in 1954, and offer compensatory assistance as English language learners, in 1974 by *Lau v. Nichols*. According the Blanton (2007), the high spirits of nativism raised during World War I and the social disruptions on the U.S.-Mexico border during the Mexican Revolution fueled the national effort, the Americanization Movement, to Americanize immigrants, especially in Texas. Although *Plessy v. Ferguson* segregated Blacks and Whites, the educational, social, and political systems unsurprisingly segregated Blacks, Whites, and Mexicans in many regions across the U.S. (Allsup, 1982a). Valencia (2010) advances this notion

by asserting that Mexican Americans experienced segregation throughout their lives, from “the cradle to the grave” (p. 11). Throughout the U.S., the struggles of Mexican Americans, and other minority groups, imposed by the Anglo oppression occurred frequently. As minorities began to develop social, political, and legal representation, many of them turned to the courts for assistance in protecting their rights, especially for equal protection against the laws and equal opportunities in education, guaranteed by the U.S. Constitution.

Legal Cases in Support of Equity

In *Plessy v. Ferguson* (1896) a U.S. citizen, one-eighth African purchased a train ticket to travel within the state of Louisiana, but was forcibly ejected from the white coach. He refused and was arrested and jailed for violating a statute of the state. He sued claiming discrimination under the Thirteenth and Fourteenth Amendments of the U.S. Constitution. The state Supreme Court claimed that the Thirteenth and Fourteenth Amendments were not violated and the U.S. Supreme Court affirmed arguing that the separation of races does not label one race as inferior. Laws requiring the separation of races in places where they both come in contact do not imply inferiority of one race and are within the competency of the state legislatures in the exercise of their police power. The Supreme Court concluded that it is competent for a state to regulate the enjoyment of citizens of their civil rights solely upon the basis of race.

In *Sweatt v. Painter* (1950), the courts ruled in favor of a Negro who was denied admission to the University of Texas Law School in 1946 because of his race. At the time, the Supreme Court determined that there was no law school in Texas for Negroes that would offer equal facilities. The existing law school for Negroes had no independent faculty or library and other educational opportunities such as specialization and availability of law did not exist. Thus the

facility was not equal, which led to the decision by the court to require the University of Texas Law School to admit the petitioner.

Brown v. Board of Education (1954), overturned the “separate but equal” doctrine established by *Plessy v. Ferguson* that led to segregation in public education. For decades the courts denied relief for minority children of the detrimental effects caused by the segregation in public education on the basis of race. In *Brown v. Board of Education*, Negro children contended that segregated public schools were not “equal” and cannot be made “equal” and hence they were deprived of the equal protection laws guaranteed by the Fourteenth Amendment. To separate them from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community, which may affect their hearts and minds in a way unlikely ever to be undone especially when these actions have the sanction of the law. The Supreme Court of the U.S. decided that a sense of inferiority affects motivation and that segregation with the sanction of law has the tendency to retard the educational and mental development of African-American children and deprives them from some of the benefits they would receive in a racially integrated school system. The equal protection clause of the Fourteenth Amendment prohibits the states from maintaining racially segregated public schools, even though the physical facilities and other tangible factors such as curricula and qualifications of teacher may be equal. The segregation of children in public schools solely on the basis of race deprives children of the minority group of equal educational opportunities. The 1954 decision of *Brown v. Board of Education* did not immediately end segregation in American public schools; in fact, in 1955 the Supreme Court ordered the states’ compliance with “all deliberate speed.” Fortunately, the milestone case of *Brown v. Board of*

Education in 1954 broke through the *Plessy v. Ferguson* mandate and provided the opportunity for change in public school systems across the country (Guajardo & Guajardo, 2004).

In *Hernandez v. Texas* (1954), the grand jury in Jackson County, Texas convicted and sentenced to life in prison a person of Mexican descent. He alleged that he was deprived from the equal protection of the laws guaranteed by the Fourteenth Amendments when persons of Mexican descent were systematically excluded from service as jury commissioners although there were such persons fully qualified in the county. Persons of Mexican descent who rarely participated in business and community groups, whose children attended segregated schools, and who even had to use separate bathrooms in the courthouse, constituted a separate class from “whites”. The petitioner sought the right to be indicted and tried by juries from which all members of his class are not systematically excluded. The Supreme Court of the U.S. decided that when the existence of a distinct class within a community is demonstrated and it is further shown that the laws single out that class, for a different treatment not based on some reasonable classification, the equal protection of the laws guaranteed by the Constitution has been denied. Persons of Mexican descent constitute a separate class, distinct from whites.

In *Rodríguez v. San Antonio ISD* (1971), students who resided in school districts funded by low property value areas complained of insufficient resources for teachers and educational supplies as compared to wealthier districts in the state. They claimed that these actions denied them equal protection under the Fourteenth Amendment of the Constitution of the U.S. The court stated that there is no fundamental right to education in the constitution and ruled for the school district. The “unfair” systematic distribution of funds in Texas became an issue for years to come.

The *Lau v. Nichols* (1974) was a civil rights case brought by Chinese American students who had limited English language proficiency in San Francisco, California. They claimed that they were deprived of their rights guaranteed by the Title VI of the Civil Rights Act of 1964 that banned educational discrimination on the basis of national origin. The lack of effective linguistically-appropriate accommodations denied the Chinese students equal educational opportunities. The U.S. Supreme Court in 1974 ruled in favor of the students expanding the rights of limited English proficient students in all public schools with the Equal Educational Opportunities Act of 1974. This forced school districts to provide bilingual instruction to non-English speaking students, including Mexican children (Gandara, Moran & Garcia, 2004). In 1984, the opposition to bilingual education tried to modify the Bilingual Education Act to be more “flexible” (Gandara, Moran & Garcia, 2004, p. 38). Other similar political and social attacks towards bilingual education have continued through the 1990s and in the present. It is the responsibility of conscious observers to expose the reality and seek ways to remove these inequalities. Ovando (2003) states that we are in a dismissive period (1980s – Present) and argues that:

“... changing political, social, and economic forces, rather than any consistent ideology, have shaped the nation’s responses to language diversity ... leaders must also understand why and how opponents have prevailed in various periods in discrediting the benefits of quality bilingual education pedagogy ... to create a society that empowers linguistically marginalized groups.” (p. 1 and 18)

The *Serna v. Portales Municipal Schools* (1974), failed to guarantee the constitutional rights under the Fourteenth Amendment and of their statutory right under the Title VI of the 1964 Civil Rights Act by not providing effective instructional means for Spanish speaking

students to learn the English language. The district was directed to investigate and initiate a bilingual and bicultural program and enlarge educational opportunities that address the specialized needs of students in Portales.

In 1993, *Richards v. LULAC* (1993) filed declaratory judgement action against governor Clements (then Richards) and the Texas higher education system officials, and contended that the laws, policies and practices of the defendants denied Mexican Americans who reside in the border area of Texas, participation in quality higher education programs and access to equal higher education resources. The trial court found for the plaintiffs, but the Texas Supreme Court reversed the decision and held that the plaintiffs had failed to establish that the defendants' system imposed unequal burdens with an intent to discriminate. Although the U.S. Supreme Court recognized Mexican Americans as a separate class in various equal protection contexts and has treated discrimination against persons of Mexican ancestry as equivalent to racial discrimination, the plaintiffs had created a class, not of all Mexican Americans in Texas, but a selective category of those living in a carefully drawn region and thus the Fourteenth Amendment did not protect such subgroup. Ortegón's (2013) findings places *Richards v. LULAC* (1993) as a catalyst for the advancement of access to higher education for Mexican Americans in south Texas along the Texas-Mexico border.

Political and Legal Representation for Mexican Americans

Political representation for Mexican Americans began to appear in New Mexico as early as 1910, when Mexican American rights were included in the state constitution that guaranteed civil and political rights for Mexican Americans (Allsup, 1982a). What follows is a brief description of organizations that have represented Mexican Americans in and outside the courts to meet their needs and difficulties.

The League of United Latin American Citizens (LULAC) was founded in 1929 by a middle-class group composed of Texans and Mexicans who joined forces to resist racism towards Mexican American people and culture, racial segregation and discrimination while addressing political disfranchisement of Latinos in general (Yarsinske, 2004). It has now evolved as a nationwide, premier organization that represents the civil rights of Hispanic Americans in Washington, D.C. The American G.I. Forum in 1948 was created to represent 300 veterans who had not received their compensation checks for school and medical expenses in Texas and expanded its efforts to represent other Latin American groups (Allsup, 1982b). The Forum became active on ethnic affairs and issues of school segregation, illegal alien labor, real estate discrimination, public discrimination and political representation. Mexican American Legal Defense (MALDEF) and the Southwest Voter Registration Education Project (SVREP) focused on increasing political participation of Mexican Americans that led to the extension of the Voting Rights Acts of 1964 and 1970 (Quiñones, 1990).

Mariscal (2005) expressed that the Chicano Movement came to its peak in the 1960s. He used Cesar Chavez's definition of the movement as "when there are enough people with one idea so that their actions are together like a wave of water, which nothing can stop" (p. 27). This was similar to the Black Movement, but the Chicanos had their own culture and their own history and a mother country. Criticism from other groups in the U.S., mainly by Anglos, simply showed their lack of understanding of the Chicano culture. The Chicano Movement was a noble cause; Chicanos were underrepresented in colleges around the U.S. and demanded more and better representation (Mariscal, 2005). Leaders of the Chicano Movement, Julian Zamora and Ernesto Galarza, had a vision that ethnic groups would become significant contributors to society. The movement was an ideal and action based approach.

Several organizations surfaced to represent Mexican Americans (Quiñones, 1990). For example, the Alianza Federal de Pueblos Libres in 1962 formed to reclaim, based on the Treaty of Guadalupe Hidalgo, for descendants of land grantees of Spanish and Mexican government land grants dating from before the U.S. take over from Anglo individuals or corporations. La Raza Unida concept in 1967 (pride, mobilization, and loyalty to the Constitutional Democracy) emphasized organization, job training, education, housing, political representation, the Treaty of Guadalupe Hidalgo, police harassment, and cultural rights. Community organizations (Crusade, The Alianza, Brown Berets, United Mexican American Students, and the Mexican American Youth Organization) converged in 1968 and called for housing meeting Chicano cultural needs, schooling in Spanish, and the restitution of community grant lands. These were some of the groups that contributed to the Chicano Movement (Mariscal, 2005). While some groups like Cesar Chavez and the farm workers focused on their ideals through non-violence, others sought more action like Reies Tijerina and Corky Gonzalez. The movement made significant contributions to identity, the arts, intellectual traditions, popular culture, civil rights activism, political behavior, gender identity, and workplace defense.

Emergence of Hispanic-Serving Institutions

The Chicano Movement made it possible for underrepresented groups to gain greater access to higher education leading to upward social mobility, but reminded those that profited to not forget the masses that made this possible (Mariscal, 2005). Historically, higher education institutions have failed to construct educational systems, governmental structures, and policies that better serve Latinos (MacDonald, Botti, & Clarck, 2007). Latinos have endured shifts in political, social, and demographic challenges for greater access to U. S. higher education. MacDonald, Botti, and Clarck (2007) claimed that Latinos in higher education have gone

through five stages: “visibility and legitimacy in the early to late 1960s; self-determination in the early 1970s; seeking resources beyond the rhetoric in the early 1980s; emulation in the late 1980s and early 1990s; and, finally, autonomy in the late 1990s” (p. 478). For instance, in the 1980s educators and policy makers began to notice large enrollments of Latino students concentrated in a small number of higher education institutions (Santiago, 2006). Since 1986, the Hispanic Association of Colleges and Universities (HACU) has played a major role in representing Hispanics by fighting for equitable public policy and federal funding in higher education (Galdeano, Flores, & Moder, 2012).

Santiago (2006) concluded that the growing number of Latino students and their concentration in institutions of higher education, along with advancements through legal cases and new legislation efforts seeking funding to improve the learning environments for Latino students, led the way to the “recent invention” (p. 5) of Hispanic-Serving Institutions (HSI). The Higher Education Act of 1965, as amended in 1998, defines the term “Hispanic-serving institution” explicitly as an accredited, degree-granting, public or private nonprofit, two- or four-year institution of higher education with 25% or more total undergraduate Hispanic full-time equivalent student enrollment.

HSIs must play a major leadership role in higher education to establish best institutional practices that best serve students and contribute to their success, especially Latino students (Santiago, 2006). Unfortunately, when higher education institutions, many of which were historically created as predominantly White campuses, qualify and receive the designation of Hispanic-serving institutions, it does not guarantee that funding will be utilized to transform the institutions’ practices and programs to better serve their students, in particular, Latino students (Santiago, 2006; Santiago, 2012; Galdeano, Flores, & Moder, 2012).

The creation of HSIs was followed by a sequence of federal and state policy and legislation that has impacted Latino students. In this section, funding legislation, accountability, lessons learned and best practices, and new directions that HSIs have adopted, in collaboration with the communities they serve, in their transformation for social change will be discussed. The aim is to provide an idea as to how HSIs' social responsibility may be associated to Latino students' education, faculty development, organizational and departmental programming, and learning experiences where community members are also considered as stakeholders of the learning process for Latino students.

Excelencia in Education (2015) found that while "serving" about 60% of enrolled, undergraduate Latinos in the U.S. during 2012-2013 year, HSIs only represented 12% of all U.S. colleges and universities. Some Historically Black Colleges and Universities (HBCU) and Tribal Colleges and Universities (TCUs) have become HSIs because they have met the enrollment and thus triggered a steady increase in the number of HSIs in the U.S. (Santiago, 2006). Nellum and Valle (2015) reported that in 2008-2009 there were 280 HSIs and in 2013-2014, five years later, there were 409. This increase was not reflected on the federal appropriations, which declined from \$227 million to \$216 million, respectively.

Recent data consistently show that HSIs remain and will continue to be the most underfunded institutions by state and federal investment (Nellum & Valle, 2015; Galdeano, Flores, & Moder, 2012). Although, HSIs' sources of revenue may be compared to non-HSIs', there are other considerations that need to be made. For instance, HSIs are limited by the financial conditions of their students and the communities they are in (Nellum & Valle, 2015). This leaves HSIs in the predicament and challenge of more dependent on the limited funding provided by state and federal investments than their counterparts. From 1999 thru 2012, public

four-year HSIs receive, on average, less total revenue for Full-Time Equivalent (FTE) than other public four-year institutions. States have neglected four-year HSIs, which has positioned these institutions at a financial disadvantage. Nellum and Valle (2015) point out that although the FTE gap is in favor of public two-year HSIs, the resources continue to be limited for their students, “many of who are low income and first generation” (p. 5).

In critical race theory, the traditional journal format, gatekeeping function or journal editors and reviewers, and the underrepresentation of minority faculty universities, are seen as complex boundaries that resist transformation, particularly the academic, disciplinary society (Parsons & Plakhotnic, 2006). Higher education institutions see as their primary focus the production of degreed students and their preparation to succeed in society (Satterfield & Rincones, 2008). Unfortunately, Satterfield and Rincones (2008) found that HSIs in Texas did not fully prepare students for professional careers and continued to “operate with the dominant social norms, values, and cognitive categories that represent workforce development” (p. 16).

HSIs serve diverse and growing student population with different needs than traditional college students (Santiago, 2012; Galdeano, Flores, & Moder, 2012). It is difficult to find a one size fits all accountability system to measure and determine the success of programs and funding geared towards improving higher education access and success for Hispanic students at these institutions. Santiago (2012) argued that new accountability measures need to be explored that can demonstrate the effectiveness of institutional efforts by tracking retention and completion rates of Hispanic students. Galdeano, Flores, and Moder (2012) claimed that the “HSI definition does not involve history or mission” and thus Hispanic-enrolling does not translate to Hispanic-serving. They argue that the institutional culture should be “committed first and foremost to being student-serving” (p. 160).

It is not certain that the 25% threshold set in the HSI federal legislation meets the assumption established by the critical mass theory (Santiago, 2012). A world-system theory that utilizes an organizational framework depicts HSIs, particularly in Texas, as a sector of higher education that fits into a larger social system of higher education in the U.S. (Satterfield & Rincones, 2008). Parsons & Plakhotnic (2006) claimed that, besides racism, critical race theory research could be used to analyze oppression and the need to transform society. Trueba (1999) found that the Latino population is socioeconomically and demographically diverse and indicated that educational levels and literacy are fundamental for social and economic mobility. These differences contributed to the levels of motivation and in attendance and completion rates among Latino students.

For decades, educational leaders and researchers of colleges and universities have stated that higher education institutions must change quickly in order to face society's demands for accountability in the quality of education while managing limited resources (Santiago, 2012; Galdeano, Flores, & Moder, 2012; American Council on Education, 1996). HSIs are viewed as crucial entities for leadership in the economic and social development of their communities through increased access and success of Hispanic students. Satterfield and Rincones (2008) concluded that HSI's in Texas must redefine their norms and values to meet the expectations of the regions where they exist. According to Nellum and Valle (2015), policymakers should recognize that HSIs play an important role in the "reduction of social and educational disparities" (p. 6). They emphasized that if HSIs continue to be underfunded, HSIs will fail to serve their students, particularly Latinos students who will represent a significant portion of the future U.S. population.

HSIs are generally located in urban areas, provide more access to higher education, and have large concentrations of Latino populations, are more affordable and graduate more Latinos than their counterparts (Santiago, 2006). Satterfield and Rincones (2008) urged HSIs in Texas to look beyond academic curriculum to better serve the Hispanic community. Moreover, since Latinos are the fastest-growing demographic group in the U.S., future legislative agendas and political debates about funding higher education institutions should center on this population (Nellum & Valle, 2015).

Barnes and Schmitz (2016) make a compelling statement when they refer to the top-down approach as it is used to implement initiatives to school reform and how this approach may inhibit the success of those same initiatives. They used the Obama administration's top-down change to the nutrition standards for children as an example to explain how elected officials and leaders can pursue initiatives that are deemed to failure if these do not engage communities and the intended beneficiaries in the process. Although many of the changes made to cafeteria menus were meant to improve the children's health and perhaps their eating habits, the menu options were not well received by many students, educators, and parents. These types of changes often are backed up by research, but when leaders seek social change, other aspects need to be considered. For instance, Barnes and Schmitz (2016) emphasized that "recent efforts ... demonstrate [that] data-driven solutions will be feasible and sustainable only if leaders create and implement those solutions with the active participation of people in the communities that they target" (p. 34). When these data-driven solutions or ideas arise, there is a tendency to want to implement new or modify current practices to help those in need, children for example. Barnes and Schmitz (2016) recommended that leaders must resist the urge to quickly implement change initiatives and refrain from top-down decisions. Instead, they emphasize that data-driven

solutions would benefit if they are complemented with community engagement strategies that incorporate community organizations such as non-profits and K-12 public schools.

“Understanding and strengthening a community’s civic culture” (p. 35), building trusting relations, and allowing for community ownership of initiatives, produce long lasting relationships and partnerships where the collective impact and resources can lead to enduring initiatives that achieve real change in communities (Barnes & Schmitz, 2016).

Higher education institutions tend to engage with their communities to exercise their commitment and social responsibility for social change not only in education, but also in other social issues that distress their communities. Chile and Black (2015) claimed that this type of faculty and student involvement is necessary in today’s “knowledge-technology-based society” (p. 249) to produce graduates that will contribute to current and future societal needs. They describe these types of involvement efforts with the community as multi-dimensional that tend to improve the university’s brand recognition and credibility. Despite the growing needs and demands for social change, community-engaged scholarship and research on public school reform have historically been absent in academic research (Kronick, Lester, & Luter, 2013a; Kronick, Lester, & Luter, 2013b). Although K-12 and higher education institutions are, in many ways, complementary to each other, university scholars face many challenges to effectively and successfully create and sustain partnerships between K-12 and higher education. Harkavy and Zuchermann (1999) reported that universities have access to financial resources and human capital that can help impact communities and urban schools. Some of these schools that may be in need for school reform and community engagement and can tap into and address pressing social issues. When participants understand the necessary commitment, moral obligations, and the need for school reform and neighborhood revitalization, institutional barriers such as the

university's cultural views on community engagement can be overcome. Clifford and Petrescu (2012) found that building relationships with a broad and diverse set of community organizations, people, and institutions is fundamental for the sustainability of university-community engagement efforts.

Theoretical Framework

Researchers that study student success provide public policymakers and institutions of higher education markers that allow them to monitor and track college student retention (Braxton et al., 2014; Tinto, 2012). These markers are used in empirical studies guided by theory, which then can be developed into theoretical frameworks for institutional actions towards policies or practices aimed to increase persistence and retention rates. In this section, the researcher presents two theoretical frameworks inspired by the conversations and collaboration between partnerships among several educational leaders from different departments and offices at the HSI where this study will take place. These frameworks guided, in part, the work, design, development, implementation and evaluation of this institutional transformative initiative, Community-Engaged Scholarship & Learning (CESL).

Academic and Social Integration Model

Dewey (1916) developed the idea of experiential learning and postulated that experiences act as forces that drive people through curiosity, initiative, desire and purpose. He describes how an active and a passive element are crucial in the learning process and the absence of either would not yield learning. He concluded that traditional, lecture type educational practices did not engage students as he proposed. In 1984, David Kolb presented his experiential learning theory, which expanded on Dewey's ideas in learning through experiences (as cited in Durkin, 2016). Kolb used this model to provide a simple description of his theory where "experience is

explained by reflection, reflection creates new concepts, and those concepts are used to plan new experiences” (Durkin, 2016, p. 23).

In his case study, Durkin developed a project where students were engaged in a relevant engineering activity that followed Kolb’s experiential cycle. Once the engineering students completed the project, they expressed that experiential learning activities are more “interesting, challenging, and fun at the same time” (Durkin, 2016, p. 28). Durkin concluded that engineering students performed better and felt confident that they were prepared for industry as a result of this type of learning. Yardley, Teunissen, and Dornan (2012) describe experiential learning as constructing knowledge and meaning from real-life experiences. They argue that, in the learner’s educational career, learning must be ‘situated’ and relevant to their career path and should be “triggered by authentic practice-based experience” (Yardley, Teunissen, & Dornan, 2012, p. 161). They also claim that social interactions are fundamental to experiential learning and thus, experiential learning theory is embedded within social learning theory. Yardley, Teunissen, and Dornan (2012) concluded that learners need to be active participants in workplace activities and that different learners require different support for a maximum, positive learning experience. This understanding of theory supporting the learning has resulted in favorable learning conditions throughout the medical education as well (Yardley, Teunissen, & Dornan, 2012).

A study conducted by Pascarella and Terenzini (2005) suggested that college students who were involved in undergraduate research demonstrated significant gains in persistence, pursued a graduate degree, and obtained a career in the field of their choice. In fact, undergraduate research is an effective practice that empowers students and is highly desirable by national organizations such as the Association of American Colleges and Universities. Hu, Kuh, and

Gayles (2007) used four items to measure undergraduate experience where students responded whether they had “worked with a faculty member on a research project,” “discussed ideas for a term paper or other class project with a faculty member,” “gone back to read a basic reference or document that other authors referred to,” and “completed an experiment or project using scientific methods.” (p. 170). The results in their longitudinal, large-scale study suggested that undergraduate research experience in research institutions did not have an advantage over their counterparts, but it did indicate that undergraduate education is improving when it comes to undergraduate research experiences of students since the year 2000. Hu, Kuh, and Gayles (2007) concluded that these gains suggest that reforms in specific areas of undergraduate education are possible.

