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LANGUAGE PROFICIENCY AND ACADEMIC SUCCESS OF BILINGUAL

HISPANIC NURSING STUDENTS


by


CRISTINA DOMINGUEZ


A dissertation submitted in partial fulfillment
of requirement for the degree of
Doctor of Philosophy
School of Nursing

Danita Alfred, Ph.D. R.N., Committee Chair

College of Nursing and Health Sciences



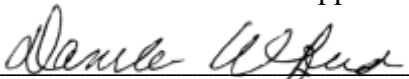The University of Texas at Tyler
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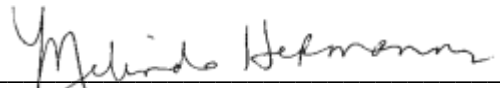Tyler, Texas


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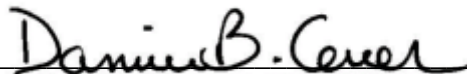CRISTINA DOMINGUEZ


has been approved for the dissertation requirement on
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for the Doctor of Philosophy degree

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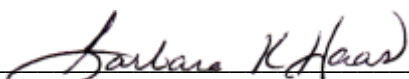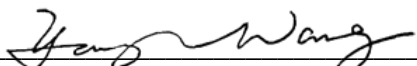Dissertation Chair: Danita Alfred, Ph.D.


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Abstract


THE ROLE OF LANGUAGE PROFICIENCY IN ACADEMIC SUCCESS IN
BILINGUAL NURSING EDUCATION

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The University of Texas at Tyler
November, 2017

The United States (U.S.) experienced recent growth in its minority population.
This requires an increase of culturally diverse health care providers. English as a second
language (ESL) students face challenges such as overcoming their inability to write,
comprehend, and communicate in a language different from their native tongue. The
study explored the role of language proficiency on academic success among bilingual
nursing students on the U.S. and Mexico border.

Cummins Language Proficiency Model guided the study, which aimed to answer
whether the dimensions of language proficiency or language acculturation predicted self-
assessed language proficiency and academic success. The relationship between self-
assessed language proficiency and academic success were also explored.

The participants were recruited virtually from nursing schools along the U.S. and
Mexico border and completed the Language Experience and Proficiency Questionnaire
(LEAP-Q) and the English Language Acculturation Scale (ELAS). Two-open ended

questions were provided for the qualitative inquiry. Parametric statistical analyses were used to answer the quantitative questions and qualitative data were analyzed using content analysis.

Language proficiency dimensions predicted a single measure of self-assessed English proficiency ($p < .001$). No correlation was found between language proficiency and academic success. Qualitative data revealed themes such as support, communication, and academic resources for beneficial learning situations. Finances, time management, language barriers, and self-perception were identified as barriers to academic success.

Language proficiency did not predict academic success, but students who utilized both languages were academically successful. Border nursing students felt that bilingualism was a positive characteristic for nursing professionals.

Chapter One

The aim of this study is a better understanding of the role of bilingualism on academic success of nursing students who speak both English and Spanish and attend school along the United States (U.S.) and Mexico border.  Bilingual nursing students face different challenges than their colleagues who speak only English. The growing U.S. Hispanic population will be best served by health care providers who not only speak the Spanish language, but also understand the Hispanic culture of the southwest U.S. border from an emic cultural perspective.  To ensure an adequate supply of appropriate nurse caregivers, there must first be academic success of culturally similar nursing students.

**Background to the Problem**

The United States (U.S.) has experienced rapid growth in its' Hispanic population (U.S. Census Bureau, 2015). The U.S. Census Bureau (2015) reported a 17.4% Hispanic population in the year 2014, it is predicted that this population will increase to 29% of the total U.S. population by 2060. As a result, the health care system will require more culturally diverse health care providers to accommodate the community needs (Wehbe-Alamah & Fry, 2014). During the past 30 years, there has been an increase in Hispanic student enrollment in American colleges from 4% to 17% (Institute of International Education, 2016). The National League for Nursing (2014) reported an enrollment of 6.8% Hispanic heritage students in nursing schools in 2012; that increased to 8.1% in 2014, with a smaller percentage of these students graduating.

Many faculty members at educational institutions now find their classrooms filled with international students, many of whom speak English as a Second Language (ESL) or are bilingual. Bilingual students face