Tinto (1993, 1987) studied student experiences, both social and academic, that affect their decision to depart from college. Tinto (1993) stresses that it is up to what the student does and the quality of effort the student puts into college determines successful learning, which leads to persistence. He also claims “departures reflect the inability and/or willingness of the person to meet the minimum academic requirements of college work” (p. 82). Theatrically, Tinto (1993, 1987) asserts that student involvement or integration is the key to the student’s ability to acquire knowledge and develop new skills necessary to persist in college settings, especially during the first year of college where issues of social membership tend to supersede the academic ones. The model suggests that an increase in social and academic integration would yield an increase in the student’s institutional and goal commitment, which is directly related to persistence.

In an effort to provide a measure with construct and predictive validity, Pascarella and Terenzini (1980) devised the multidimensional measure of social and academic integration based on Tinto’s conceptual model that would discriminate between persisters and leavers. The data

utilized in this study was generated from a longitudinal study of approximately 10,000 freshmen/subjects from which a random sample of 1,905 subjects was selected. Pascarella and Terenzini (1980) decided to focus on freshmen because this is where student attrition rates tended to be the largest when compared to second, third and fourth year students. Their findings supported the predictive validity of Tinto's model, but expressed some reservations on the use of the scales. They advised that the measure of the individual subscales could depend heavily on the student population under study.

In 2004, French and Oakes conducted a study seeking to improve Tinto's model by examining the psychometric properties of the Institutional Integration Scale first created by Pascarella and Terenzini (1980). Based on Tinto's (1975) theoretical framework, the scale consisted of 30 items with the following five subscales: Scale I: Peer-Group Interactions, Scale II: Interactions with Faculty, Scale III: Faculty Concern for Student Development and Teaching, Scale IV: Academic and Intellectual Development, and Scale V: Institutional and Goal Commitment (Pascarella & Terenzini, 1980). French and Oakes (2004) began their revision of the scale by rewording the items that were negative in form to positive ones and added items that were originally removed by Pascarella and Terenzini (1980) due to low-factor pattern coefficients (i.e. $< .35$). Reliability tests and item analysis on data samples showed that the revised scale ($\alpha = .92$) outperformed the original scale ($\alpha = .83$) in internal consistency and reliability due to the increased sample size and the item revisions. This study also suggested that Social and Academic integration factors might not be mutually exclusive. Instead, French and Oakes (2004) presented two broader factors, Faculty and Student, as social and academic integration may be due to formal and informal interactions with peers and/or faculty. As a result of their analysis and findings, French and Oakes (2004) recommended the revised Institutional

Integration Scale for “assessing college student’s level of academic and social integration with respect to interactions with faculty, peers, and the university environment” (p. 97).

In 2014, Braxton et al. added a psychological dimension to Tinto’s model, which considered the ability to pay for tuition, cultural capital, and sense of community in residence halls to name a few. They focused more on the commitment of the institution as perceived by the students. For instance, Braxton et al. (2014) claimed that the more students experience good teaching practices or fulfillment of their social and academic expectations, the more students would perceive institutional commitment to their welfare and integrity. This begins to shift and balance the equation of “commitment” between the student’s behavior to persist and the institution’s policies and practices aimed to support the student welfare.

Climate for Diversity and Sense of Belonging

Recent research has created an important counter discourse to disrupt institutional practices that exist in deficit thinking structures and tracking confirms that large numbers of Latinos from low-income families rarely attain social mobility through education (Zambrana & Hurtado, 2015). Mexican Americans, the largest subgroup of Latino students, have the longest history on American soil (Zambrana & Hurtado, 2015). Unfortunately, higher education institutions have excluded the role of historical forces in their programs that have yielded low levels of educational attainment among Mexican American students, self-efficacy and sometimes depression and diminished sense of hope. Individual and cultural factors are essential for educational leaders to dismantle the deficit-driven paradigm on Mexican American educational performance (Valencia, 2010).

“Improving individual health is one approach to making a better world.” (Maslow, 1999, p. 7). Maslow’s (1970) philosophy on human motivation argues that a human need will tend to

dominate future actions of a person whose culture can be an adaptive tool to cope. He also portrayed feelings of self-confidence, worth, strength, capability and adequacy and being useful and necessary because of self-esteem. Building on the ideas presented by theorists such as James, Dewey, Wertheimer, Goldstein, Freud, Adler, and Gestalt and through clinical observations and empirical data, Maslow constructed his theory based on five levels of a “hierarchy of needs” (Winer & Norman, 2010). These five levels are: (1) physiological needs (hunger, thirst, sleep, etc.), (2) safety needs (freedom from threats, order, stability, etc.), (3) love-affection-belongingness needs (love), (4) esteem needs (desire for achievement, reputation, respect, etc.) and (5) self-actualization (reach full potential). Stum (2001, p. 6) stated “As each of these needs is met, or substantially satisfied, the individual focuses on attaining the needs at the next level.” Basic needs are easily satisfied by other persons, not in isolation, and as a person matures through experiences, good or bad, that person tends to deal with life’s problems adequately (Maslow, 1970). More importantly, self-actualization is evident when people can see beyond their own needs and self-impose a life-long mission to fulfill distinguishing them from ordinary people, both qualitatively and quantitatively. They are more autonomous and self-directed with philosophies that lead to their own growth and that of others (Maslow, 1999).

Based on his extensive quantitative study, D. L. Stum (2001) took Maslow’s hierarchy of needs and created a hierarchical model of organizational commitment and presented it in a five level Performance Pyramid. Stum (2001, p. 8) found that “organizational performance at any one level is determined both ‘top down’ and ‘bottom up’.” He claimed that the interactions between superiors (administrators) and subordinates (faculty) create an environment that motivates and retains employees. In their study, Allendoerfer et al (2012) found that students who interacted with family, student organizations, in sports events and other outside

communities met more of Maslow's (1968) expanded eight-level hierarchical needs. Because of their interactions with communities outside the classroom, students were able to meet higher level needs: safety, belonging, and self-esteem. This allowed them to perform better in the classroom, handle the stress of a failing grade and complete major assignments. Allendoerfer et al. (2012) discovered that "the frequency with which belonging needs are mentioned when talking to students, as faculty members and administrators in engineering we have an obligation to address these needs more fully in the classroom and other academic environments" (p. 533).

Drawing from Spady's (1970, 1971) Sense of Belonging Scale, which distinguished between cohesion and subjective cohesion, Hurtado and Carter (1997) focused on measuring the subjective sense of integration rather than the amount of participation and interaction with academic and social systems in institutions of higher education. In contrast to Tinto's model (1993), Hurtado and Carter (1997) developed the Sense of Belonging construct or scale by considering other factors dealing with the college environment impacting Latino students' sense of affiliation to the college or university. This, after noticing that student performance based on (GPA) was not significantly associated to students' sense of belonging. Their study revealed that activities in which Latino students are involved in do not necessarily create a sense of belonging. On the other hand, social community organizations and religious organizations have demonstrated a building of stronger sense of belonging. The researchers claimed that Latino students have a stronger sense of belonging to these organizations than to their college simply because they are more familiar with them before entering college. Hurtado and Carter (1997) recommended that "investigations of students' affiliations with external communities that enhance the college experience may be a fruitful area of research on Latinos [college students]" (p. 338).

One aspect of this empirical study uses Sense of Belonging as a dependent variable and Tinto's social and academic integration, background, and a grouping variable which consists of students who enroll in a Community Engaged Scholarship and Learning (CESL) Experiences course, the treatment, and those who did not enroll in a CESL course. In these courses, students were engaged in collaborative research projects that are relevant to societal issues that affect the local communities, the region and beyond. The CESL curriculum is designed by faculty along with external community leaders of the region who bring their expertise of those same issues. As Hurtado and Carter (1997) posited, exposure to external community organizations may enhance Latino students' college experience and increase their affiliation to the university and the community.

Maestas, Vaquera, and Zehr (2007) studied factors impacting Sense of Belonging at a Hispanic-serving institution where the three-item construct was used as part of the theoretical framework. Sense of Belonging was the dependent variable with alpha reliability of .895 and independent variables that were considered were background, academic integration, social integration, and experiences with and perceptions of diversity among others. More importantly, in this study academic integration deviated from Tinto's (1993) scale. Maestas, Vaquera, and Zehr (2007) used "(a) finding academic help when needed, (b) time spent studying, (c) academic support programs, (d) faculty interest in a student's development, and (e) had classes with peer discussions/interaction" as measures for academic integration (p. 245). One important finding in their study was that academic and social integration played a major role in predicting sense of belonging.

These results are crucial for this study since social and academic integration are also considered. Although Tinto's (1993) model may have shown significant improvements since its

inception, Maestas, Vaquera, and Zehr (2007) version of academic integration seems more appropriate for this study and for the students being served at this institution. Although, the student population may not be the same, that fact that this university is a Hispanic-serving institution, is another important aspect that promises positive results. The researchers claimed that “Social and academic integration leads to an increased sense of belonging and ultimately persistence” (p. 253) and recommended that their study be replicated in other Hispanic-serving institutions.

Another critical revelation is the implications that resulted from Maestas, Vaquera, and Zehr’s (2007) study. They suggested that sense of belonging can be nourished in the classroom by faculty taking more interest in their students, becoming more involved with students and support systems taking on a mentorship role while being acknowledged and rewarded by administration. This is pertinent to this study since the CESL organizers provide faculty training on getting to know their students, their language, their culture and the historical aspects of the communities they come from. Additionally, CESL faculty receive incentives such as stipends, tenure promotion and scholarly recognition.

A study conducted by Johnson et al. (2007) revealed similar results as those presented by Hurtado and Carter (1997) even though the Sense of Belonging construct items were rephrased. Their items followed Hurtado and Carter’s (1997) concepts of Sense of Belonging. This new study focused on first-year undergraduate student from different racial/ethnic backgrounds focusing on students’ perceptions of their experiences as intermediate outcomes for sense of belonging. Their findings showed that first-year students of color, including Hispanic students, perceived a less strong sense of belonging than White students. Additionally, first-year Hispanic students’ sense of belonging was significantly related to interactions with professors and it was

negative. On the other hand, their findings indicated that Hispanic students interacting with peers increased their sense of belonging. Johnson et al. (2007) claimed that first-year Hispanic students' perceptions of their transition to college were related to campus racial climate and their sense of belonging. Their conclusions are consistent with other research (Hurtado & Carter, 1997; Hurtado, Griffin, Arellano, & Cuellar, 2008; Locks, Hurtado, Bowman, & Oseguera, 2008). Johnson et al. (2007) recommended that "institutions must attend to formal and informal environments in order to facilitate a more tolerant and responsive racial and general campus climate" (p. 538).

In 2009, Nuñez adopted the framework presented by Hurtado et al. (1999) that considers the multiple dimension of campus climate and its effects on sense of belonging hypothesizing that the feeling among Latino students of obligation to give back to their communities impacts their sense of belonging. Nuñez (2009) increased the number of items in the sense of belonging construct to five using Bollen & Hoyle's (1990) ideas and yielded moderate to high Cronbach's alpha reliability coefficient of 0.882. The hostile climate for diversity reliability measure was moderate, 0.604. Their findings showed a strong role of racial climate, obligation to give back to the community, and positive cross-racial interactions affecting students' sense of belonging.

Reframing Higher Education

Student success models, such as those presented thus far in the previous section are predominantly student-centered. The purpose of this section is to elevate the role of students and community members as creators of knowledge equipped with cultural wealth that programs, curriculum, and pedagogy have not tapped into or aligned with. Although student-learning outcomes are important for program evaluations, the quality of the program design objectives, preparation and implementation practices need evaluation. Finally, this section provides some

insight as to how the HSI under study can utilize assessment tools that focus on addressing the incompatibilities of existing programs and organizational designs, particularly those seeking social change and transformation impacting the individual, the institution and the community they serve.

Assets and Capital of Latino Students

Valencia (2010) traces deficit thinking back to the mid-1800s, after the Treaty of Guadalupe Hidalgo in 1848, when Mexican Americans were, unfortunately, seen as conquered and inferior to Whites. Whites saw Mexican Americans as an inferior, conquered race and Mexican Americans accepted it. Valencia (2010) argues that this way of thinking set the conditions for Whites to maintain a nationwide system of privilege and domination marginalizing minority groups including Mexican Americans, especially in education. Blanton (2007) describes how the Progressive Movement began the Americanization of Mexican children, as well as of immigrant children from other countries, through the submersion of English-Only instruction. He also shows how this subtractive instructional methodology, supported by legislation, taught Mexican American children that ethnicity was dangerous and un-American. This assimilation movement continued well into the 1930s where educational leaders like Annie Webb Blanton, former state superintendent of public instruction from 1919 through 1923, were misled by researchers, who proved through pseudoscience that the failure of Mexican American children was due to their “social, cultural, and educational retardation” (Blanton, 2006, p. 67). According to Valencia (2010), this was clearly a critical case of deficit thinking with micro-, meso-, and macro- dimensions. Educators blamed Mexican American children of their failure (micro-dimension) when in reality the school failure was due to the lack of teacher preparation on bilingual instruction (meso-dimension) and the expulsion policies

backed up by the English-Only Law passed in 1918 (macro-dimension). This oppressive system suppressed all hopes and dreams of many Mexican Americans by not allowing them to speak up.

Freire (1970) envisioned that a loving commitment by teachers is the foundation to pedagogy that will get students to regard themselves as committed to their education. More recently, this caring, responsible pedagogy research has been presented and well supported by Guajardo, Guajardo, & Casaperalta (2008), Delgado Bernal (2001), and Ladson-Billings (1995) who argue that underrepresented minorities and their communities have a vast amount of untapped cultural wealth.

Many Mexican American students, including first generation immigrants, have been able to succeed in their educational and professional careers as well as in their personal lives. Yosso (2005) purports that this success originates from the students' community cultural wealth and brings about strength and confidence. For instance, pedagogy of the home allows visionary and inspiring leaders from marginalized communities to instill motivation, resilience, and endurance on youth (Delgado Bernal, 2001). Guajardo & Guajardo (2016) describe this emboldening, everlasting leadership attributes to parents that learned through "La Universidad de la Vida." These qualities can be found in many parents of Mexican American children that live in the *colonias*. Although some parents may not be leaders in their communities, they may be leaders in their church, work, social groups, or family and all have graduated from "La Universidad de la Vida." This may certainly lead to the construct of a similar community cultural wealth that allowed African Americans to develop their "social capital (Black social capital) for the survival and success in a segregated world bounded by ... racism and discrimination" (Yosso, 2005, p. 81). Under the lens of critical race theory, community cultural wealth is passed down to Mexican American children through *consejos* (advice) within *pláticas* (conversations). This

wealth is what the youth inherited from their parents. It allowed them to keep their aspirations, resist oppressive conditions, maintain a healthy connection to their community and, through their resilience, maneuver through social institutions while lifting others.

Culturally Relevant Pedagogy

While Valencia (2010) exposes deficit practices and policies, he also posits strategies to dismantle these deficit approaches that hinder and marginalize minority students. Schreiner, Louis, and Nelson (2012) builds on this notion of dismantling deficit-thinking approaches by emphasizing strength-based models and practices that nurture the students' knowledge and skills while managing "deficiencies". This philosophy or perspective focuses on developing students' strengths and talents by restructuring resources to create opportunities that may lead to higher levels of engagement in the learning process, especially as classroom practices. Schreiner, Louis, and Nelson (2012) recommended five strengths-oriented practices that educators can implement in the classroom: (1) create a sense of community by identifying and emphasizing students' strengths, (2) connect classroom lessons to students' interests and capitalize on their strengths, (3) create challenging and yet meaningful assignments with clear expectations, (4) make certain that students understand that they are in control of their learning and are aware of the strategies for successful learning, and (5) provide frequent constructive feedback in a timely and respectful manner that builds healthy teacher-student relationships. Higher education institutions should look at students' holistic success through thriving, implement long-term transition programs that go beyond the college experience, and know students' strengths and focus on developing those strengths. Schreiner, Louis, and Nelson (2012) hope that these ideas will allow educators to reflect on their practices and engage in dialogue that create "campus climates that enable all students to thrive" (p. 197). Programs and initiatives that include

historically underrepresented populations bring out fresh ideas that have been significantly researched and have shown results that lead to greater student success and less students being left out.

There are many students, teachers, administrators and parents who are victims to Freire's (1970) teacher-student contradiction, which leads them to believe in what he describes as the "banking concept" of education. Teaching practices that invoke pedagogy of poverty laid out by Haberman (1991) were analyzed with a lens of critical race theory by Ladson-Billings (2014, 1995) who presented a compelling argument towards culturally relevant pedagogy or a pedagogy for the underclass developed by Giroux and Simon (1989). Critical student-led discussions and the combination of these approaches have empowered these students with confidence and the ability to accept and affirm their identity and, through critical perspectives, be able to identify and critique the existing institutional inequities (Ladson-Billings, 1995; Guajardo, Guajardo, & Casaperalta, 2008). Social activists Guajardo, Guajardo, Casaperalta (2008) and the well-organized college preparatory program (Llano Grande Center) set up for learning beyond the high school level and well into the college level, taught students to overcome deficit thinking (Valencia, 2010), the banking concept education (Freire, 1970), the pedagogy of poverty (Haberman, 1991) and managed to develop a culturally relevant pedagogy (Ladson-Billings, 1995) leading towards a pedagogy for social change. Students and teachers in these types of environments engage in conversations dealing with critical societal issues reframing education through curriculum, teaching, and research that respond to these extant pressing conditions, including access to higher education opportunities for underrepresented minorities. Dewey (1916) described learning as a challenge to thought in a variety of ways and approaches that stimulate imagination and discourse among peers. It is through experience in multiple

dimensions (e.g. ontology, axiology, epistemology) that learning can be achieved (Denzin & Lincoln, 2011). Instruction then requires an understanding and knowing of the student as a human being (ontology) where the values and ethics allow the teacher to change his/her beliefs (axiology) and acknowledge their students' ways of knowing (epistemology). Similar views of learning were posited by Freire (1970), where teaching is an ongoing process of learning with the teacher-student and students-teachers engaging in discourse as they continue to develop a critical consciousness through the totality of their experiences.

Community-Engaged Scholarship

Historically, education generally lagged society in numerous attempts to advance agricultural education (Duemer, 2007). In 1812, President Madison addressed the need for federal offices in these areas, but Congress did not pass any legislation (Duemer, 2007). In 1852 the United States Agricultural Society was established and later requested the formation of the Department of Agriculture and in 1862 a bill, which created the Agricultural and Statistical Bureau, was introduced and approved by Abraham Lincoln (Duemer, 2007). This was long due since George Washington had recognized the need for change in agricultural practices in 1786 to improve productivity by educating farmers. Thomas Jefferson stressed the need for a land grant system to support education in 1806. Not until The Morrill Act of 1862 that colleges received federal funding from land grants for agricultural education (Duemer, 2007).

In the 20th Century there was a concentrated effort to advance education to at least keep up with the needs of society. Organizations and legal groups in search for equity and greater access to higher education had significant breakthroughs. Minority students were able to enter college in much greater numbers thanks to the federal financial aid that came about after WWII (Whiting, 1988). Soon after, the historic Supreme Court Decision of 1954 and the Fourteenth

Amendment of the constitution and provisions of Title VI of the Civil Rights Act of 1964 addressed issues of racism and discrimination (Berrian, 1982). Not until the continual action against the system in the form of racial protests on campuses and in the communities that the higher education system began to implement changes in the 1970s and 1980s such as open admissions, recruitment of minorities, and ethnic studies (Astin, 1984).

As higher education was being transformed from within and with practically no existing minority leadership, the Carnegie Commission on Higher Education set up a new classification of colleges and universities in 1970 (McCormick & Zhao, 2005). This provided a venue for higher education to reexamine its role and address the major issues it faced at the time, particularly the lack of involvement with the community and minorities. The classification allowed for comparisons between institutions in manageable categories, but continued to explore other ways in search for parsimony based on sources of funding, types and degrees granted, curricular specialization, admission selectivity, and preparation of doctoral recipients. This led to the second classification with four categories: leagues, four- and two-year, southern regional education board, and salary survey. Carnegie developed these classifications by acquiring data from third party organizations, which had been previously collected (McCormick & Zhao, 2005). Other ways of classifying that were considered, but not implemented were: knowledge production, knowledge creation, program specialization, intensive and extensive. In 2005 a new Carnegie classification resulted from lessons learned from the previous classification (McCormick & Zhao, 2005). The new classification looked at several frameworks: provide a set of web-based tools and resources, voluntary participation of institution, and efforts to assess and improve undergraduate education. In looking at all of these new ways of classifying, Carnegie

ceded some of its authority, but continued to make improvements in the classification of institutions of higher education (McCormick & Zhao, 2005).

From the 1980s to the 1990s, the top priority of the Carnegie's Foundation was the role of undergraduate education (Boyer, 1996). In 1869 Charles Elliot described the colonial college tradition – “the prime business of American professors must be regular and assiduous class teaching” (p. 130). Higher education was linked to America's industrial, technological and agricultural revolution, but later became more geared to service, and recent research and publication emphasized and rewarded tenure (Boyer, 1996). Colleges and universities have been revising and renewing their systems of faculty rewards where scholarship is based more on what scholars are and the quality of their character rather than what scholars do. Boyer (1996) identified six standards of excellence in scholarship found in faculty handbooks and teacher evaluations: did the scholar have clearly stated goals, did the scholar follow well defined and appropriate procedures, did the scholar have adequate resources and used them in effective ways, did the scholar communicate effectively to others, did the scholar engage in reflective self-critique and did the scholarly effort lead to significant results.

In the past, universities did not engage with communities even though they have always been embedded geographically (Whiteford & Strom, 2013). This created a certain level of distrust and animosity that can be fixed with effective implementation of community engagement. Giles (2016) suggests that support systems like the Carnegie Classification for Community Engagement are beginning to manifest a shift in “higher education to a more responsive engaged human enterprise” (p. 195). Service-learning has long been used as a high impact pedagogical tool. Today, community engagement is the overarching term used by scholars who continue to advance their scholarship of engagement (Giles, 2016). This led to the

emergence of community-engaged scholarship, which outlines scholarship as a relational process. For instance, the Carnegie Classification for Community Engagement emphasizes mutuality or reciprocity among scholars and community members. Traditional practices and epistemologies that have been established as norms and are entrenched in the culture of academic disciplines and departments tend to resist the implementation and advancement of community-engaged scholarship. Fortunately, community-engaged and civically engaged scholarships are gaining ground over the traditional practices of academic disciplines and departments (Saltmarsh, Janke, & Clayton, 2015). Morin, Jaeger, and O'Meara (2016) found that, over the last decade, community engagement has been strengthened and benefited students at the graduate level. This was evident in their account for an increase in methodological approaches to the study of community problems in their dissertations. Whiteford and Strom (2013) found that more students, faculty, and administrators are involved in community engagement where long-lasting relationships between universities and their communities strengthen the learning that takes place in academic settings. Bringle, Hatcher, & Muthiah (2010) asserted that this type of engagement impacts students' performance in classes, graduation rates, and career opportunities.

It is possible that engaged students and faculty in community-based research and administrators of universities use community engagement as a transformational approach to learning, teaching, and tenure promotion (Whiteford & Strom, 2013). For example, institutions that were interested in implementing community-engaged scholarship initiatives were selected in a nation-wide initiative to bring their leaders with this common interest together resulted in the creation of new policies that reflected community-engaged scholarship at some of those institutions (Gelmon, Blanchard, Ryan, & Seifer, 2012). Such policies allocated funds and provided support that motivated faculty who do this kind of work. Changes to common practices

and tenure promotion policies would allow community-engaged scholars to flourish and transform their disciplines or fields. Faculty development activities such as the Community-Engaged Scholarship Faculty Development Charrette tend to promote and facilitate awareness of community-engaged scholarship (Gelmon, Blanchard, Ryan, & Seifer, 2012). This type of scholarship helps faculty, who may or may not be practicing this type of scholarship, to become engaged with external organizational leaders and expand their research and pedagogy to have a direct impact on the community they serve.

CHAPTER III

METHODOLOGY

The study intended to measure the impact of a South Texas HSI's social responsibility through the implementation of the Community-Engaged Scholarship and Learning (CESL) framework and courses on college students' institutional affiliation (i.e. sense of belonging and institutional integration), especially of Hispanic students. Specifically, the research was to: (1) determine if sense of belonging is a function of social integration, academic integration, perceived campus climate, CESL enrollment status, service learning enrollment status, language proficiency, gender, and immigration status of college students at a HSI in South Texas; and (2) compare the social and academic integration experiences and sense of belonging of college students who enroll in CESL courses and service learning courses with those who do not enroll in CESL or service learning courses at a HSI in South Texas.

The subsections that follow describe the research design, population, sample and participants, instrumentation, setting, research questions and hypotheses, data collection procedures, data analysis procedures, and limitations of the study to address the following two research questions:

1. What types of perceptual and behavioral characteristics (e.g. social integration, academic integration, perceived campus climate, CESL enrollment status, service learning enrollment status, language proficiency, gender, and immigration status) are

associated with sense of belonging for college students, especially Hispanic students at a HSI in South Texas?

2. How do community-engaged scholarship and learning experiences encompassed in CESL courses (the treatment) impact college students' sense of belonging and academic and social integration, especially Hispanic students at a HSI in South Texas?

Research Design

Mills and Gay (2016) present an introduction to a variety of research designs for qualitative, quantitative, and mixed methods research. They describe qualitative research as inquiry based and describe data collection as consisting of a wealth of narrative and visual data. Quantitative research requires numerical data and statistical analysis to describe, explain, predict, or control phenomena of interest. Accordingly, mixed methods research combines both quantitative and qualitative methods in a single study.

This study utilized a robust quantitative research design. Campbell and Stanley (1963) sought to improve quantitative experimental research designs in education by searching for methods of data collection that would yield adequate and appropriate data to which statistical analysis procedures could be applied. This is particularly important in the field of education research given that in the Thorndike's era, around the 1920s and 1930s, experimental research had detrimental results to minority groups like Blacks and Hispanics (Valencia, 2010). Campbell and Stanley (1963) emphasized that the results from experimental research, if successful, should be replicated and cross-validated at other times under other conditions before they become an established part of science and before they could be theoretically interpreted with confidence.

For the most part, Campbell and Stanley (1963) dive into experimental research designs and describe the Salomon Four-Group Design (1949) as a true experimental design with high prestige and with explicit considerations for external validity factors. For instance, in the Salomon Four-Group Design case, once a target population is identified, a simple random sampling process can be implemented using a table of random numbers in a research textbook or website (Mills & Gay, 2016). Before data collection, constructs must be operationalized into variables (independent and dependent) so that valid and reliable instruments in the form of surveys and/or achievement tests can be identified. Figure 1 shows a simple graphical representation of the Salomon Four-Group Design:

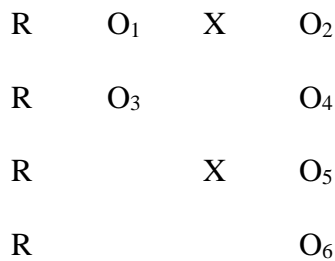


Figure 1: Salomon Four-Group Design

Where, each row represents a group of individuals, “R” represents the random assignment of subjects to separate treatment groups, “O” represents a measurement or some process of observation, and “X” represents the exposure of a group to an experimental variable, an event, or a treatment. Mills and Gay (2016) stress that in the case where subjects cannot be randomly assigned to groups, the research design becomes a quasi-experimental design. This is particularly true in educational settings where students in classrooms as a unit are randomly assigned to the treatment. For this reason, this study followed a quasi-experimental quantitative research design with one group receiving the treatment (a CESL course), a group enrolled in service learning courses and a control group (No CESL and No service learning). Each group consisted of students in their second, third or fourth year in college. Furthermore, data on

students' experiences and attitudes (e.g. sense of belonging) is generally gathered after students have had time to engage in campus activities such as those that were present in the treatment, CESL courses (Hurtado & Carter, 1997; Nuñez, 2009). In this study, pre- and post-test measures were used, Table 1 shows the graphical representation of the research design.

Table 1

Research Design of the Study

<u>Group</u>	<u>Pre-Test</u>	<u>Treatment</u>	<u>Post-Test</u>
0	\widetilde{O}_0	No CESL & No Service Learning	\widetilde{P}_0
1	\widetilde{O}_1	CESL	\widetilde{P}_1
2	\widetilde{O}_2	Service Learning	\widetilde{P}_2

Where the treatment group is CESL, Service Learning is a comparison group, and No CESL & No Service is the control group. The vectors $\widetilde{O}_0, \widetilde{O}_1$ and \widetilde{O}_2 are the pre-test measures and $\widetilde{P}_0, \widetilde{P}_1$ and \widetilde{P}_2 are the post-test measures of the dependent variables, sense of belonging and institutional integration (social and academic).

Conceptual Model

The conceptual model presented in Figure 2 is the result of the researcher's literature review, presented in Chapter II, and the experiences of the researcher as part of the collaborative work and leadership with educational leaders of colleges, departments and offices and with community organizers and leaders of the region. These alliances and partnerships led to the creation of the Community-Engaged Scholarship & Learning (CESL) Initiative at the HSI in South Texas where the present study took place.

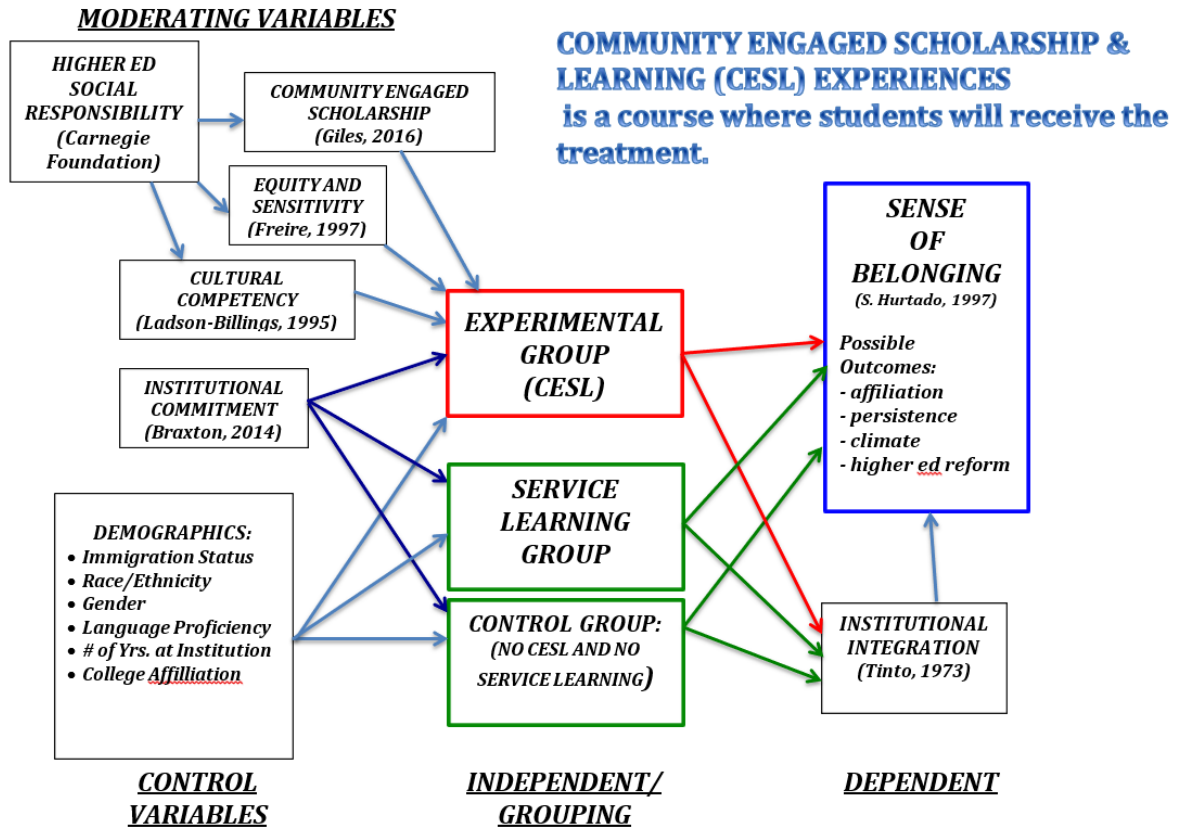


Figure 2: Conceptual Map

Population, Sample and Participants

The targeted population consisted of undergraduate college students attending the HSI in South Texas where this study was conducted. Particular interest was given to Hispanic college students attending this HSI. The sample consisted of one treatment group: students who enrolled in a course taught by an instructor who completed the faculty development workshop series through the CESL framework and is implementing CESL pedagogies and research in that course. Since service learning is a form of community-engaged scholarship, the service learning group was used as an alternate comparison group exposed to a similar treatment as CESL. The sample also consisted of one service learning comparison group: students who enrolled in either Service Learning. One control group consisted of students not enrolled in CESL courses, not enrolled in

service learning courses, courses not taught by CESL faculty, and courses not taught by service learning faculty. The subjects in these groups were students enrolled in these courses during the Fall Semester of 2018.

This study consisted of N = 208 subjects where: 59% were female and 41% males; 4% have been 1 year at the HSI, 21% for 2 years, 37% for 3 years, 26% for 4 years and 12% for 5 years of more; 85% Hispanic/Latino, 6% Asian Pacific Islander, 5% were White, 1% Black, and 3% from other ethnicities; 81% from the Sciences, 15% from Education and 4% were from the College of Medicine; 17% were First Generation immigrant students, 56% were Second Generation and 27% were Third Generation; and 28% were from the Control Group, 50% from the Service Learning Group, and 22% from the CESL Treatment Group.

Instrumentation and Data Sources

Campbell & Stanley (1963) define an “experiment” as the portion of research in which variables are manipulated and their effects on other variables are observed. They described how two factors may jeopardize the results of the experiment. One factor is internal validity. It is the basic minimum without which any experiment is un-interpretable and has eight extraneous variables: history, maturation, testing, instrumentation, statistical regression, biases, experimental mortality, and selection-maturation interaction. None of these extraneous variables cause any validity threats to the obtained results (Campbell & Stanley, 1963). The second factor is external validity, which may be jeopardized by: reactive effects to pretest, interaction effects due to selection biases, reactive effects of experimental variable in non-experimental settings, and multiple-treatment interference. In this study, subject responses may have been affected by the pretest survey in the classroom setting and could cause them some bias depending on how they perceive the environment. Subjects could also have been exposed to similar experiences in their

communities and/or external organizations through social groups, jobs or even internships, which could have impacted the criterion variables. Subjects may have also been exposed to multiple-treatment interference as other forms of community engagement factors could impact their responses.

A level of experimental control that this study considered was an item in the demographic section of the survey where students were asked if they were currently enrolled in another course that required them to participate in some form of community engagement activity. This item was helpful in identifying students who may or may not have been receiving multiple-treatment interference and thus contaminating the data across groups. Figure 3 shows a graphical representation of how the three groups (CESL, Service Learning, Control) may have overlapped. For example, if students in the Control group stated that they were currently enrolled in another course that required them to do community service and/or work with a community organization, they could also have been enrolled in a course that could be providing a similar form of the treatment. Similarly, students identified as enrolled to the CESL or the Service Learning groups could be receiving multiple-treatment interference. As a result, this item was used to ensure that subjects in the control group were not receiving any form of similar treatment and that subjects in CESL or in Service Learning are in fact receiving their treatment, respectively.

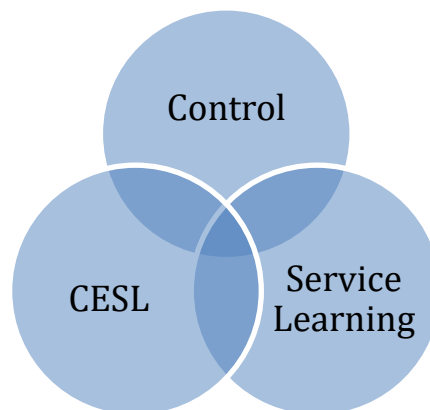


Figure 3: Multiple - Treatment Interference

To assess the students' perceived experiences with peers, faculty, and their community, the sample of college students voluntarily completed the surveys/instruments in paper form and in their classrooms. The survey/instrument that was used in this study included two scales: the Sense of Belonging Scale (Nuñez, 2009; Hurtado & Carter, 1997) and Institutional Integration Scale (French & Oakes, 2004). The authors were contacted by email to request permission to use items from their surveys for this study, see Appendix A. These scales were selected by the researcher with the intention to get a broad understanding of college students' experiences at a HSI in South Texas, especially of Hispanic students. The operationalization of the two dependent variables in this study was as follows:

1. Sense of Belonging as measured by the extended five-item Sense of Belonging Scale (Nuñez, 2009; Hurtado & Carter, 1997).
2. Institutional Integration as measured by the revised 34-item Institutional Integration Scale (French & Oakes, 2004, Pascarella & Terenzini, 1980).

In an effort to provide a measure with construct and predictive validity on Tinto's (1975) theoretical framework, Pascarella & Terenzini (1980) devised the multidimensional measure of social and academic integration based on Tinto's conceptual model that would discriminate between persisters and leavers. The data utilized in their study was generated from a longitudinal study of approximately 10,000 freshmen/subjects from which a random sample of 1,905 subjects was selected. The alpha reliabilities of the five scales were adequate and ranged from .71 to .84. Moreover, all correlations of all scales with the criterion variable were significant at $p < .01$ level and accounted for 44.45 percent of the variance in the correlation matrix. Their findings supported the predictive validity of Tinto's model, but expressed some reservations on the use of the scales. They advised that the measure of the individual subscales

could depend heavily on the student population under study. In 2004, French and Oakes conducted a study seeking to improve Tinto's model by examining the psychometric properties of the Institutional Integration Scale first created by Pascarella & Terenzini (1980). Based on Tinto's (1975) theoretical framework, the scale consisted of 30 items with the following five subscales: Scale I: Peer-Group Interactions, Scale II: Interactions with Faculty, Scale III: Faculty Concern for Student Development and Teaching, Scale IV: Academic and Intellectual Development, and Scale V: Institutional and Goal Commitment (Pascarella & Terenzini, 1980). French and Oakes (2004) revised the scale by rewording the items that were negative in form to positive ones and added items that were originally removed by Pascarella & Terenzini (1980) due to low-factor pattern coefficients (i.e. $< .35$). Reliability tests and item analysis on data samples showed that the revised scale ($\alpha = .92$) outperformed the original scale ($\alpha = .83$) in internal consistency and reliability due to the increased sample size and the item revisions. The researchers also suggested that Social and Academic integration factors might not be mutually exclusive.

In contrast to Tinto's model (1993), Hurtado and Carter (1997) developed the Sense of Belonging construct or scale by considering other factors dealing with the college environment impacting Latino students' sense of affiliation to the college or university. This, after noticing that student performance based on (GPA) was not significantly associated to students' sense of belonging. Drawing from Spady's (1970, 1971) Sense of Belonging Scale, which distinguished between cohesion and subjective cohesion, Hurtado and Carter (1997) focused on measuring the subjective sense of integration rather than the amount of participation and interaction with academic and social systems in institutions of higher education. Their study revealed that activities in which Latino students are involved in do not necessarily create a sense of belonging.

On the other hand, social community organizations and religious organizations demonstrated a stronger sense of belonging. Maestas, Vaquera, and Zehr (2007) studied factors impacting Sense of Belonging at a Hispanic-serving institution where the three-item construct was used as part of the theoretical framework. Sense of Belonging was the dependent variable with alpha reliability of .895 and independent variables that were considered were background, academic integration, social integration, and experiences with and perceptions of diversity among others. A study conducted by Johnson et al. (2007) revealed similar results as those presented by Hurtado and Carter (1997) even though the Sense of Belonging construct items were rephrased, they followed Hurtado and Carter's (1997) concepts of Sense of Belonging. Nuñez (2009) increased the number of items in the sense of belonging construct to five using Bollen and Hoyle's (1990) ideas and yielded a moderate to high Cronbach's alpha reliability coefficient of 0.882. The hostile climate for diversity reliability measure was moderate, 0.604.

Based on the literature review and the CESL framework, items from these two instruments were selected and combined to create the survey, which was given to the sample of the student population from which the data was generated. See Appendix B to see the resultant 38-item survey. Students responded to a series of 5-point Likert scale items and demographic questions. To secure the data source and as recommended by the Internal Review Board (IRB) from the HSI where this study was conducted, an Internal Permission Letter was obtained from five key administrative faculty and staff: 1) the College Dean who is spearheading the CESL initiative/treatment; 2) the Associate Dean who oversees community engagement throughout the college leading the implementation of CESL courses; 3) the Associate Vice President who oversees community engagement and assessment throughout the university; 4) the Associate

Dean who oversees service learning throughout the university; 5) the Director who approves designated service learning and CESL courses, see Appendix C.

Treatment

Recent research has created an important counter discourse to disrupt institutional practices that exist in deficit thinking structures and tracking confirms that large numbers of Latinos from low-income families rarely attain social mobility through education (Zambrana & Hurtado, 2015). Mexican Americans, the largest subgroup of Latino students, have the longest history on American soil (Zambrana & Hurtado, 2015). Unfortunately, higher education institutions have excluded the role of historical forces in their programs that have yielded low levels of educational attainment, self-efficiency and sometimes depression and diminished sense of hope among Mexican American students. Individual and cultural factors are essential for educational leaders to dismantle the deficit-driven paradigm on Mexican American educational performance (Valencia, 2010).

In the Community Engaged Scholarship and Learning (CESL) courses, the treatment, students were exposed to opportunities engaging them in collaborative research projects that were relevant to societal issues that affect the local communities, the region and beyond. The CESL curriculum was designed by faculty along with external community leaders of the region who brought their expertise of those same societal issues. This involvement of community organization responds to Hurtado and Carter's (1997) recommendation of the importance of student exposure to external community organizations to enhance Latino students' college experience and increase their affiliation to the university and the community.

Maestas, Vaquera, and Zehr (2007) used "(a) finding academic help when needed, (b) time spent studying, (c) academic support programs, (d) faculty interest in a student's development,

and (e) had classes with peer discussions/interaction” as measures for academic integration (p. 245). They also suggested that sense of belonging can be nourished in the classroom by faculty taking more interest in their students, becoming more involved with students and support systems taking on a mentorship role while being acknowledged and rewarded by administration. CESL faculty participated in a series of training workshops that focused on building long-lasting relationships with community leaders, on getting to know their students, their language, their culture and on the historical aspects of the communities they come from. The purpose of these workshops was to prepare CESL faculty implement strategies that are culturally relevant, responsive and sensitive to the realities of their students. Additionally, CESL faculty received incentives such as stipends and scholarly recognition. The community leaders’ involvement was recognized with a certificate and a stipend. Students had opportunities to access undergraduate participatory research and collaborate with peers, faculty and community leaders on issues that were relevant and could have an impact on the communities they come from.

The CESL initiative addresses core priorities identified in this HSI’s strategic plan. With students’ success at its center, the present HSI aims to provide support for its students to succeed, a vast amount of educational opportunities, research that impacts its community on critical issues such as bilingualism, health and education while engaging in a long lasting relational process with community members that is sustainable. The CESL organizers and leaders fostered a sustainable community engagement that enriched scholarship that is a “planned, novel, deliberate, specific,” (Owens & Valesky, 2015, p. 224) innovative and transformational, grassroots idea. Its purpose was to facilitate the process that would shape the HSI’s identity. Guajardo and Guajardo (2013) introduced the power of *plática* and its role in building relationships and community to guide organizations, lead public information campaigns, shape

school curriculum, and even push higher education institutions to behave more humanely. Through the power of *plática*, the CESL team created relationships and partnerships with many public-school districts, community organizations, along with community leaders and policy makers that have become external driving forces for the transformation of the HSI and shaping its new identity. This emerging organizational model is based on a theory of change in action that is congruent with the cultural imperatives of the region as the team employs a relational approach to organization and institution building (Guajardo, Guajardo, Janson & Militello, 2016). This level of community engagement is instrumental in the implementation of Community-Engaged Scholarship and Learning (CESL) framework that promises to enrich the experience of college students, most of which come from the communities the present HSI serves. This framework merged community engagement with undergraduate research where faculty from across disciplines can offer CESL courses to college students and expose them to critical societal issues of the region making learning more meaningful and relevant.

While students can choose a CESL research project from a variety of options, all CESL experiences will root students' interest in learning, expose them to faculty mentors early on, and build critical professional development skills essential for short-term and long-term success. By bringing students together around a shared interest, CESL builds peer-to-peer learning communities guided by close mentoring by faculty early in the academic career, fostering student success. Engaging students in small groups early in their university experience with an inspiring and culturally responsive professor, who can serve as a mentor through their college career and can assist them in leveraging university and external resources (learning support, academic and career development support, on-campus employment, and internships, etc.), is critical for their success. This is particularly true for first-generation college students (Schreiner, Louis & Nelson,

2012). In addition, community engagement and experiential learning for students can facilitate culturally relevant opportunities (Ladson-Billings, 2014) to examine societal issues and explore one's civic identity through community-centered learning setting and engaged in Community Learning Exchange (Guajardo, Guajardo, Janson, & Militello, 2016) where there are reciprocal benefits for students, community, faculty, and campus partners. Early involvement of students in CESL, through reflective writing and guided discussions, can make students aware of the relationship of their education to their communities' and families' cultural wealth (Cárdenas & Cárdenas, 1977). Through well-designed, progressively in-depth CESL experiences, students' education could take on entirely new meaning, they could find their passion and career which would not only lead to timely graduation, but to the transformation of their communities in culturally respectful ways.

Early involvement of students (i.e. in their first year) in these very relevant and experiential learning experiences can make students aware of the relationship of their education to their communities' and families' cultural wealth (Yosso, 2005). CESL establishes, develops/augments, and implements high-impact community engaged scholarship and educational practices for students and faculty. High-Impact Practices include teaching and learning practices that have been widely tested and have been shown to be beneficial for students from many backgrounds (Association of American Colleges and Universities, 2007). Most high-impact practices involve experiential learning; learning that supports students in applying their knowledge to real-world problems or situations where the instructor directs or facilitates learning. These types of learning practices have been shown to be especially positive for enhancing student learning and development in underserved student populations (Linn, Palmer, Baranger, Gerard & Stone, 2015).

As part of this transformative approach, educational leaders at this HSI where this study took place established Community Engaged Scholarship & Learning Experiences (CESL) as a mechanism to facilitate early engagement in culturally-relevant opportunities that can anchor a student's college experience into a long-lasting affinity to the institution, its faculty and the student's own community. As a multidimensional relationship building experience (among student, faculty, institution, and community) the CESL framework can build informal learning communities and can contribute to a positive correlation with student academic competence in college (Reason, Terenzini, & Domingo, 2006). Especially among Hispanic students, relationships such as those fomented in the CESL experience will instill persistence and lasting confidence on the student, who through these relationships (with other students or their faculty mentor, for example) may better draw on these and other resources beyond the first year of college to persist and realize their dreams (Willcoxson, Cotter, & Joy, 2011).

While students can choose a CESL research topic from a variety of options, all CESL experiences will root students' interest in learning through culturally relevant pedagogy, peer-to-peer learning, close faculty mentorship, and community engagement. These experiences will build critical professional development skills essential for short-term and long-term success. Early involvement of students (i.e. in their first year) in these very relevant and experiential learning experiences can make students aware of the relationship of their education to their communities' and families' cultural wealth (Yosso, 2005). The high impact practice of experiential learning is beneficial for students from many backgrounds (Association of American Colleges and Universities, 2007), and especially positive for enhancing student learning and development in underserved student populations (Linn, Palmer, Baranger, Gerard, & Stone, 2015). As such, CESL can add an entirely new meaning and motivation for learning, fomenting

passion and drive that would not only lead to timely graduation, but to the transformation of their communities in culturally respectful ways.

Evidence suggests that learning communities fostered through first-year student engagement experiences show positive impacts on student persistence and success that help students thrive throughout their college experience and life after college (Schreiner, Louis, & Nelson, 2012). Early engagement of undergraduates in culturally-relevant experiential learning in small groups can provide the impetus and tools for students to empower themselves and discover their passion (Ladson-Billings, 2014). CESL faculty taught students using pedagogy that was culturally respectful and would help them find the reason for learning and a meaningful major or career goal. This culturally responsive teaching not only demonstrates acceptance and respect of cultural diversity among students and faculty, but also empowers and validates each student's cultural capital (Ladson-Billings, 2014; Pappamihel & Moreno, 2011; Yosso, 2005). This empowerment builds self-esteem and prepares the student beyond the first year of college. Undergraduate research experiences typically benefit a small group of students that can work with a mentor one-on-one, but Course-based Undergraduate Research Experiences (CURE) like CESL, offer the opportunity to bring the benefits of such research experiences to the broader student population (Linn, Palmer, Baranger, Gerard, & Stone, 2015; Brownell & Kloser, 2015).

The CESL framework was based on an assets-based model, which nurtures students' knowledge and skills, while managing "deficiencies" (Valencia, 2010; Schreiner, Louis, & Nelson, 2012). Focusing on students' strengths and talents (such as personal experiences, language, community membership, etc.) CESL created opportunities that may lead to higher levels of engagement in the learning process. CESL classes adopted five strengths-oriented practices that educators could have implemented in the classroom: (1) create a sense of

community by identifying and emphasizing students' strengths, (2) connect classroom lessons to students' interests and capitalize on their strengths, (3) create challenging and yet meaningful assignments with clear expectations, (4) make certain that students understand that they are in control of their learning and are aware of the strategies for successful learning, and (5) provide frequent constructive feedback in a timely and respectful manner that builds healthy teacher-student relationships (Schreiner, Louis, & Nelson, 2012). This strengths-based approach provided a conceptual framework that helped students thrive during their transitions while in college and fostered supportive relationships that addressed the goals of the individual as well as the HSI's core values.

Null Hypotheses

The research questions which guided the researcher in this study were further developed into null hypotheses constructs. The first research question yielded one null hypothesis as follows:

Null hypothesis 1. Sense of Belonging (Y) is not a function of social integration, academic integration, perceived campus climate, CESL enrollment status, service learning enrollment status, language proficiency, gender, and immigration status ($X_1, X_2, X_3, X_4, X_5, X_6, X_7$ and X_8).

Furthermore, the second research question yielded three additional null hypotheses:

Null hypothesis 2. There is no difference among mean vectors for Groups 0, 1, 2, 3, 4 and 5.

Null hypothesis 3. There is no difference among mean vectors for Trials Pre- and Post-Test.

Null hypothesis 4. There is no interaction among Groups and Trials.

Data Collection Procedures

Following approval by the Institutional Review Board at HSI where the proposed study took place, the researcher began to request assistance from the key administrative faculty and

staff, previously identified in the Instrumentation and Data Sources section, to select classrooms with the characteristics described in the Population, Sample and Participants section. The researcher continued to work with the key administrative faculty and staff since the CESL initiative began and had access to faculty and their students. The researcher sought the approval of the faculty teaching the selected courses who were asked to provide class-time to administer the pre-test survey during the first three weeks of semester and the post-test survey during the last four weeks at the end of the semester. Faculty that opted to participate in this study, were asked if they wished to offer students extra-credit points for taking the survey. A hardcopy of the survey, see Appendix B, was distributed to students enrolled in the courses selected. An informed consent form that explained the purpose of the study to the students, their voluntary participation and confidentiality and that included the researcher's contact information was attached at the beginning of the survey, see Appendix D.

Data Analysis Procedures

To answer the two research questions, a quasi-experimental research design was utilized, and it involved two forms of analyses, Regression Analysis addressing question one and a Two Way Factorial Multivariate Analysis of Variance (MANOVA) addressing question two. The null hypotheses were tested with Multivariate F-distribution at a 0.05 level of significance. Exploratory and confirmatory analyses were performed side by side to test the null hypotheses as part of the research process (Tukey, 1977).

The quantitative method of analysis used to address research question one was regression analysis using Warner's (2013) guidelines. It intended to identify perceptual and behavioral characteristics that were related to and explained variances in college students' sense of belonging, especially Hispanic students at the HSI where the study was conducted. The

dependent/criterion variable was Sense of Belonging (Nuñez, 2009) and the independent/predictor variables were social and academic integration (French & Oakes, 2004), perceived campus climate (Hurtado & Carter, 1997), CESL enrollment status (treatment), service learning enrollment status, language proficiency, gender, and immigration status.

The quantitative method of analysis addressing research question two was a 3 (groups) x 2 (pre- and post-test) Factorial MANOVA using Warner's (2013) guidelines. It intended to measure the impact of a South Texas HSI's social responsibility implemented through the CESL framework and courses on the dependent variables, college students' sense of belonging and institutional integration, especially of Hispanic students. This design and methodology of analysis was selected because the study compared mean vectors that described college students' institutional affiliation (i.e. sense of belonging and institutional integration) between treatment groups of college students with pre- and post-test measures (Mills & Gay, 2016). The grouping variable was Enrollment Status (0: No CESL and No Service Learning, 1: CESL, 2: Service Learning).

This study consisted of N = 208 subjects where: 59% were female and 41% males; 4% have been 1 year at the HSI, 21% for 2 years, 37% for 3 years, 26% for 4 years and 12% for 5 years of more; 85% Hispanic/Latino, 6% Asian Pacific Islander, 5% were White, 1% Black, and 3% from other ethnicities; 81% from the Sciences, 15% from Education and 4% were from the College of Medicine; 17% were First Generation immigrant students, 56% were Second Generation and 27% were Third Generation; and 28% were from the Control Group, 50% from the Service Learning Group, and 22% from the CESL Treatment Group.

According to Warner (2013), sums of squares and degrees of freedom for Factorial MANOVA are generally obtained from computer programs, in this case the General Linear Model with Multivariate and Repeated Measures option in SPSS version 24. SPSS was used for to check for possible violations to normal distributions, homogeneity of variance/covariance matrices and to calculate means. The statistical significance and power analysis were calculated and interpreted to reject or fail to reject the null hypotheses.

Limitations of the Study

The study had certain limitations. First, this was a cross-sectional study that was done at only one HSI. Therefore, the population sample is not representative of the student populations at other HSIs, and the results may not be generalized to student populations at other universities. Secondly, the study targeted students that are predominantly from the region of South Texas, which may not be a good representation of populations in other areas. Furthermore, other factors such as parental support and education, college readiness and GPA, which are generally studied, were not considered. Instead, the study focused on factors such as field of study, classification, gender, and immigration status, which can be easily obtained from the participants/subjects and used to desegregate student data. Also, there is no direct analysis used to establish a correlation to predict the performance of students. On the other hand, future studies, especially longitudinal ones, may be conducted to provide evidence that suggests that student performance, retention and graduation rates are to be impacted. Another limitation was the use of a survey as a data collection method and thus social, cultural and political biases in the responses should be considered.

CHAPTER IV

FINDINGS

This section presents analysis of the impact of behavioral and perceptual characteristics, the predictor variables, from a stratified random sample acquired as detailed in the Population section found in Chapter III, on students' Sense of Belonging. College students are the subjects of this quantitative study. The researcher is interested in the effects of the predictor variables on and the variation accounted for in the dependent/criterion variables. The population of interest is college students, particularly Hispanics that Hispanic-Serving Institutions (HSI) claim to serve. Exploratory and confirmatory analyses were performed side by side in the analysis of the data, thus, ensuring fidelity of the obtained results (Tukey, 1977).

Research Questions

The different methods of statistical analysis shown in this chapter helped the researcher answer the following two research questions:

RQ1. What types of perceptual and behavioral characteristics (e.g. social integration, academic integration, perceived campus climate, CESL enrollment status, service learning enrollment status, language proficiency, gender, and immigration status) are associated with sense of belonging for college students, especially Hispanic students at a HSI in South Texas?

RQ2. How do community-engaged scholarship and learning experiences encompassed in CESL courses (the treatment) impact college students' sense of belonging and academic and social integration, especially Hispanic students at a HSI in South Texas?

Treatment Fidelity

Community-Engaged Scholarship and Learning (CESL), as any new initiative, has endured resistance from well-established mainstream practices and policies. This resistance takes place at different levels from faculty, departmental leaders and even university leaders at the highest administrative positions. From the beginning, the CESL framework received extraordinary support from the leadership in the College of Sciences, which made it possible for the implementation of workshops for faculty professional development, to secure some college funding and receive departmental support. This training is described in detail in the Treatment section found in Chapter III. Faculty that completed this series of workshops are referred as the CESL faculty.

Including actual CESL course sections as part of the teaching load of the CESL faculty turned out to be a challenge. Although several CESL faculty completed student and community centered syllabi for CESL courses, teaching loads with traditional, lecture base courses had already been assigned to them. These syllabi were designed and created as a team effort by faculty and community partners. The CESL framework places students, their parents and the community at the center of the learning process. Fortunately, several CESL faculty felt confident that they would be able to implement CESL strategies into some of their existing courses. Some of these strategies include: experiential learning, culturally relevant approaches and research that is relevant to issues identified by the community partners. These courses that the CESL faculty identified are referred as the CESL courses. In particular, the CESL faculty

consists of two faculty teaching three junior/senior level courses in Biology and one teaching a junior/senior level course in Mathematics Education. These four CESL courses are where the CESL treatment was implemented.

CESL support from faculty and department leaders and funding has been secured, thus ensuring adequate treatment fidelity. CESL faculty and their respective department leaders demonstrated high levels of support and commitment to the implementation of the innovative strategies that the CESL framework advocates. CESL faculty looked into their assigned teaching courses and were able to identify at least one course where they would be able to implement CESL strategies. They looked at curriculum flexibility and expertise, alignment to course learning objectives, class size and their own readiness to implement CESL strategies to identify their assigned courses as the CESL courses. External funding awarded by the National Science Foundation to the College of Science has reinvigorated the commitment of all CESL stakeholders from the community to the faculty and leaders in charge of handling administrative policies and practices. CESL faculty implementing the treatment continue to receive support from their department leaders and the CESL framework leadership team.

Descriptive Statistics

A total of nine course sections were selected according to a set criteria. Four courses were identified as CESL courses given that they were being taught by CESL faculty who said will be implementing strategies learned from the CESL professional development. Students enrolled in these courses were assigned to group 2, the treatment group. For the Service Learning and Control groups, a total of five courses in Biology and Mathematics Education that were similar to the CESL courses were identified. Students enrolled in these courses were assigned to the Control or Service Learning groups. Their assignment depended on an item in the survey related

to enrollment in another course with two checkboxes. One checkbox asked them if they were “required to do community service hours” and the other if they were “required to work with a community organization.” Students who checked either checkbox were assigned to group 1, the Service Learning group, and the rest to group 0, the control group.

This study consisted of N = 208 subjects where: 59% were female and 41% males; 4% have been 1 year at the HSI, 21% for 2 years, 37% for 3 years, 26% for 4 years and 12% for 5 years of more; 85% Hispanic/Latino, 6% Asian Pacific Islander, 5% were White, 1% Black, and 3% from other ethnicities; 81% from the Sciences, 15% from Education and 4% were from the College of Medicine; 17% were First Generation immigrant students, 56% were Second Generation and 27% were Third Generation; and 28% were from the Control Group, 50% from the Service Learning Group, and 22% from the CESL Treatment Group.

Principal Component Analysis

Principal component analysis was performed on 38 items derived from the theoretical basis of Sense of Belonging by Hurtado and Carter (1997) and Institutional Integration by Tinto (1993). These items resembled seven variables or subscales: Scale I – Peer-Group Interactions, Scale II – Interactions with Faculty, Scale III – Faculty Concern for Student Development and Teaching, Scale IV – Academic and Intellectual Development, Scale V – Institutional and Goal Commitments, Scale VI – Sense of Belonging, and VII – Perceived Campus Climate. Results of this exploratory factor analysis procedure are determined by and dependent on the selected variables and the sample of this particular study (Warner, 2013). But, these results will contribute the body of knowledge extant on these same variables in studies conducted by other researchers and test their theories.

The rotation method selected was Varimax with Kaiser Normalization using IBM SPSS Statistics Version 25 software. The rest of the Dimension Reduction statistical control options in SPSS were left in the default setting. The goal is to reduce the number of factor loadings, which will in turn make patterns of loadings easier to interpret (Warner, 2013). The initial output tables of the Rotated Component Matrix showed three items cross-loading with correlations greater than or equal to 0.40 on multiple components. This means that the items did not load high in only one component and low (less than 0.40) on all other components and did not acquire unidimensionality. Two of the Components only correlated with two items. By strategically removing these seven items, the Rotated Component Matrix table was reduced from 38 items loading on nine components to 31 items loading on six components. Each of these 31 items loaded high on one of the components and low on the rest, which resulted in a simple factor structure. Items 23, 28, 31, 32, 33, 34 and 35 loaded on component one (Scale VI - Sense of Belonging), items 1, 2, 3, 4, 5, 6 and 7 on component two (Scale I – Peer-Group Interactions), items 13, 14, 15, 16, and 17 on component three (Scale III - Faculty Concern for Student Development and Teaching), items 18, 19, 20, 21 and 24 on component four (Scale IV – Academic and Intellectual Development), items 8, 9, 10 and 11 on component five (Scale II – Interactions with Faculty) and items 36, 37 and 38 on component six (Scale VII - Perceived Campus Climate).

Through the dimension reduction process of factor analysis, items 25, 26, 27, 29 and 30 were deleted and resulted in the elimination of Scale V – Institutional and Goal Commitments. In other words, Scale V did not measure what it purported to measure with this data sample. A snapshot of the Rotated Component Matrix (still with unnamed factors) in the second step of the

procedure highlighting the original six items (25, 26, 27, 28, 29, and 30) that form Scale V is shown in Appendix E.

After completing the factor analysis procedure, the final output table and scree plot revealed that 68.5% of the total variance of data obtained on these variables was accounted for. Six rotated, orthogonal components with all 31 items loading on only one of the components, and thus yielding unidimensionality or simple structure (Warner, 2013). This will provide a more accurate understanding and interpretation of the multiple items that describe the same underlying characteristic not directly observed or measured (Vogt, 1999). In other words, the set of 31 observed items can be explained by six latent variables/phenomena. Moreover, these six latent variables can be described by Scales I, II, III, IV, VI, and VII providing support for the theoretical basis applied in the construction of six out of the seven subscales selected for this study (Hurtado & Carter, 1997; French & Oakes, 2004). Table 4 presents the final Rotated Component Matrix with the six named factors.

Items that acquired unidimensionality with positive correlations, as seen in Table 2, in each of the six Scales (I, II, III, IV, VI, and VII), now named, were summed to create a total score. This means that the items added together measured the same underlying construct and in the same direction. This finding is also supported by the theoretical constructs identified by Hurtado and Carter (1997) and French and Oakes (2004). Moreover, Warner (2013) asserts that Cronbach's alpha can be used to further explore if these items do in fact measure the same underlying construct. Cronbach's alpha is an index of common-factor concentration that describes the internal consistency reliability for the total score. It "estimates, and is a lower bound to, the proportion of test variance attributable to common factors among items" (Cronbach, 1951, p. 331). SPSS v25 and the present sample data were used to calculate

Table 2

Factor Loadings for Exploratory Factor Analysis With Varimax Rotation of Sense of Belonging, Institution Integration and Campus Racial Climate Scales

Scale	Sense of Belonging	Peer-Group Interactions	Faculty Concern	Academic and Intellectual	Interactions with Faculty	Perceived Campus Climate
1	.10	.84	-.02	.10	.13	.02
2	.21	.85	-.01	.14	.10	-.04
3	.11	.85	.17	.14	.19	.01
4	.12	.78	.14	.19	.17	.04
5	.33	.58	-.08	.26	.13	-.10
6	.30	.75	.13	-.03	.08	-.07
7	.38	.51	.33	.03	-.02	-.19
8	.16	.13	.21	.18	.83	.00
9	.14	.11	.25	.19	.84	.02
10	.14	.21	.26	.22	.73	-.02
11	.11	.25	.07	.06	.48	.15
13	.12	.12	.74	.08	.25	.04
14	.25	-.03	.75	.10	.21	-.01
15	.16	.10	.78	.11	.07	-.01
16	.23	.25	.72	.16	.27	-.07
17	.22	-.02	.69	.30	.10	-.21
18	.22	.16	.18	.83	.14	.01
19	.18	.24	.25	.77	.19	-.03
20	.36	.12	.25	.75	.07	-.06
21	.28	.00	.22	.50	.26	-.10
23	.59	.19	.09	.16	.14	.03
24	.00	.31	-.13	.54	.29	-.10
28	.52	.04	.31	.05	-.01	-.03
31	.81	.29	.19	.05	.18	-.02
32	.84	.28	.11	.13	.21	-.02
33	.83	.30	.11	.11	.23	-.07
34	.79	.18	.21	.34	.04	-.03
35	.69	.05	.27	.35	.01	-.04
36	-.08	-.12	-.14	.08	.03	.86
37	-.03	.06	-.04	-.15	.00	.85
38	.00	-.05	.02	-.07	.06	.80

Note. Factor Loadings > .40 are in boldface. Adapted from Hurtado and Carter (1997) and French and Oaks (2004).

Cronbach's alpha estimates to assess the reliability for multiple-item Scales I, II, III, IV and VI.

Item-Total Statistics table outputs showed that, in some cases, removing an item could have improved the reliability of the scale. None of these items were removed since all original

Cronbach's Alpha Reliability Statistics measures were moderate to high: 7 item Scale I–Peer-Group Interactions was .90, 4 item Scale II-Interactions with Faculty was .78, 5 item Scale III-Faculty Concern for Student Development and Teaching was .87, 5 item Scale IV-Academic and Intellectual Development was .83, 7 item Scale VI-Sense of Belonging was .91. As importantly, the decision of keeping all items in each scale was taken because scales have been supported in prior studies as theoretical constructs (Hurtado & Carter, 1997; French & Oakes, 2004).

Now that scales demonstrated internal consistency, the total scores were then divided by the number of items in each scale, respectively. Since all the items use a 5-point Likert scale (5-Strongly Agree, 4-Somewhat Agree, 3-Not sure, 2-Somewhat Disagree, and 1-Strongly Disagree), this average of scores also ranged from 1 to 5 for all scales. Therefore, the average scores are in common metrics and common calibration and are used in the following inferential statistical analysis sections that address the two research questions in this study.

Research Question 1: Regression Analysis

Now that the descriptive statistics of the population and construct validity of the scales were obtained and analyzed in the prior sections, this section addresses Research Question 1 (RQ1). To answer RQ1 the researcher formed one null hypothesis as follows:

H_{0,1}. Sense of Belonging (Y) is not a function of social integration, academic integration, perceived campus climate, CESL enrollment status, service learning enrollment status, language proficiency, gender, and immigration status ($X_1, X_2, X_3, X_4, X_5, X_6, X_7$ and X_8).

Multiple regression analysis is an appropriate method of analysis to answer RQ1. With results from a Multiple Regression analysis, a researcher may assess the predictability of a dependent variable/outcome (Y) by two or more predictor variables ($X_1, X_2, X_3, \dots X_n$) and how much variance is predicted by each X_i while statistically controlling the rest of the predictors (Warner,

2013). By accumulating the variance predicted/explained by each predictor variable, the total variance of the outcome variable (Y) may be calculated.

To respond to RQ1, the following variables are being considered: Scale I–Peer-Group Interactions, Scale II-Interactions with Faculty, Scale III-Faculty Concern for Student Development and Teaching, Scale IV-Academic and Intellectual Development, Scale VII-Perceived Campus Climate, CESL enrollment, Service Learning enrollment, English proficiency, Spanish proficiency, gender and immigration status. The coding for these variables is presented in Table 3.

Table 3

Operationalization and Coding for Outcome and Independent Variables

Outcome	Type	Coding			
Sense of Belonging	Ordinal	1 = Strongly Disagree			
		2 = Somewhat Disagree			
		3 = Not sure			
		4 = Somewhat Agree			
		5 = Strongly Agree			
Independent	Type	Coding	Independent	Type	Coding
Peer-Group Interactions	Ordinal	1 = Strongly Disagree	Perceived Campus Climate	Ordinal	1 = Strongly Disagree
		2 = Somewhat Disagree			2 = Somewhat Disagree
		3 = Not sure			3 = Not sure
		4 = Somewhat Agree			4 = Somewhat Agree
		5 = Strongly Agree			5 = Strongly Agree
Interactions with Faculty	Ordinal	1 = Strongly Disagree	CESL Enrollment	Nominal	0 = Not Enrolled
		2 = Somewhat Disagree			1 = Enrolled
		3 = Not sure			0 = Not Enrolled
		4 = Somewhat Agree			1 = Enrolled
		5 = Strongly Agree			1 = Low
Faculty Concern for Student Development and Teaching	Ordinal	1 = Strongly Disagree	English Proficiency	Ordinal	2 = Medium
		2 = Somewhat Disagree			3 = High
		3 = Not sure			1 = Low
		4 = Somewhat Agree			2 = Medium
		5 = Strongly Agree			3 = High
Academic and Intellectual Development	Ordinal	1 = Strongly Disagree	Gender	Nominal	1 = Male
		2 = Somewhat Disagree			2 = Female
		3 = Not sure			1 = First Generation
		4 = Somewhat Agree			2 = Second Generation
		5 = Strongly Agree			3 = Third Generation
			Immigration Status	Ordinal	
					2 = Second Generation
					3 = Third Generation

A bivariate correlation matrix was generated using SPSS to identify and test for significance whether these variables are correlated with the dependent variable (Scale VI-Sense of Belonging) at the .05 level of significance. Scale I–Peer-Group Interactions, Scale II-Interactions with Faculty, Scale III-Faculty Concern for Student Development and Teaching, Scale IV-Academic and Intellectual Development, and English proficiency were the only variables that significantly correlated with the dependent variable, Scale VI-Sense of Belonging, at $p < .05$ level of significance (also at $p < .01$). These five variables are used as the predictors to the criterion in the multiple regression analysis and lead to the refined null hypothesis as follows:

H_{0,1}. Sense of Belonging (Y) is not a function of Group Interactions, Interactions with Faculty, Faculty Concern for Students Development and Teaching, Academic and Intellectual Development and English Proficiency (X_1, X_2, X_3, X_4 and X_5).

Warner (2013) recommends that for multiple regression analysis with five predictor variables a sample size of at least 109 cases is needed to obtain adequate statistical power. The present study meets this recommendation with $N = 218$ subjects, which will compensate for violations to normality as noted earlier. Table 4 presents the correlation matrix (with abbreviated names for formatting purposes). Correlations among predictor variables are not in excess of .9 (i.e. not highly correlated). This eliminates any issues of multicollinearity during the regression analysis (Warner, 2013).

Histograms of scores and scatter plots for continuous, dependent and predictor variables, found in Appendix F, suggest that violations to the assumptions for multiple regression analysis are present. Conducting nonlinear transformations (e.g. log10 in SPSS) yielded approximate normal distributions for all six variables. The researcher decided to continue the analysis

without any nonlinear transformations to keep results interpretable. Moreover, moderate departures from the assumptions for Multiple Regression Analysis have little effect on the validity of null hypothesis tests and power analysis because *F* tests are “robust” (Scheffé, 1959, Chapter 10). Hence, multiple regression analysis was performed using the original data.

Table 4

Summary of Intercorrelation Matrix Table for Sense of Belonging and Independent Variables Under Consideration as Predictors

	Sense of Belonging	Peer Interactions	Faculty Concern	Academic Development	Faculty Interactions	English Proficiency
Sense of Belonging	—					
Peer Interactions	.55 **	—				
Faculty Concern	.50 **	.32 **	—			
Academic Development	.55 **	.45 **	.48 **	—		
Faculty Interactions	.42 **	.43 **	.50 **	.50 **	—	
English Proficiency	-.20 **	-.09	-.11	-.10	-.03	—

p* < .05, *p* < .01

SPSS offers several types of regression analysis (e.g. stepwise). This study uses an All Possible Procedure with Backward Elimination, which is a generalization of the standard or simultaneous multiple regression procedure described by Warner (2013). Standard or simultaneous multiple regression procedure is generally recommended to statistically control for all other predictor variables, while assessing each individual predictor. This method of regression analysis allows researchers to avoid inflated risks of committing a Type I error by (i.e. avoid the early selection of predictor variables that are highly correlated to the criterion). It also yields a more conservative adjusted effect size that controls for any linear associations among all predictor variables and a unique predictive contribution of individual predictor variables. Figure 4 shows a graphic representation of the unique contribution on the dependent variable (Y) of each predictor, say X_1 , while controlling for all other predictors, say X_2 and X_3 .

The All Possible Procedure with Backward Elimination not only allows researchers to assess the unique predictive contribution of individual predictors, but also the predictive contribution for grouped predictors such as X_1X_2 , X_2X_3 or $X_1X_2X_3$ in the case of having four predictor variables. Tables 5, 6, 7 and 8 show each step of the All Possible Procedure with Backward Elimination with the unique and grouped predictive contributions of predictor variables rounded to the nearest one-hundredths.

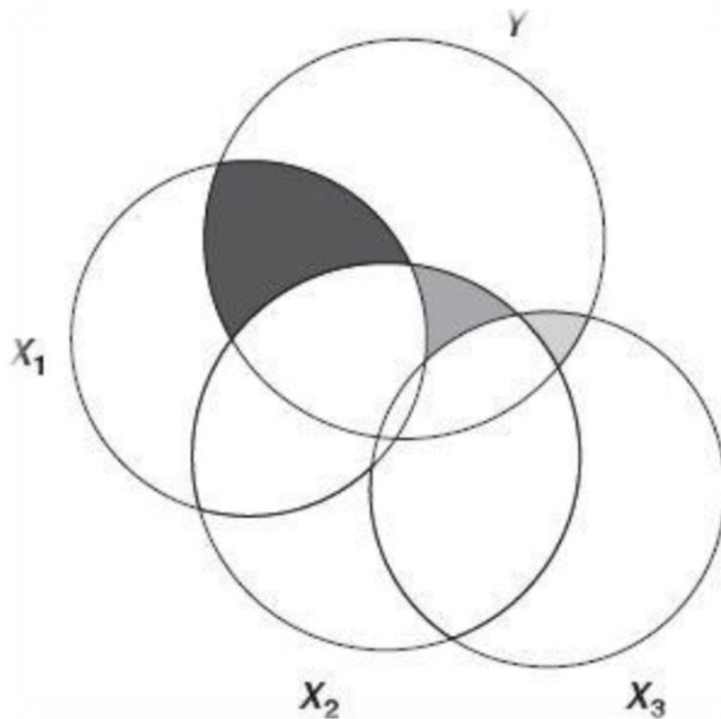


Figure 4. Partition of Variance Among Three Predictor Variables (X_1 , X_2 , and X_3). This image is a copy taken Figure 14.2a from Warner (2013).

The overall Multiple Regression Analysis, including all five predictors, yielded significant findings, $R = .70$, $R^2 = .49$, adjusted $R^2 = .48$, $F(5,195) = 38.15$, $p < .001$. This model, presented in Table 9, reveals that 48% of the variance in Sense of Belonging, the dependent variable, is predominantly explained by four of the five predictor variables: Peer Group Interactions, Faculty Concern for Student Development and Teaching, Academic and Intellectual Development,

Interactions with Faculty, and English Proficiency. Moreover, standardized/beta coefficients indicate the significant contribution of each predictor variable's impact on Sense of Belonging.

Table 5

Comparison Between the Full Model and One Independent Variable Removed Using All Possible Procedures

Predictor Variable(s)	Predictor Variable(s) Removed	R ² Full Model	R ²	Unique Variance
X ₁ , X ₂ , X ₃ , X ₄	X ₅	.49	.48	.02
X ₁ , X ₂ , X ₃ , X ₅	X ₄	.49	.49	.01
X ₁ , X ₂ , X ₄ , X ₅	X ₃	.49	.44	.05
X ₁ , X ₃ , X ₄ , X ₅	X ₂	.49	.44	.05
X ₂ , X ₃ , X ₄ , X ₅	X ₁	.49	.42	.08

Note. The following X_i assignments are used:

- X₁~Peer-Group Interactions,
- X₂~Faculty Concern for Student Development and Teaching,
- X₃~Academic and Intellectual Development,
- X₄~Interactions with Faculty and
- X₅~English proficiency.

Table 6

Comparison Between the Full Model and Two Independent Variables Removed Using All Possible Procedures

Predictor Variable(s)	Predictor Variable(s) Removed	R ² Full Model	R ²	Difference
X ₁ , X ₂ , X ₃	X ₄ , X ₅	.49	.47	.02
X ₁ , X ₂ , X ₄	X ₃ , X ₅	.49	.43	.06
X ₁ , X ₃ , X ₄	X ₂ , X ₅	.49	.43	.07
X ₂ , X ₃ , X ₄	X ₁ , X ₅	.49	.39	.10
X ₁ , X ₂ , X ₅	X ₃ , X ₄	.49	.43	.06
X ₁ , X ₃ , X ₅	X ₂ , X ₄	.49	.44	.06
X ₂ , X ₃ , X ₅	X ₁ , X ₄	.49	.41	.09
X ₁ , X ₄ , X ₅	X ₂ , X ₃	.49	.35	.14
X ₂ , X ₄ , X ₅	X ₁ , X ₃	.49	.31	.18
X ₃ , X ₄ , X ₅	X ₁ , X ₂	.49	.37	.13

Note. The following X_i assignments are used:

- X₁~Peer-Group Interactions,
- X₂~Faculty Concern for Student Development and Teaching,
- X₃~Academic and Intellectual Development,
- X₄~Interactions with Faculty and
- X₅~English proficiency.

Table 7

*Comparison Between the Full Model and Three Independent Variables Removed
Using All Possible Procedures*

Predictor Variable(s)	Predictor Variable(s) Removed	R ² Full Model	R ²	Difference
X ₁ , X ₃	X ₂ , X ₄ , X ₅	.49	.42	.08
X ₂ , X ₃	X ₁ , X ₄ , X ₅	.49	.38	.12
X ₁ , X ₅	X ₂ , X ₃ , X ₄	.49	.31	.18
X ₂ , X ₅	X ₁ , X ₃ , X ₄	.49	.28	.22
X ₁ , X ₄	X ₂ , X ₃ , X ₅	.49	.34	.15
X ₂ , X ₄	X ₁ , X ₃ , X ₅	.49	.29	.20
X ₁ , X ₂	X ₃ , X ₄ , X ₅	.49	.43	.07
X ₃ , X ₅	X ₁ , X ₂ , X ₄	.49	.34	.15
X ₄ , X ₅	X ₁ , X ₂ , X ₃	.49	.20	.30
X ₃ , X ₄	X ₁ , X ₂ , X ₅	.49	.33	.16

Note. The following X_i assignments are used:

- X₁~Peer-Group Interactions,
- X₂~Faculty Concern for Student Development and Teaching,
- X₃~Academic and Intellectual Development,
- X₄~Interactions with Faculty and
- X₅~English proficiency.

Table 8

*Comparison Between the Full Model and Four Independent Variables Removed
Using All Possible Procedures*

Predictor Variable(s)	Predictor Variable(s) Removed	R ² Full Model	R ²	Difference
X ₅	X ₁ , X ₂ , X ₃ , X ₄	.49	.04	.45
X ₄	X ₁ , X ₂ , X ₃ , X ₅	.49	.17	.32
X ₃	X ₁ , X ₂ , X ₄ , X ₅	.49	.30	.19
X ₂	X ₁ , X ₃ , X ₄ , X ₅	.49	.25	.24
X ₁	X ₂ , X ₃ , X ₄ , X ₅	.49	.30	.19

Note. The following X_i assignments are used:

- X₁~Scale I~Peer-Group Interactions,
- X₂~Scale III~Faculty Concern for Student Development and Teaching,
- X₃~Scale IV~Academic and Intellectual Development,
- X₄~Scale II~Interactions with Faculty and
- X₅~English proficiency.

For every one standard deviation of movement on a predictor variable there is an increase, if the $\beta > 0$, or a decrease, if $\beta < 0$, of β standard deviations in Sense of Belonging. Table 10 provides

the descriptive statistics for the dependent variable and the five predictors. The Full Model equation to predict standard scores of Y from standardized or z scores on the predictors is as follows:

$$z'_Y = \beta_1 z_{X_1} + \beta_2 z_{X_2} + \beta_3 z_{X_3} + \beta_4 z_{X_4} + \beta_5 z_{X_5}.$$

General Linear Model analysis in SPSS estimated and observed power of 1.0 (N = 201, adjusted $R^2 = .48$, $p < .05$), which indicates a strong power to detect the overall model fit and thus, a Type I error is unlikely.

Table 9

Summary of Multiple Linear Regression Analysis for Predictors of Sense of Belonging

R	R²	R²_{adjusted}	df	F
.70	.49	.48	5,195	38.15***
		Predictor/Independent (X_i)	Standardized/beta coefficient (β_i)	t
		Peer Group Interactions	.31	5.18***
		Faculty Concern for Student Development and Teaching	.27	4.42***
		Academic and Intellectual Development	.29	4.47***
		Interactions with Faculty	-.01	-.08
		English Proficiency	-.12	-2.25*

* $p < .05$, ** $p < .01$, *** $p < .001$

Note. The following X_i assignments are used:

- X₁~Peer-Group Interactions,
- X₂~Faculty Concern for Student Development and Teaching,
- X₃~Academic and Intellectual Development,
- X₄~Interactions with Faculty and
- X₅~English proficiency.

Table 10

Descriptive Statistics for Dependent and Predictor Variables

Variable	N	<i>M</i>	<i>SE_M</i>	<i>SD</i>	95% CI	
					<i>LL</i>	<i>UL</i>
Sense of Belonging (DV)	201	3.69	.07	.98	3.55	3.83
Peer Group Interactions	201	3.95	.06	.86	3.83	4.07
Faculty Concern for Student Development and Teaching	201	4.03	.06	.80	3.92	4.14
Academic and Intellectual Development	201	4.00	.06	.80	3.89	4.12
Interactions with Faculty	201	3.78	.06	.85	3.66	3.90
English Proficiency	201	2.94	.02	.26	2.90	2.98

Note. CI = confidence interval; LL = lower limit, UL = upper limit

Research Question 2: MANOVA

This section addresses Research Question 2 (RQ2). To answer RQ2 the researcher formed an additional three null hypotheses as follows:

H_{0,2}. There is no difference among mean vectors for Groups 0, 1, and 2.

H_{0,3}. There is no difference among mean vectors for Trials Pre- and Post-Test.

H_{0,4}. There is no interaction among Groups and Trials.

Multivariate Analysis of Variance (MANOVA) is an appropriate method of analysis to answer RQ2. In this case, two dependent variables were analyzed, Sense of Belonging and Institutional Integration. Survey items 23, 28, 31, 32, 33, 34, and 35 were summed up to get a total score measure for Sense of Belonging for data collected during pre- and post-test measures. Survey items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 24 were summed up to get a total score measure for Institutional Integration for data collected during pre- and post-test measures. Pre-test measures were subtracted from post-test measures to calculate difference scores for Sense of Belonging and Institutional Integration. A bivariate correlation

analysis conducted in SPSS yielded a statistically significant correlation coefficient of .46 at the .05 and .01 level of significance. This means that the 21% of the variance of both difference scores are overlapping. This suggests that the total scores for Sense of Belonging and Institutional Integration are in fact measuring two distinct phenomena, although not mutually exclusive. Statistical Analysis of Variance will be conducted on both dependent variables.

Histograms showed that the difference score distributions of Sense of Belonging and Institutional Integration approximated normal distributions, see Appendix G. Moreover, assumptions for Sphericity did not apply in this type of analysis because there were less than three within subjects/repeated measures. In any case, moderate departures from the assumptions for MANOVA have little effect on the validity of null hypothesis tests and power analysis because *F* tests are “robust” (Scheffé, 1959, Chapter 10).

Recall that this study followed a quasi-experimental quantitative research design with one group receiving the treatment (CESL), a group enrolled in service learning courses and a control group (No CESL and No service learning) using pre- and post-test measures on Institutional Integration and on Sense of Belonging. Table 11 shows the graphical representation of the research design.

Table 11

Graphical Representation of Research Design

Group	Pre-Test	Treatment	Post-Test
0	\bar{O}_0	No CESL & No Service Learning	\bar{P}_0
1	\bar{O}_1	CESL	\bar{P}_1
2	\bar{O}_2	Service Learning	\bar{P}_2

Where vectors $\widetilde{O}_0, \widetilde{O}_1$ and \widetilde{O}_2 are the pre-test measures and $\widetilde{P}_0, \widetilde{P}_1$ and \widetilde{P}_2 are the post-test measures of the dependent variables, Sense of Belonging and Institutional Integration (social and academic). The quantitative method of analysis was a 3 (groups) x 2 (pre- and post-test) Factorial MANOVA. It intended to measure the impact of a South Texas HSI's social responsibility implemented through the CESL framework and courses on the dependent variables, college students' Sense of Belonging and Institutional Integration (social and academic). Table 12 and 13 present the summary table for the Statistical MANOVA for Sense of Belonging and Institutional Integration.

MANOVA (N = 165) results did not detect any difference ($p > .05$) among the three groups nor any interactions among groups and trials (pre and post) for Sense of Belonging and Institutional Integration. On the other hand, differences were detected between the pre- and post-test measures for Sense of Belonging and Institutional Integration ($p < .05$).

Table 12

Sense of Belonging Summary Table

Source of Variation	SS	df	MS	F	Partial Eta ²
BetSubjects	11939.89	164			
BetGroups	329.03	2	164.52	2.30	
error b	11610.86	162	71.67		
WithinSubjects	1896.52	165			
Trials	81.90	1	81.90	7.42 **	.04
GroupsXTrials	25.61	2	12.81	1.16	
"error" w	1789.01	162	11.04		
Total	13836.41	329			

* $p < .05$; ** $p < .01$

Table 13

Institution Integration Summary Table

Source of Variation	SS	df	MS	F	Partial Eta ²
BetSubjects	37746.47	164			
BetGroups	149.16	2	74.58	.32	
error b	37597.31	162	232.08		
WithinSubjects	21076.03	165			
Trials	12876.63	1	12876.63	257.37 **	.61
GroupsXTrials	94.20	2	47.01	.94	
"error" w	8105.20	162	50.03		
Total	58822.50	329			

*p < .05; **p < .01

CHAPTER V

CONCLUSIONS AND DISCUSSION

This chapter summarizes the statistical analysis results and their interpretations addressing the two research questions of this study. Models and constructs presented as theoretical frameworks for this study guided the discussions and conclusions of the findings presented here. Specifically, the researcher revisited the theory, survey items of the constructs and statistical analysis measures to provide implications to practice in educational leadership and to the theoretical body of knowledge. Finally, these discussions and conclusions are followed by limitations of this study and recommendations for future studies.

The Principal Research Questions

Research Question 1

Exploratory and confirmatory analyses were performed side by side in the analysis of the data to ensure the fidelity of the obtained results (Tukey, 1977). This process yielded a refined null hypothesis for Research Question 1 (RQ1), which was rejected by the data collected in this study. This suggests that Sense of Belonging (Y), as defined by Hurtado & Carter (1997), is a function of Peer Group Interactions (X_1), Faculty Concern for Students Development and Teaching (X_2), Academic and Intellectual Development (X_3), Interactions with Faculty (X_4), as defined by French and Oakes (2004), and of self-identified (1=low proficiency, 2=medium proficiency and 3=high proficiency) English Proficiency (X_5).

The overall Multiple Linear Regression Analysis, including all five predictors, yielded significant findings, $R = .70$, $R^2 = .49$, adjusted $R^2 = .48$, $F(5,195) = 38.15$, $p < .001$. The Full Model, revealed that 48% of the variance in Sense of Belonging was explained by four of the five predictor variables: Peer Group Interactions, Faculty Concern for Student Development and Teaching, Academic and Intellectual Development, and English Proficiency. Moreover, standardized/beta coefficients (indicating the significant contributions of each predictor variable's impact on the variance in Sense of Belonging), Backward Elimination and All Possible Procedures (indicating unique and overlapping variances accounted for in Sense of Belonging) and the items in each of the scales support the derivation of the following conclusions and interpretations of the results.

Peer-Group Interactions (X_1) and Students' perceived Academic and Intellectual Development (X_3) were the two predictors that combined had one of the strongest influences on Sense of Belonging, see Table 7, p. 82. When both of these variables were introduced to the linear model, 42% of the variance in student Sense of Belonging was accounted for. Peer-Group Interactions (X_1) alone in a linear model for student Sense of Belonging explained 30% of the variance, see Table 8, p. 82. Feelings of community among students were also found to be connected to peer interaction in Allendoerfer et al. (2012). This suggests that students who had positive experiences and felt supported by their peers tended to have a stronger Sense of Belonging. This is consistent with Hurtado and Carter's (1997) assertion that multiple peer interactions outside the classroom "can meet students' immediate needs and link students to the larger whole of campus life" (p. 338). Students' perceived Academic and Intellectual Development (X_3) alone in a linear model for student Sense of Belonging explained 30% of the variance, see Table 8, p. 82. Students who expressed positive academic experiences and

intellectual growth tended to have a stronger Sense of Belonging. It is important to indicate that student perceptions of Academic and Intellectual Development does not necessarily mean high achievement or high grades, see survey items 18, 19, 20, 21 and 24 (Appendix B, p. 113).

Faculty Concern for Student Development and Teaching (X_2) alone in a linear model for student Sense of Belonging explained 25% of the variance, see Table 8, p. 82. This suggests that when students who perceived that faculty are genuinely engaged in their interests, academic and non-academic, tended to develop a stronger Sense of Belonging. This is also evident when this variable was combined with Academic and Intellectual Development (X_3) and explained 38% of the variance in Sense of Belonging, see Table 7, p. 82. These findings are consistent with the result found by Nuñez (2009) and supports Hurtado and Carter's (1997) assertion that non-academic interests are also important social activities. Students who experience more activities that build stronger connections to students' ethnic and cultural background, especially for Latino students, tend to have stronger a Sense of Belonging.

English Proficiency is the only statistically significant predictor that had a negative effect on Sense of Belonging, see Table 9, p. 83. Although English Proficiency alone in a model for Sense of Belonging explained only 4% of the variance, 50% of this variance is unique, see Table 5, p. 81. Students who were more immersed in the English language tended to have less Sense of Belonging. This supports Hurtado and Carter (1997) who suggested that minority students can be more affiliated to the institution without acculturation. They also suggested that "... peer groups can form in a stance against conformity" (p. 329), which can also explain why Peer Group Interactions was found to have the strongest contribution impacting Sense of Belonging, see Table 9, p. 83.

Research Question 2

Although no differences ($p > .05$) were detected by the Multivariate Analysis of Variance among groups, differences between pre- and post-test measures were detected ($p < .05$). Difference scores for Sense of Belonging and Institutional Integration were found to be approximately normally distributed. These findings suggest that the total score scales of Sense of Belonging and Institutional Integration do in fact detect changes in students' behavioral and perceptual experiences over time/trials.

Implications for Theory

This study used Sense of Belonging as defined by Hurtado and Carter (1997) and used the expanded five-item scale of Sense of Belonging created by Nuñez (2009) resulting in a Cronbach's alpha reliability coefficient of 0.882. Factor Analysis in this study added two new items that strongly correlated with Sense of Belonging increasing the scale to seven items, see Table 2, p. 75. The new items, 23 and 28, asked students about their likeliness to attend a cultural event and the importance of graduating from their institution. Data in this study yielded a high Cronbach's Alpha reliability coefficient of 0.908. This seven-item scale can be used to measure the Sense of Belonging construct, particularly when studying Latino student populations.

As Hurtado and Carter (1997) indicated, Tinto's (1993) Institution Integration model has limitations as to its applicability to diverse student populations, particularly for Latino student populations. Tinto's model fails to acknowledge that social and academic interactions are distinct from integration, personal-emotional adjustment and feelings of attachment to the institution. By addressing Research Question 1 (RQ1), the present study revealed similar discrepancies with interactions, particularly among students and faculty. Although Interactions

with Faculty (X₄) alone in a model for Sense of Belonging explained 17% of the variance, see Table 8 p. 82, results from the multiple linear regression analysis indicated that Interactions with Faculty (X₄) is not a predictor to Sense of Belonging when included in the full model with all five predictor variables. This is not consistent with the negative influence on Latino students' Sense of Belonging detected in Johnson et al. (2007). This suggests that faculty-student social interactions tend to neither be relational nor play a key role as experiences that allow students to find their place in the campus community. Scales or constructs that look at this type of experiences may be more appropriate to study Sense of Belonging.

Implications for Practice

On Improving Sense of Belonging

The behavioral and perceptual characteristics of college students that significantly contributed to Sense of Belonging cover a wide range of implications for practices in higher education. As a construct that is intended for Latino students, Sense of Belonging can provide educational leaders a tool to empirically assess the quality of the programs, academic and non-academic (Hurtado & Carter, 1997; Johnson et al., 2007). This will lead to more equitable education practices and policies (Higher educational institutions, especially Hispanic-Serving Institutions (HSI), can capitalize on Latino students' personal responsibility. Latino students pursuing higher education often do so to provide for their families and give back to their communities (Nuñez 2009). By exercising Higher Education Social Responsibility, a community-engaged scholarship that redefines scholarship from the fundamentals of traditional disciplines to a relational process that emphasizes mutuality or reciprocity among scholars and community members (Giles, 2016), the HSI in this study can redirect its resources for research,

teaching and service to build programs, academic and non-academic, that target students' Sense of Belonging.

Since Faculty Interactions was not a significant predictor to Sense of Belonging, improving the quality of these social interactions must be addressed through faculty professional development. Faculty professional development in learning about the students' lives, particularly their stories and historical realities, may improve the quality of student-faculty social interactions. This type of dialogue between faculty and their students may have a positive influence on students' Sense of Belonging (De La Trinidad, Guajardo, Kranz, & Guajardo, 2017). Additionally, a great number of academic programs, services and offices exist where faculty and staff interact with students. Professional development on improving processes and the quality of social interactions with students in these institutional entities may allow staff to contribute to students' Sense of Belonging.

Faculty Concern for Student Development and Teaching, a significant predictor to Sense of Belonging, is normally addressed by faculty during in-class academic instruction. What is generally dismissed is the importance of faculty being concerned with "non-academic" issues that are of interest to students. Although it may be common for faculty to perceive "non-academic" student interests outside the scope of their instruction, the lack of involvement on their part will most likely hinder the students' Sense of Belonging. Faculty professional development that promote and encourage strategies and dialogue in classroom lessons that have cultural relevance to students and their community and bring about positive and constructive actions from students may improve students' Sense of Belonging (Allendoerfer et al. 2012). This suggests that academic programs need to realign curricula addressing these same relevant issues (De La Trinidad, Guajardo, Kranz, & Guajardo). Setting aside more time for faculty to

discuss with their students about academic and personal interests in and outside the classroom may allow Interactions with Faculty that have an impact on Sense of Belonging.

Institutions of higher education normally have hiring processes that look at research, teaching and service of the candidates. Often, research is what these processes and members of search committees give more weight to and teaching and service become secondary. To have faculty that will have a greater impact on student Sense of Belonging, administrators and search committees should ensure that recruiting and evaluation processes include strong pedagogical skills and concern for students. Hiring Latino faculty, in particular, play a major role at HSIs as they are more likely to incorporate mentorship when they interact with students (Contreras & Contreras, 2015). These criteria in the selection of new faculty and in the promotion of existing faculty will allow the institution to increase its commitment to student Sense of Belonging and rethink traditional measures of student success.

Assessing the Impact of the Treatment

Total score measures of Sense of Belonging and Institutional Integration can be used to assess the behavioral and perceptual experiences of college students (Hurtado & Carter, 1997; French & Oakes, 2004). These types of experiences may contribute to the learning process in and outside the classroom. The CESL framework encourages faculty to take the teaching and learning outside the classroom setting where students get exposure to community-engaged experiences. These experiences may not necessarily be considered as “academic” by faculty or administrators. For this reason, professional development and mentoring for faculty to engage in dialogue with community leaders and learn about the social, cultural and political issues that affect the communities may nurture Sense of Belonging among students (De La Trinidad, Guajardo, Kranz, & Guajardo, 2017). This may also impact faculty’s Sense of Belonging and

expand their research. Policy changes to research and faculty promotions that incorporate community-engaged scholarship will support CESL courses offered across departments in the university and promote the intellectual development of students.

Peer-Group Interactions that connect students to community organizations, such as social and religious organizations, need to be developed. CESL trained faculty learn to create healthy, trusting relationships with community organizations that allow students to develop a stronger commitment to their university and community. Interactions outside the classroom, particularly with social, community and religious organizations that have a strong connection to the university, allow students to feel more at “home” (Hurtado & Carter, 1997, p. 338). Partnerships with private industry organizations may benefit from interacting with social organizations during professional development workshops with faculty. It may be beneficial that some of these industry partners be alumni of this university, likely to be Latinos, who can serve as role models and mentors for students (Contreras & Contreras, 2015).

Limitations of the Study

A significant limitation of the study is the researcher’s role in the vision and implementation of the CESL framework that brought faculty and administrators from several departments and offices from across UTRGV together with community leaders of social organizations. As an educational leader and advocate of the CESL initiative, my interactions with CESL faculty may have influenced them and may have impacted student responses to items in the Sense of Belonging and Institution Integration Survey. The research design and methods did not include classroom observations or follow up meetings. This minimized the number of interactions between the researcher and the faculty in intentionally influencing student responses.

Additionally, my interactions with students that participated in this study were limited to data collection purposes during the pre- and post-surveys.

Another limitation is the lack of experimental control for teacher factor. As indicated in Chapter III, the CESL framework is transformative. One major aspect of this framework is to train faculty on how culturally relevant approaches improve teaching and learning. Our vision as CESL leaders is that CESL faculty will learn to use their students' lives and historical realities of their community at the center of the learning process. The goal of CESL leaders and advocates is that CESL faculty will transfer these new set of skills into other mainstream courses. The intersectionality of the leader and researcher played a major role on the decision to not include a level of experimental control for the teacher.

As described in Chapter IV, courses from which data was collected was limited to a low number of academic programs. This led to a sample of student participants whose majors were largely from the departments of Biology and Mathematics Education and a few from the School of Medicine. Also, students surveyed were mostly in their junior or senior years. This is an important limitation as the sample is not completely representative of the intended target population, Hispanic college students at this university. Furthermore, this study took place at only one HSI in South Texas and the results may not be generalizable to student populations at other institutions of higher education.

Another limitation is that the findings presented in this study are in relation to answering the research questions. For this reason, the data collected was not desegregated for further analysis that may further investigate some of the findings of this study. Finally, other factors such as parental support and education, college readiness and GPA, which are generally studied, were not considered. Also, there was no direct analysis used to establish a correlation or to

predict academic achievement of students. Another limitation is the use of a survey as a data collection method and thus social, cultural and political biases in student responses should be considered.

Recommendations for Future Studies

Based on the findings of this study and the need to continue assessing programs that aim to serve Hispanic students, particularly at HSIs, the researcher provides the following recommendations for future studies:

1. Studies that operationalize English language proficiency with more detail than the present study. Language proficiency was not emphasized in the present and in previous studies on Sense of Belonging. Its impact on Sense of Belonging should be further explored.
2. Studies that include students that are in their first and second years of college may provide more evidence on the applicability of the instrumentation utilized in this study.
3. Studies on college students that may help identify and describe which Peer Group Interactions positively influence student Sense of Belonging.
4. Studies that include classroom observations may provide a better evaluation on the fidelity of the treatment.
5. More research on the impact of proficiency in English, Spanish and other languages as well as cultural and identity formation.
6. Studies, especially longitudinal ones, may be conducted to provide evidence that suggests that student performance, retention and/or graduation rates are being impacted.
7. Studies that measure and identify skills that need to be developed among faculty to engage with students and the community in dialogue.

8. Studies on college students that may help identify student activities that contribute to students' Academic and Intellectual Development that positively impact student Sense of Belonging.
9. Studies on students that identify the type of academic activities that students find more intellectually appealing.
10. Studies that focus on other variables that would contribute to Sense of Belonging.

REFERENCES

- Allendoerfer, C., Wilson, D., Bates, R., Crawford, J., Jones, D., Floyd-Smith, T., ... Veilleux, N. (2012). Strategic pathways for success: The influence of outside community on academic engagement. *Journal of Engineering Education, 101*(3), 512-538.
- Allsup, C. (1982a). Land of the free, home of the brave. In *The American G.I. Forum: Origins and evolution* [monograph]. Austin: University of Texas, Center for Mexican American Studies.
- Allsup, C. (1982b). Welcome home. In *The American G.I. Forum: Origins and evolution* [monograph]. Austin: University of Texas, Center for Mexican American Studies.
- American Council on Education (1996). *Transnational dialogues: Conversations between U.S. college and university CEOs and their counterparts abroad*. Washington, DC: Publications TD.
- Arciniega, T. A. (2012). The crucial role of Hispanic-serving institutions in the education of Latino/a youth. *Journal of Latinos and Education, 11*(3), 150-156.
- Association of American Colleges and Universities. (2007). *College learning for the new global century: A report from the national leadership council of liberal education & America's promise*. Washington, D.C.: Association of American Colleges and Universities.
- Astin, A. W. (1984). *Equality Postponed: Continuing Barriers to Higher Education in the 1980s*. S. H. Adolphus (Ed.). New York, NY: College Entrance Examination Board.
- Barnes, M., & Schmitz, P. (2016). Community engagement matters (now more than ever). *Stanford Social Innovation Review*. Retrieved from https://ssir.org/articles/entry/community_engagement_matters_now_more_than_ever
- Berrian, A. H. (1982). Toward desegregation and enhancement. In R. Wilson (Ed.), *Race & Equity in Higher Education* (p. 138-153). Washington, DC: American Council on Education.
- Blanton, C. (2007). *The strange career of bilingual education in Texas, 1836-1981*. College Station, TX: A&M University Press.
- Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces, 69*(2), 479-504.

- Boyer, E. L. (1996). From scholarship reconsidered to scholarship assessed. *Quest*, 48(2), 129 – 139.
- Braxton, J. M, Doyle, W. R., Hartley III, H. V., Hirschy, A. S., Jones, W. A., & McLendon, M. K. (2014). *Rethinking college student retention*. San Francisco, CA: Jossey-Bass.
- Bringle, R. G., Hatcher, J. A., & Muthiah, R. (2010). The role of service-learning on the retention of first-year students to second year. *Michigan Journal of Community Service Learning*, 16(2), 38 – 49.
- Brownell, S. E., & Kloser, M. J. (2015). Toward a conceptual framework for measuring the effectiveness of course-based undergraduate research experiences in undergraduate biology. *Studies in Higher Education*, 40(3), 525-544. doi: 10.1080/03075079.2015.1004234
- Brown v. Board of Education, 347 U.S. 483; 74 S. Ct. 686; 98 L. Ed. 873 (1954). U.S. LEXIS 2094; 38 A.L.R.2d 1180; 53 Ohio Op. 326. Retrieved from www.lexisnexis.com/hotttopics/lnacademic
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Boston, MA: Houghton Mifflin Company Boston.
- Cárdenas, J. A., & Cárdenas, B. (1977). *The theory of incompatibilities: A conceptual framework for responding to the educational needs of Mexican American children*. San Antonio, TX: Intercultural Development Research Association.
- Carrigan, W. D., & Webb, C. (2013). *Forgotten dead: Mob violence against Mexicans in the United States, 1848 – 1928*. Oxford, NY: Oxford University Press.
- Chile, L. M., & Black, X. M. (2015). University-community engagement: Case study of university social responsibility. *Education, Citizenship and Social Justice*, 10(3), 234-253. doi: 10.1177/1746197915607278
- Clifford, D., & Petrescu, C. (2012). The keys to university-community engagement sustainability. *Nonprofit Management & Leadership*, 23(1), 77-91. doi: 10.1002/nml.21051
- Contreras, F., & Contreras, G. J. (2015). Raising the bar for Hispanic serving institutions: An analysis of college completion and success rates. *Journal of Hispanic Higher Education*, 14(2), 151-170.
- Crisp, G., Amaury, N., & Taggart, A. (2009). Student characteristics, pre-college, and environmental factors as predictors of majoring in and earning a STEM degree: An analysis of students attending a Hispanic serving institution. *American Educational Research Journal*, 46(4), 924-942.

- Crisp, G., & Nora, A. (2010). Hispanic student success: Factors influencing the persistence and transfer decision of Latino community college students enrolled in developmental education. *Research in Higher Education*, 51(2), 175-194.
doi: 10.1007/s11162-009-9151-x
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests*. *Psychometrika*, 16(3), 297-334.
- De La Trinidad, M., Guajardo, F., Kranz, P. L., & Guajardo, M. (2017). Answering the call: Hispanic-serving institutions as leaders in the quest for access, excellence, and equity in American higher education. *Association of Mexican American Educators Journal*, 11(3), 50 – 83. doi: 10.24974/amae.11.3.361
- Delgado Bernal, D. (2001). Learning and living pedagogies of the home: The mestizo consciousness of Chicana students. *Qualitative Studies in Education*. 14(5), 623-639.
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2011). *The SAGE handbook of qualitative research*. Los Angeles, CA: SAGE Publications.
- Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York, NY: The Macmillan Company.
- Duemer, L. S. (2007). The agricultural education origins of the Morrill land grant act of 1862. *American Educational History Journal*, 34(1), 135 – 146.
- Durkin, R. J. (2016). Experiential learning in engineering technology: A case study on problem solving in project-based learning at the undergraduate level. *Journal of Engineering Technology*, 33(1), 22-29.
- Excelencia in Education. (2015). *The condition of Latinos in education: 2015 factbook*. Washington, D.C.: Excelencia in Education.
- Freire, P. (1970). Excerpt from *pedagogy of the oppressed*. New York, NY: Routledge.
- French, B. F., & Oakes, W. (2004). Reliability and validity evidence for the institutional integration scale. *Educational and Psychological Measurement*, 64(1), 88-98.
- Galdeano, E. C., Flores, A. R., & Moder, J. (2012). The Hispanic association of colleges and universities and Hispanic-serving institutions: Partners in the advancement of Hispanic higher education. *Journal of Latinos & Education*, 11(3), 157-162.
- Gandara, P., Moran, R., & García, E. (2004). Legacy of Brown: Lau and language policy in the United States. *Review of Research in Education*, 28, 27-46.

- Gelmon, S., Blanchard, L., Ryan, K., & Seifer, S. D. (2012). Building capacity for community-engaged scholarship: Evaluation of the faculty development component of the faculty for the engaged campus initiative. *Journal of Higher Education Outreach and Engagement*, 16(1), 21-45.
- Giles, D. E. (2016). The emergence of engaged scholarship: Seven additional years of evolution. *Journal of Higher Education Outreach and Engagement*, 20(1), 193 – 195.
- Giroux, H., & Simon, R. (1989). Popular culture and critical pedagogy: Everyday life as a basis for curriculum knowledge. In Giroux, H., & McLaren, P. (Eds), *Critical pedagogy, the state, and cultural struggle* (p. 236-292). Albany, NY: State University of New York Press.
- Guajardo, F., Guajardo, M. (2013). The power of plática. *Reflections: A Journal of Public Rhetoric, Civic Writing, and Service Learning*. 13(1), 59-164.
- Guajardo, M. & Guajardo, F. (2004). The impact of Brown on the brown of south Texas: A micro political perspective on the education of Mexican Americans in a rural south Texas community. *American Educational Research Journal*, 41(3), 501-526.
- Guajardo, M., & Guajardo, F. (2016). La universidad de la vida: A pedagogy build to last. *International Journal of Qualitative Studies in Education*, 30(1), 6-21.
doi: 10.1080/09518398.2016.1242805
- Guajardo, M., Guajardo, F., Casaperalta, E. (2008). Transformative education: Chronicling a pedagogy for social change. *Anthropology and Education Quarterly*. 39(1), 3-22.
- Guajardo, M. A., Guajardo, F., Janson, C., & Militello, M. (2016). *Reframing community partnerships in education: Uniting the power of place and wisdom of people*. New York, NY: Routledge.
- Haberman, M. (1991). The pedagogy of poverty versus good teaching. *Phi Delta Kappan*. 290-294.
- Harkavy, I., & Zucherman, H. (1999). *Eds and meds: Cities' hidden assets* (The Brookings Institution Survey Series, 22). Washington, DC: The Brookings Institution, Center on Urban & Metropolitan Policy.
- Hernandez v. Texas, 347 U.S. 475; 74 S. Ct. 667; 98 L. Ed. 866 (1954). U.S. LEXIS 2128.
Retrieved from www.lexisnexis.com/hotttopics/lnacademic
- Higher Education Act of 1965, as amended in 1998. Title V. Retrieved from <https://www2.ed.gov/policy/highered/leg/hea98/sec501.html>
- Hu, S., Kuh, G. D., & Gayles, J. G. (2007). Engaging undergraduate students in research activities: Are research universities doing a better job? *Innovative Higher Education*, 32(3), 167-177.

- Hurtado, S., Sáenz, V. B., Santos, J. L., & Cabrera, N. L. (2008). Advancing in higher education: A portrait of Latina/o college freshmen at four-year institutions: 1975-2006. Los Angeles: Higher Education Research Institute, UCLA.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate and Latino college students' sense of belonging. *Sociology of Education*, 70(4), 324-345.
- Hurtado, S., Griffin, K. A., Arellano, L., & Cuellar, M. (2008). Assessing the value of climate assessments: Progress and future directions. *Journal of Diversity in Higher Education*, 1(4), 204-221. doi: 10.1037/a0014009
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H., & Longerbeam, S. D. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development*, 48(5), 525-542.
- Kronick, R. F., Lester, J. N., & Luter, D. G. (2013a). Introduction to higher education's role in public school reform and community engagement. *Peabody Journal of Education*, 88(5), 519-524. doi: 10.1080/0161956X.2013.834786
- Kronick, R. F., Lester, J. N., & Luter, D. G. (2013b). Conclusion to higher education's role in public school reform and community engagement. *Peabody Journal of Education*, 88(5), 657-664. doi: 10.1080/0161956X.2013.835194
- Kena, G., Hussar, W., McFarland, J., de Brey, C., Musu-Gillette, L., Wang, X., ... Dunlop Velez, E. (2016). *The condition of education 2016* (NCES 2016-144). U. S. Department of Education, National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubsearch>
- Ladson-Billings, G. (2014). Culturally relevant pedagogy 2.0: a.k.a. the remix. *Harvard Educational Review*, 84(1), 74-84.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Education Research*, 32(3), 465-491.
- Lau v. Nichols, 414 U.S. 563; 94 S. Ct. 786; 39 L. Ed. 2d 1 (1974). U.S. LEXIS 151. Retrieved from www.lexisnexis.com/hottopics/lnacademic
- Linn, M. C., Palmer, E., Baranger, A., Gerard, E., & Stone, E. (2015). Undergraduate research experiences: Impacts and opportunities. *Science*, 347(6222). Retrieved from <http://science.sciencemag.org/>
- Locks, A. M., Hurtado, S., Bowman, N. A., & Oseguera, L. (2008). Extending notions of campus climate and diversity to students' transition to college. *The Review of Higher Education*, 31(3), 257-285. doi: 10.1353/rhe.2008.0011

- Maestas, R., Vaquera, G. S., & Zehr, L. M. (2007). Factors impacting sense of belonging at a Hispanic-serving institution. *Journal of Hispanic Higher Education*, 6(3), 237-256. doi: 10.1177/1538192707302801
- Maslow, A. H. (1970). *Motivation and personality* (2nd ed.). New York, NY: Harper & Row.
- Maslow, A. H. (1999). *Toward a psychology of being* (3rd ed.). New York, NY: John Wiley & Sons, Inc.
- MacDonald, V. M., Botti, J. M., & Clarck, L. H. (2007). From visibility to autonomy: Latinos and higher education in the U.S., 1965-2005. *Harvard Educational Review*, 77(4), 474-504.
- Mariscal, G. (2005). *Brown-eyed children of the sun: Lessons from the Chicano Movement, 1965 – 1975*. Albuquerque, NM: University of New Mexico Press.
- McCormick, A. C., & Zhao, C. (2005). Rethinking and reframing: The Carnegie classification. *Change: The Magazine of Higher Learning*, 37(5), 51-57.
- Mills, G. E., & Gay, L. R. (2016). *Educational research: Competencies for analysis and applications*. Boston: Pearson.
- Morin, S. M., Jaeger, A. J., & O'Meara, K. (2016). The state of community engagement in graduate education: Reflecting on 10 years of progress. *Journal of Higher Education Outreach and Engagement*, 20(1), 151 – 156.
- Nellum, C. J., & Valle, K. (2015, September). Government investment in public Hispanic-serving institutions. Retrieved from <http://www.acenet.edu/news-room/Documents/Government-Investment-in-Public-Hispanic-Serving-Institutions.pdf>
- Núñez, A. M. (2009). A critical paradox? Predictors of Latino students' sense of belonging in college. *Journal of Diversity in Higher Education*, 2(1), 46-61. doi: 10.1037/a0014099
- Ortegon, R. R. (2013). *LULAC v. Richards: The class action lawsuit that prompted the south Texas border initiative and enhanced access to higher education for Mexican Americans living along the south Texas border* (Doctoral dissertation). ProQuest Dissertations & Theses Global. (Order No. 3604989).
- Ovando, C. (2003). Bilingual education in the United States: Historical and current issues. *Bilingual Research Journal*, 27(1), 1-24.
- Owens, R. E., & Valesky, T.C. (2015). *Organizational behavior in education: Leadership and school reform*, 11th Ed. [Kindle Edition]. Retrieved from Amazon.com
- Pappamihel, N. E., & Moreno, M. (2011). Retaining Latino students: Culturally responsive instruction in colleges and universities. *Journal of Hispanic Higher Education*, 10(4), 331-344.

- Parsons, M. D., & Plakhotnic, M. (2006). Invisible to the majority: The search for critical race theory in the higher education and policy literature. *Race, Gender & Class, 13*(3-4), 162-175.
- Pascarella, E. T., & Terenzini, P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *The Journal of Higher Education, 51*(1), 60-75.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. San Francisco, CA: Jossey-Bass.
- Plessy v. Ferguson, 163 U.S. 537; 16 S. Ct. 1138; 41 L. Ed. 256 (1896). U.S. LEXIS 3390. Retrieved from www.lexisnexis.com/hottopics/lnacademic
- Quiñones, J. G. (1990). *Chicano politics: Reality & promise 1940 – 1990*. Albuquerque, NM: University of New Mexico Press.
- Reason, R. D., Terenzini, P. T., & Domingo, R. J. (2006). First things first: Developing academic competence in the first year of college. *Research in Higher Education, 47*(2), 149-175.
- Rodriguez v. San Antonio ISD, 337 F. Supp. 280 (1971). U.S. Dist. LEXIS 10250. Retrieved from www.lexisnexis.com/hottopics/lnacademic
- Richards v. LULAC, 868 S.W.2d 306 (1993). Tex. LEXIS 120. Retrieved from www.lexisnexis.com/hottopics/lnacademic
- Saltmarsh, J., Janke, E. M., & Clayton, P. H. (2015). Transforming higher education through and for democratic civic engagement: A model for change. *Michigan Journal of Community Service Learning, 22*(1), 122 – 128.
- Santiago, D. A. (2006). Inventing Hispanic-serving institutions (HSIs): The basics. Washington, DC: Excelencia in Education.
- Santiago, D. A. (2012). Public policy and Hispanic-serving institutions: From invention to accountability. *Journal of Latinos and Education, 11*(3), 163-167. doi: 10.1080/15348431.2012.686367
- Satterfield, J., & Rincones, R. D. (2008). An evolving curriculum: The technical core of Hispanic-serving institutions in the state of Texas. *College Quarterly, 11*(4), 1-19.
- Scheffé, H. (1959). *The analysis of variance*. New York, NY: Wiley.
- Schreiner, L. A., Louis, M. C., & Nelson, D. D. (Eds.). (2012). *Thriving in Transitions: A Research-Based Approach to College Students Success*. Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.

- Serna v. Portales, 499 F.2d 1147 (1974). U.S. App. LEXIS 7619. Retrieved from www.lexisnexis.com/hottopics/lnacademic
- Spady, G. S. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, 1(1), 64-85.
- Spady, G. S. (1971). Dropouts from higher education: Toward an empirical model. *Interchange*, 2(3), 68-62.
- Stum, D. L. (2001). Maslow revisited: Building the employee commitment pyramid. *Strategy & Leadership*, 29(4), 4-9. doi: 10.1108/10878570110400053
- Sweatt v. Painter, 339 U.S. 629; 70 S. Ct. 848; 94 L. Ed. 1114 (1950). U.S. LEXIS 1809. Retrieved from www.lexisnexis.com/hottopics/lnacademic
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125.
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: The University of Chicago Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: The University of Chicago Press.
- Tinto, V. (2012). *Completing College: Rethinking Institutional Action*. Chicago, IL: The University of Chicago Press.
- Trueba, E. T. (1999). Critical ethnography and a Vygotskian pedagogy of hope: The empowerment of Mexican immigrant children. *International Journal of Qualitative Studies in Education*, 12(6), 591-614. doi: 10.1080/095183999235764
- Tukey, J. W. (1977). *Exploratory data analysis*. Reading, MA: Addison-Wesley Publishing Company.
- Valencia, R. (2010). *Dismantling contemporary deficit thinking: Educational thought and practice*. New York, NY: Routledge.
- Vogt, W. P. (1999). *Dictionary of statistics and methodology* (2nd ed.). Thousand Oaks, CA: Sage.
- Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques*, (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Whiteford, L., & Strom, E. (2013). Building community engagement and public scholarship into the university. *Annals of Anthropological Practice*, 37(1), 72 – 79. doi: 10.1111/napa.12018

- Whiting, A. N. (1988). Standing at the crossroads: Traditionally black colleges today. In American Association of State Colleges and Universities (Eds.), *Minorities in Public Higher Education: At a Turning Point* (43-64). Washington, DC: AASCU Press.
- Willcoxson, L., Cotter, J., & Joy, S. (2011). Beyond the first-year experience: the impact on attrition of student experiences throughout undergraduate degree studies in six diverse universities. *Studies in Higher Education*, 36(3), 331–352.
- Wininger, S. R. & Norman, A. D. (2010). Assessing coverage of Maslow's theory in educational psychology textbooks: A content analysis. *Teaching Educational Psychology*, 6(1), 33-48.
- Yardley, S., Teunissen, P. W., & Dornan, T. (2012). Experiential learning: Transforming theory into practice. *Medical Teacher*, 34(2),161-164. doi: 10.3109/0142159X.2012.643264
- Yarsinske, A. W. (2004). *All for one and one for all: A celebration of 75 years of the League of United Latin American Citizens (LULAC)*. Virginia Beach, VA: The Donning Company Publishers.
- Yosso, T. (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race, Ethnicity and Education*. 8(1), 69-91.
- Zambrana, R. E., & Hurtado, S. (Eds.). (2015). *The magic key: The educational journey of Mexican Americans from K-12 to college and beyond*. Austin, TX: University of Texas Press.

APPENDIX A

Appendix A

Request for Permission to use Instruments

From: French, Brian F
Sent: Thursday, February 1, 2018 8:23 AM
To: Juan Salinas
Subject: RE:

Dear Juan,

Thank you for your message. I think that sounds fine. Please do let me know how you use it and what you find! I wish you success in your work.

Take care,
Brian

Brian F. French
Professor-Psychometrics and Research Methods
Graduate Faculty-Prevention Science
Director-Psychometric Laboratory
Director-[LPRC](#)
College of Education | Washington State University
[509-335-8584](#)

From: Juan Salinas [<mailto:juan.salinas02@utrgv.edu>]
Sent: Wednesday, January 31, 2018 7:47 PM
To: French, Brian F <frenchb@wsu.edu>
Subject:

Dear Dr. French,

My name is Juan Salinas, Jr. and I am doctoral candidate in Educational Leadership at the University of Texas Rio Grande Valley. The reason for this email is to seek your permission to use the survey items in your revised *Institutional Integration Scale* in my research study for my dissertation.

Your support will be greatly appreciated.

Sincerely,

Juan Salinas, Jr., Lecturer
School of Mathematical and Statistical Sciences
The University of Texas Rio Grande Valley

From: Sylvia Hurtado
Sent: Monday, February 5, 2018 11:24 PM
To: Juan Salinas
Cc: shurtado@gseis.ucla.edu
Subject: Re: Seeking Permission to Use Survey Items

Dear Juan,
You can use the survey items so long as you give proper citation of the source.

Sylvia Hurtado

Professor of Education
UCLA

On Mon, Feb 5, 2018 at 9:01 PM, Juan Salinas <juan.salinas02@utrgv.edu> wrote:

Dear Dr. Hurtado,

My name is Juan Salinas, Jr. and I am a doctoral candidate in Educational Leadership at the University of Texas Rio Grande Valley. The reason for this email is to seek your permission to use your survey items in *Effects of College Transition and Perceptions of the Campus Racial Climate on Latino College Students' Sense of Belonging* in my research study for my dissertation.

Your support will be greatly appreciated.

Sincerely,

Juan Salinas, Jr., Lecturer

School of Mathematical and Statistical Sciences

The University of Texas Rio Grande Valley

Re: Seeking Permission to Use Survey Items



Juan Salinas <juan.salinas02@utrgv.edu>

2/5/2018 9:54 PM



To: Nunez, Anne-Marie

Thank you for the info.
Juan

On Feb 5, 2018, at 9:33 PM, Nunez, Anne-Marie <nunez.80@osu.edu> wrote:

Dear Juan,

The measures are from the *Diverse Democracy Survey* which was administered by Sylvia Hurtado who is now at UCLA.

You should contact her directly to obtain permission to use the survey items. Be clear in the subject line about your request, since she may take a while to get back to you.

All the best,

Anne-Marie Nuñez

From: Juan Salinas <juan.salinas02@utrgv.edu>

Date: Monday, February 5, 2018 at 10:26 PM

To: Anne-Marie Nunez <nunez.80@osu.edu>

Subject: Seeking Permission to Use Survey Items

Dear Dr. Nuñez,

I am resending this email because in my previous email I did not include a subject.

My name is Juan Salinas, Jr. and I am doctoral candidate in Educational Leadership at the University of Texas Rio Grande Valley. The reason for this email is to seek your permission to use your survey items in *Measures of Dependent and Independent Variables in Structural Model Predicting a Sense of Belonging* in my research study for my dissertation.

Your support will be greatly appreciated.

Sincerely,

Juan Salinas, Jr., Lecturer
School of Mathematical and Statistical Sciences
The University of Texas Rio Grande Valley

APPENDIX B

Appendix B

Survey Instrument

Integration and Sense of Belonging Survey

This inventory is intended to measure the impact of community engaged learning experiences on students' affinity and affiliation to the institution and the community. Please respond to the following statements by selecting the response that best reflects your pedagogy.

Your responses will be strictly confidential.

5: Strongly Agree, 4: Somewhat Agree, 3: Not sure, 2: Somewhat Disagree, 1: Strongly Disagree

Please select (circle) only one from each of the following statements:

Statement	Response
<i>Scale I: Peer-Group Interactions</i>	
1. Since coming to this university I have developed close personal relationships with other students.	5 4 3 2 1
2. The student friendships I have developed at this university have been personally satisfying.	5 4 3 2 1
3. My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values.	5 4 3 2 1
4. My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.	5 4 3 2 1
5. It has been easy for me to meet and make friends with other students.	5 4 3 2 1
6. Many of the students I know would be willing to listen to me and help me if I had a personal problem.	5 4 3 2 1
7. Many students at this university have values and attitudes like mine.	5 4 3 2 1
<i>Scale II: Interactions with Faculty</i>	
8. My non-classroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.	5 4 3 2 1

9. My non-classroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas.	5	4	3	2	1
10. My non-classroom interaction with faculty have had a positive influence on my career goals and aspirations.	5	4	3	2	1
11. Since coming to his university I have developed a close, personal relationship with at least one faculty member.	5	4	3	2	1
12. I am satisfied with the opportunities to meet and interact informally with faculty members.	5	4	3	2	1
<i>Scale III: Faculty Concern for Student Development and Teaching</i>					
13. Many of the faculty members I have had contact with are generally interested in students.	5	4	3	2	1
14. Many of the faculty members I have had contact with are generally outstanding or superior teachers.	5	4	3	2	1
15. Many of the faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.	5	4	3	2	1
16. Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas.	5	4	3	2	1
17. Most faculty members I have had contact with are genuinely interested in teaching	5	4	3	2	1
<i>Scale IV: Academic and Intellectual Development</i>					
18. I am satisfied with the extent of my intellectual development since enrolling in this university.	5	4	3	2	1
19. My academic experience has had a positive influence on my intellectual growth and interest in ideas.	5	4	3	2	1
20. I am satisfied with my academic experience at this university.	5	4	3	2	1
21. Most of my courses this year have been intellectually stimulating.	5	4	3	2	1
22. My interest in ideas and intellectual matters has increased since coming this university.	5	4	3	2	1
23. I am more likely to attend a cultural event (for example, a concert, lecture, or art show) now than I has before coming to this university.	5	4	3	2	1
24. I have performed academically as well as I anticipated I would.	5	4	3	2	1
<i>Scale V: Institutional and Goal Commitments</i>					
25. It is important for me to graduate from college.	5	4	3	2	1
26. I am confident that I made the right decision in choosing to attend this university.	5	4	3	2	1
27. It is likely that I will register at this university next Fall.	5	4	3	2	1
28. It is important to me to graduate from his university.	5	4	3	2	1
29. I have an idea of what I want to major in.	5	4	3	2	1

30. Getting good grades is important to me.	5	4	3	2	1
<i>Scale VI: Sense of Belonging</i>					
31. I see myself as part of the university community.	5	4	3	2	1
32. I feel a sense of belonging to this university.	5	4	3	2	1
33. I feel I'm a member of the university community.	5	4	3	2	1
34. I am enthusiastic about this university.	5	4	3	2	1
35. If asked, I would recommend this university to others.	5	4	3	2	1
<i>Scale VII: Perceived Campus Climate</i>					
36. I have been singled out in class because of my race/ethnicity, gender, or sexual orientation.	5	4	3	2	1
37. I have heard faculty express stereotypes about the racial/ethnic groups in class.	5	4	3	2	1
38. There is a lot of racial tension on campus.	5	4	3	2	1

DEMOGRAPHICS - Please check the box that best describes you.

Immigration Status

- At least one of my grandparents, at least one of my parents and I are U.S.-born.
- At least one of my parents and I are U.S.-born.
- I am U.S.-born, and my parents are not.
- I am a naturalized U.S. citizen.
- I am a resident alien or permanent resident.
- I am in the U.S. on a student visa.
- I am a DACA student.
- Neither

Race/Ethnicity

- White
- Black
- Hispanic/Latino
- American Indian/Alaska Native
- Asian Pacific Islander
- Race/Ethnicity not listed, please specify _____

Gender

- Male
- Female

Language Proficiency

Please rate your proficiency for at most three languages that you may be able to speak.

- 1. Spanish Low Medium High
- 2. English Low Medium High

If you can speak a third language, please specify and rate your proficiency:

- 3. _____ Low Medium High

Number of Years attending UTRGV including UTB and UTPA

- 1 2 3 4 5 or more

Community Projects in Other Courses

I am currently enrolled in another course(s) where:

- I am required to do community service hours.
- I am required to work with a community organization.

College Affiliation

- School of Medicine
- College of Health Affairs Arts
- College of Sciences
- College of Fine Arts
- College of Education & P-16 Integration
- College of Engineering & Computer Science
- Robert C. Vackar College of Business & Entrepreneurship

Thank you for your time.

Note: This survey instrument was modified based on:

1. Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate and Latino college students' sense of belonging. *Sociology of Education*, 70(4), 324-345.
2. French, B. F., & Oakes, W. (2004). Reliability and validity evidence for the institutional integration scale. *Educational and Psychological Measurement*, 64(1), 88-98.

APPENDIX C

Appendix C

Internal Permission Letters



March 15, 2018

Juan Salinas, Jr.
School of Mathematical and Statistical Sciences
1201 W. University Dr.
Edinburg, TX 78539
juan.salinas02@utrgv.edu

RE: HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO STUDENT INTEGRATION AND SENSE OF BELONGING

Dear Juan Salinas, Jr.,

I am acknowledging that you will be conducting your UTRGV research project, HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO STUDENT INTEGRATION AND SENSE OF BELONGING here and have no objections as long as IRB approval is obtained prior to data collection. I understand that participants will be asked to complete a survey in order to obtain data needed for the study.

Sincerely,

A handwritten signature in black ink that reads "P. Grewal" followed by the date "3/15/18".

Dr. Parwinder Grewal
Dean
College of Sciences
University of Texas Rio Grande Valley

March 15, 2018

Juan Salinas, Jr.
School of Mathematical and Statistical Sciences
1201 W. University Dr.
Edinburg, TX 78539
juan.salinas02@utrgv.edu

RE: HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO STUDENT INTEGRATION AND SENSE OF BELONGING

Dear Juan Salinas, Jr.,

I am acknowledging that you will be conducting your UTRGV research project, HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO STUDENT INTEGRATION AND SENSE OF BELONGING here and have no objections as long as IRB approval is obtained prior to data collection. I understand that participants will be asked to complete a survey in order to obtain data needed for the study.

Sincerely,



Dr. Alexis Racellis
Associate Dean for Community Engagement and Outreach
College of Sciences
University of Texas Rio Grande Valley

March 13, 2018

Juan Salinas, Jr.
School of Mathematics and Statistical Sciences
1201 W. University Drive
Edinburg, TX 78539
juan.salinas02@utrgv.edu

RE: HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND
ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO
STUDENT INTEGRATION AND SENSE OF BELONGING

Dear Juan Salinas, Jr.,

I am acknowledging that you will be conducting your UTRGV research project, HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO STUDENT INTEGRATION AND SENSE OF BELONGING here and have no objections as long as IRB approval is obtained prior to data collection. I understand that participants will be asked to complete a survey in order to obtain data needed for the study.

Sincerely,



Cristina Trejo
Associate Vice President
Office of Community Engagement and Assessment
University of Texas Rio Grande Valley

March 21, 2018

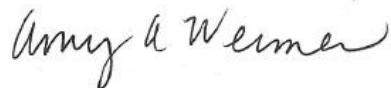
Juan Salinas, Jr.
School of Mathematical and Statistical Sciences
1201 W. University Dr.
Edinburg, TX 78539
juan.salinas02@utrgv.edu

RE: HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND
ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO
STUDENT INTEGRATION AND SENSE OF BELONGING

Dear Juan Salinas, Jr.,

I am acknowledging that you will be conducting your UTRGV research project, HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO STUDENT INTEGRATION AND SENSE OF BELONGING here and have no objections as long as IRB approval is obtained prior to data collection. I understand that participants will be asked to complete a survey in order to obtain data needed for the study.

Sincerely,



Dr. Amy Weimer
Associate Dean of Student Academic Development
Office of Student Academic Success
University of Texas Rio Grande Valley

March 27, 2018

Juan Salinas, Jr.
School of Mathematical and Statistical Sciences
1201 W. University Dr.
Edinburg, TX 78539
juan.salinas02@utrgv.edu

RE: HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND
ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO
STUDENT INTEGRATION AND SENSE OF BELONGING

Dear Juan Salinas, Jr.,

I am acknowledging that you will be conducting your UTRGV research project, HIGHER EDUCATION SOCIAL RESPONSIBILITY: AN EMPIRICAL ANALYSIS AND ASSESSMENT OF A HISPANIC-SERVING INSTITUTION'S COMMITMENT TO STUDENT INTEGRATION AND SENSE OF BELONGING here and have no objections as long as IRB approval is obtained prior to data collection. I understand that participants will be asked to complete a survey in order to obtain data needed for the study.

Sincerely,



Dr. Javier Cavazos
Director
Center for Teaching Excellence
University of Texas Rio Grande Valley

APPENDIX D

Appendix D

Confidential Self-Report Survey - Consent Form

[Confidential Self-Report Survey - Consent Script & Handout Option]

The University of Texas Rio Grande Valley

Consent Script

“Hello, my name is Juan Salinas. I am a Doctoral Candidate researcher at the University of Texas Rio Grande Valley (UTRGV). I am conducting a research study for my dissertation about **UTRGV’s Commitment to Student Integration and Sense of Belonging**. Would you mind completing a short survey? It should take about 10 minutes of your time. Your responses are confidential; any individually identifiable responses will be securely stored and will only be available to those directly involved in this study. I ask that you try to answer all questions. However, if there are any questions that you would prefer to skip, simply leave the answer blank.

IF THE INDIVIDUAL AGREES, confirm that they are 18+ (unless the specific sample would exclude minors):

PROVIDE THEM WITH A COPY OF THE SURVEY AND A STUDY INFORMATION HANDOUT (shown below).

APPENDIX E

Appendix E

Factor Loadings Procedure: Items in Scale V

Rotated Component Matrix^a								
Item	Component							
	1	2	3	4	5	6	7	8
q1	.08	.85	-.01	.09	.10	.02	.10	.03
q2	.20	.85	.00	.14	.07	-.04	.00	.02
q3	.10	.85	.17	.15	.16	.02	.04	.06
q4	.11	.78	.15	.20	.14	.05	.03	.05
q5	.32	.59	-.10	.23	.15	-.14	.01	-.03
q6	.29	.75	.13	-.03	.09	-.09	.00	-.06
q7	.38	.51	.31	.03	-.03	-.22	-.09	.14
q8	.17	.13	.25	.18	.80	.01	-.02	.04
q9	.15	.12	.29	.20	.78	.03	.02	.10
q10	.15	.23	.30	.22	.66	-.01	.01	.12
q11	.08	.26	.10	.06	.46	.14	.21	-.12
q13	.11	.12	.74	.08	.24	.01	.04	-.07
q14	.24	-.02	.75	.12	.19	-.04	.03	-.04
q15	.16	.10	.77	.14	.06	-.03	.01	-.01
q16	.21	.25	.72	.18	.27	-.07	.04	-.03
q17	.22	-.02	.67	.29	.09	-.25	-.13	.15
q18	.20	.18	.16	.82	.16	-.03	-.03	-.05
q19	.15	.25	.22	.76	.21	-.05	.10	.00
q20	.35	.12	.22	.75	.09	-.10	-.02	-.04
q21	.26	.02	.23	.53	.19	-.08	.06	.30
q22	.40	.12	.20	.54	.16	.07	.18	.21
q23	.58	.18	.08	.20	.17	.00	.04	-.26
q24	-.02	.31	-.17	.48	.40	-.16	-.03	-.03
q25	.13	.02	.01	.02	-.03	-.10	.78	-.10
q26	.58	.05	.24	.48	-.06	.01	.13	.05
q27	.30	.16	.23	.05	-.28	-.16	.06	-.43
q28	.49	.04	.32	.12	-.06	.01	.28	-.02
q29	.08	.15	.01	.09	.00	-.09	.03	.83
q30	.04	.04	-.01	.06	.12	-.11	.77	.12
q31	.79	.30	.19	.04	.19	-.04	.09	.04
q32	.83	.29	.11	.11	.22	-.03	.01	.11
q33	.82	.30	.11	.09	.25	-.09	.09	.02
q34	.79	.19	.20	.36	.02	-.05	.01	.03
q35	.69	.07	.27	.38	-.04	-.06	-.06	-.01
q36	-.10	-.13	-.16	.08	.03	.84	-.07	-.01
q37	-.04	.07	-.03	-.13	-.06	.85	.02	.01
q38	.01	-.07	-.02	-.10	.11	.75	-.18	-.04

Extraction Method: Principal Component Analysis.

a. Rotation converged in 8 iterations.

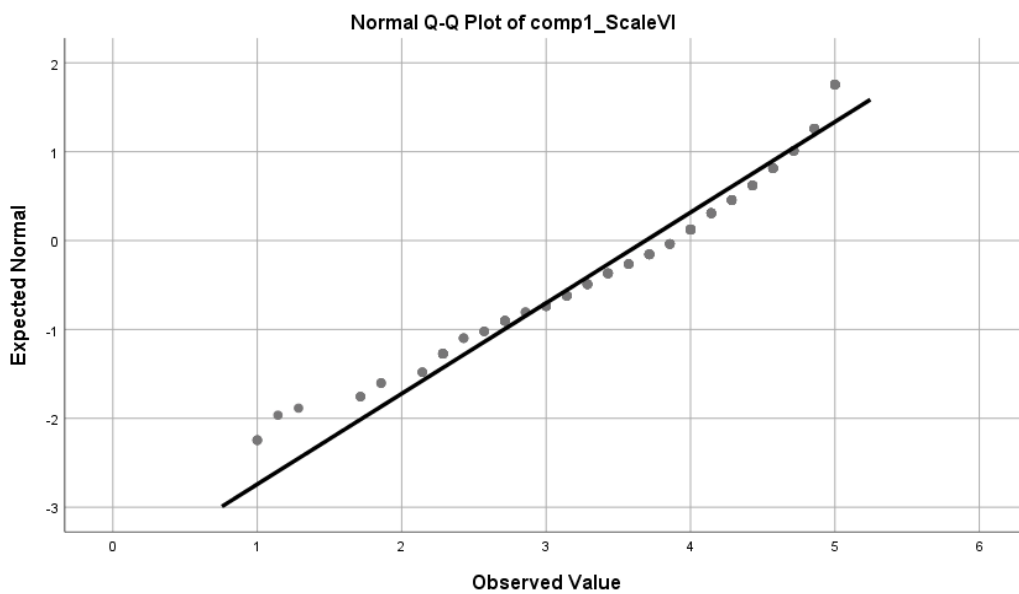
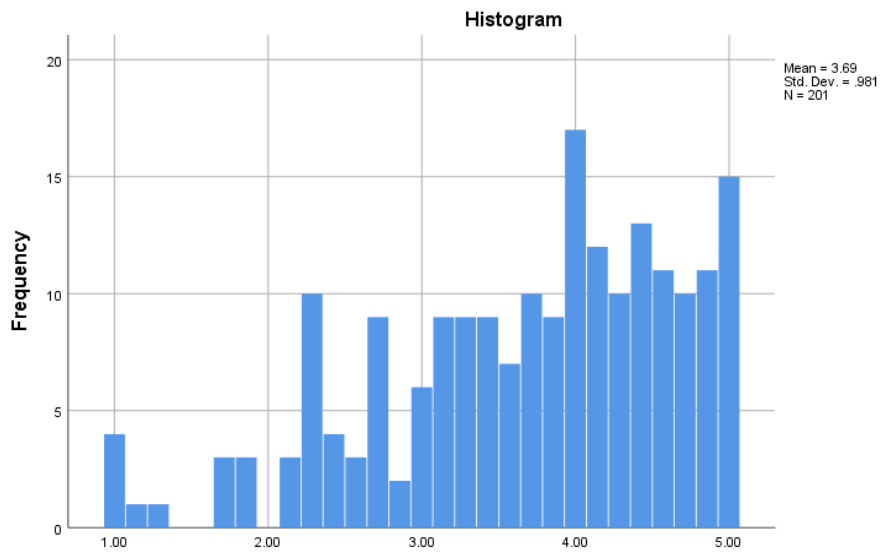
Note: Factor loadings > .40 are in boldface

APPENDIX F

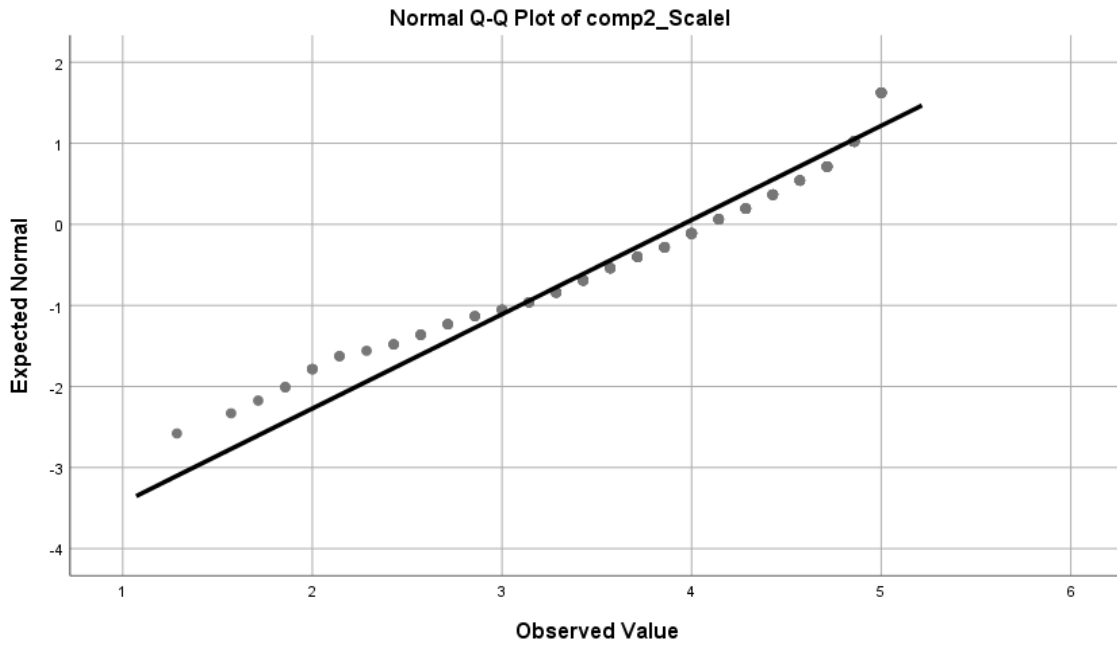
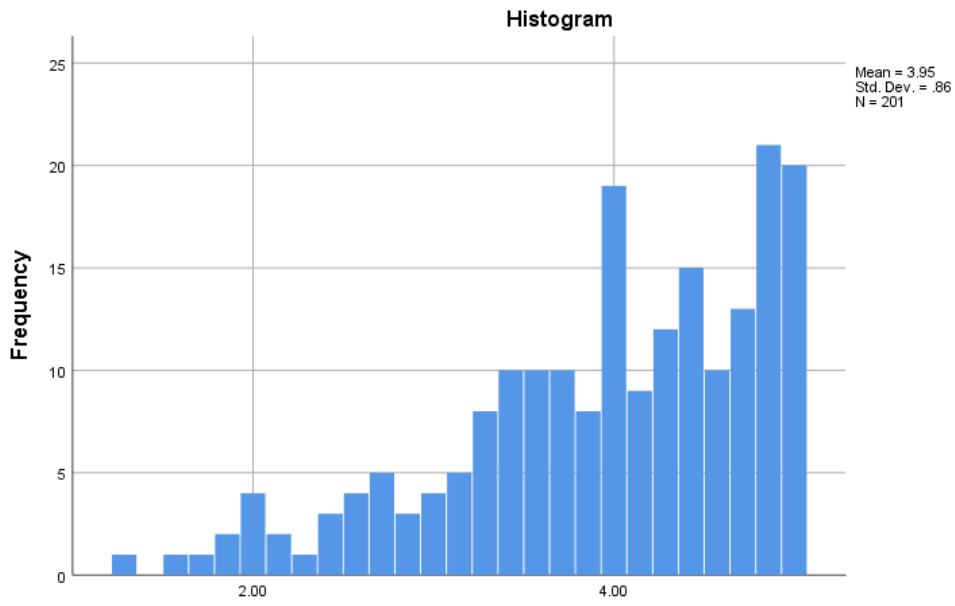
Appendix F

Histograms and Normal Q-Q Plots for Continuous Variables

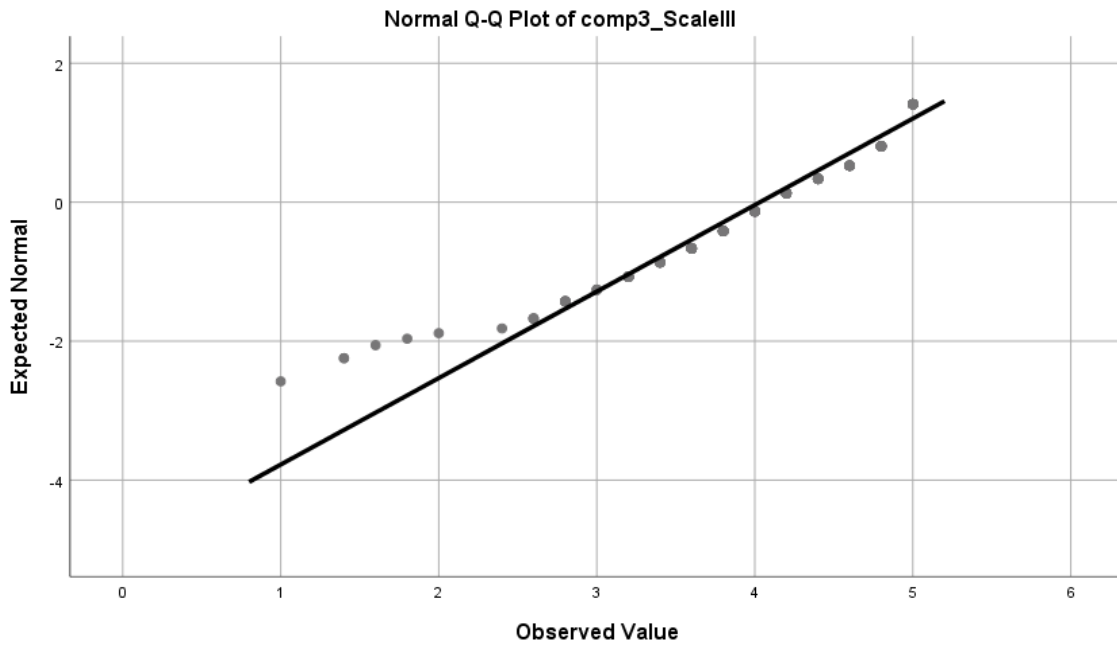
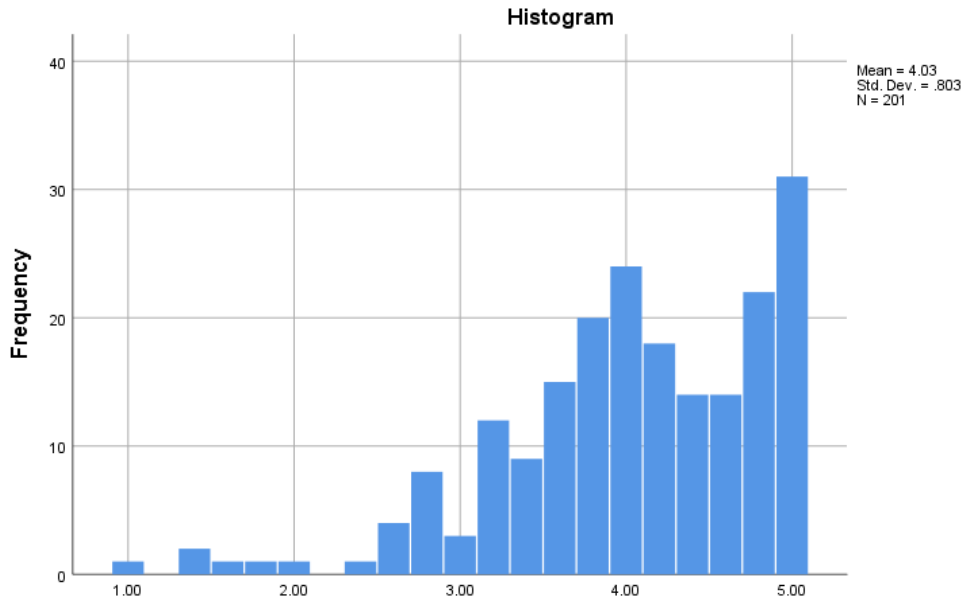
Scale VI – Sense of Belonging



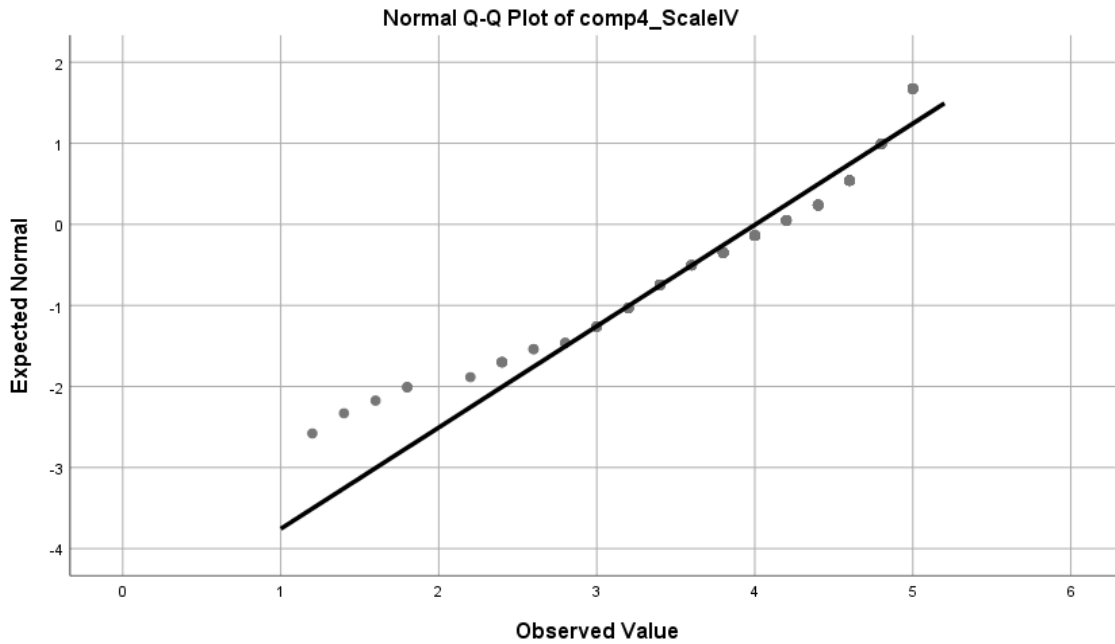
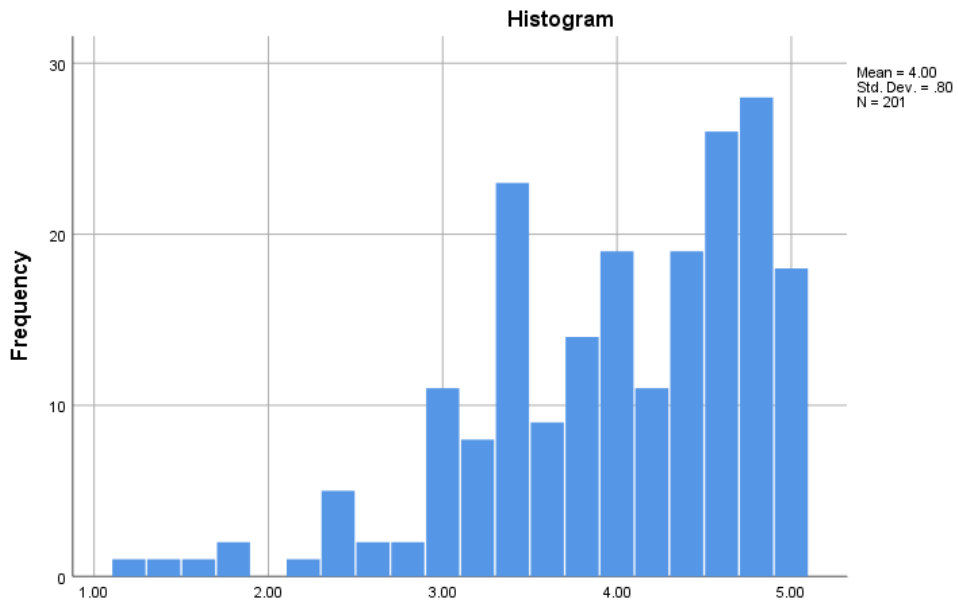
Scale I – Peer Group Interactions



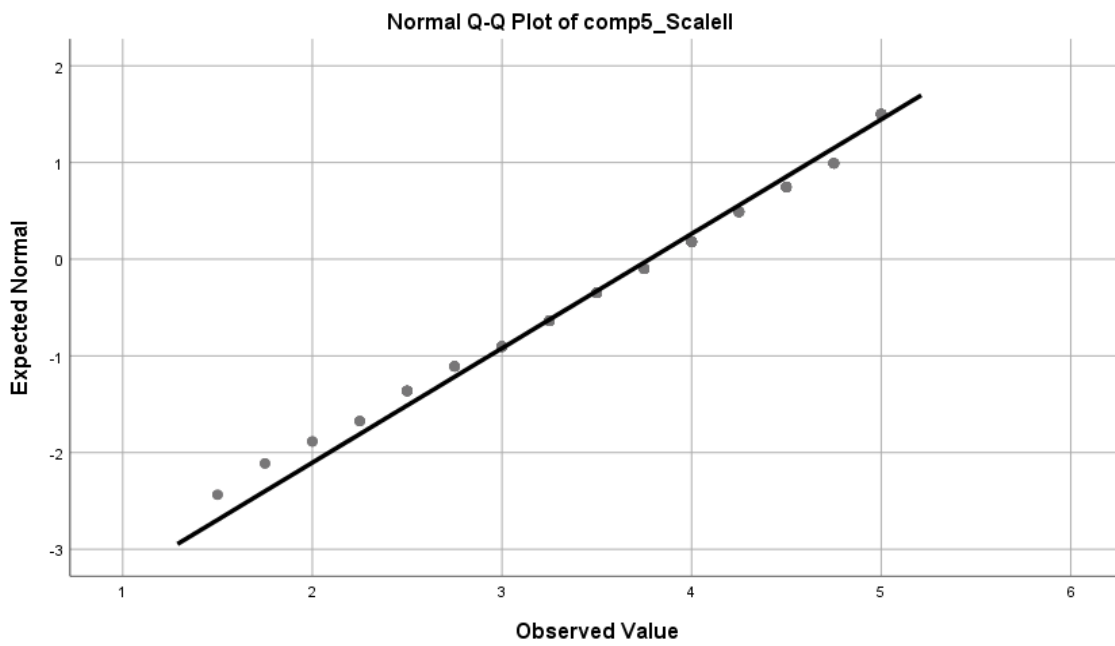
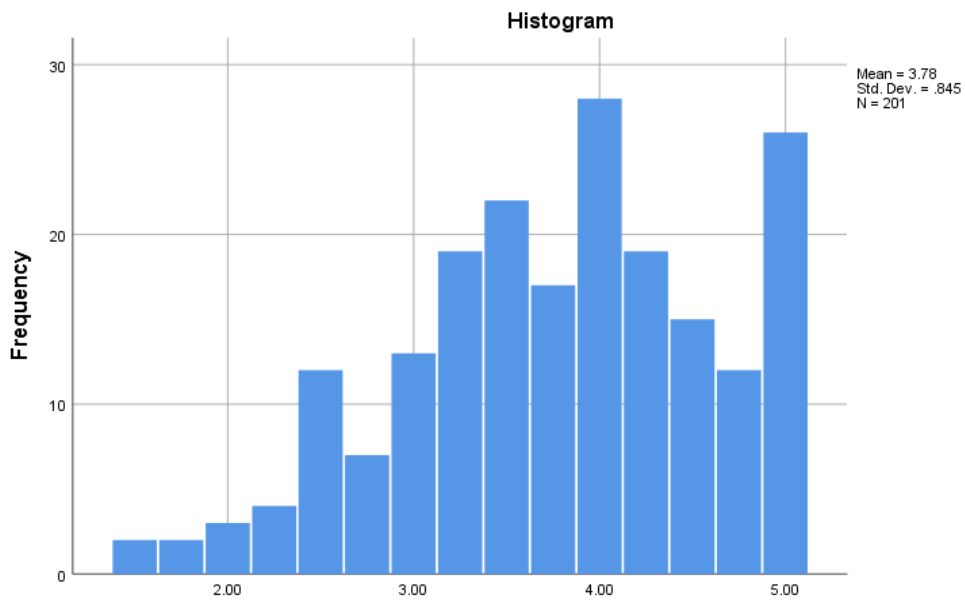
Scale III – Faculty Concern for Student Development and Teaching



Scale IV – Academic and Intellectual Development



Scale II – Interactions with Faculty

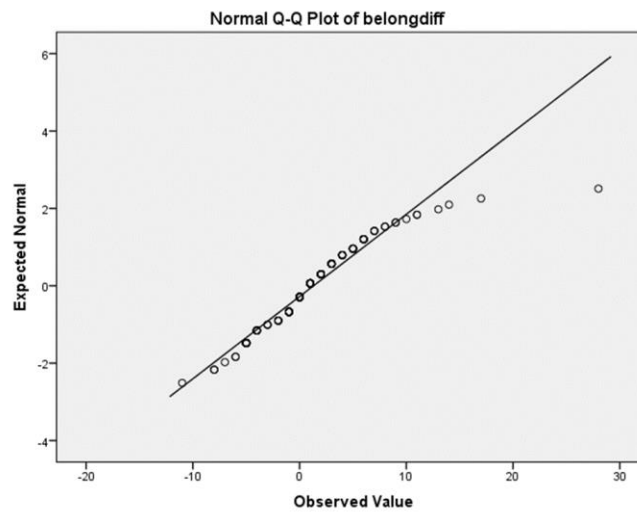
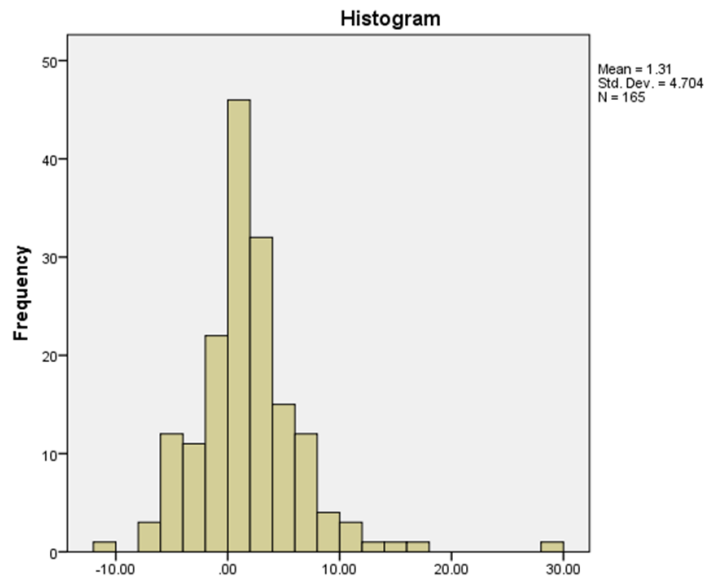


APPENDIX G

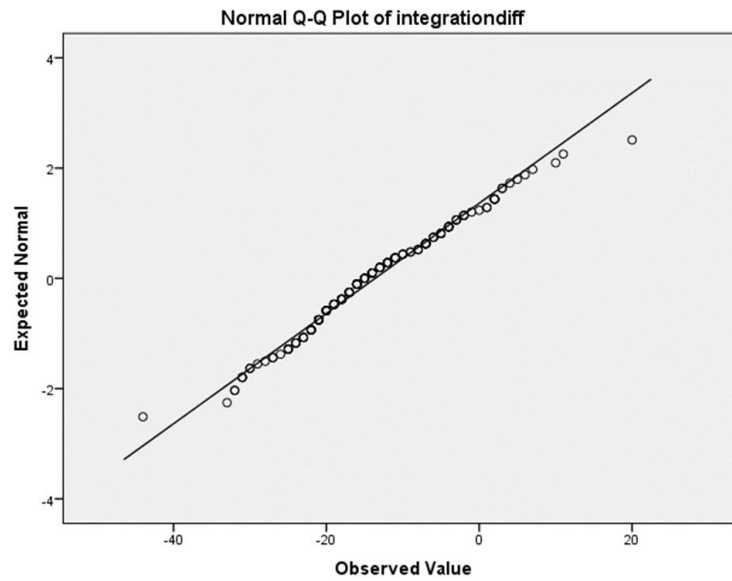
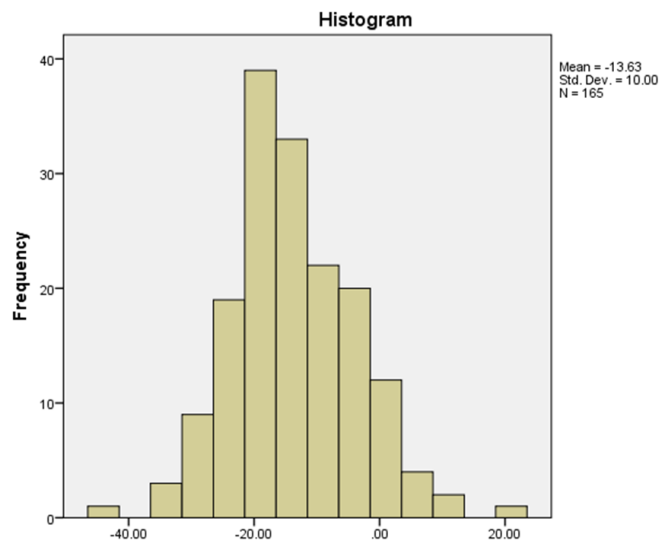
Appendix G

Histograms and Normal Q-Q Plots for Differences

Difference Scores for Sense of Belonging



Difference Scores for Institutional Integration



BIOGRAPHICAL SKETCH

Juan Salinas, Jr. was born in Tamaulipas, México. After living in the border city of Nuevo Progreso, he moved to Progreso, Texas at age ten. He attended and was graduated from Weslaco High School in 1995 and attended The University of Texas Pan American. Juan earned his Bachelor of Science degree in Electrical Engineering in 1999. He worked as an Electrical Engineer in The Department of Advanced Manufacturing in the automotive industry from 1999 to 2003. He changed his career focus to education and was a high school mathematics teacher from 2004 to 2015. Juan taught at the Pharr-San Juan-Alamo ISD (2004-2008), Weslaco ISD (2008-2010) and at South Texas ISD (2011-2015). In 2010 he enrolled at The University of Texas Pan American and earned his Master of Science degree in Mathematical Sciences in 2011. In 2015, Juan enrolled in the Doctoral Program in Educational Leadership at the University of Texas Rio Grande Valley. He was graduated with a Doctor of Education in Educational Leadership (Ed.D.) in 2018. You may contact Juan at: mrjuansalinasjr@gmail.com.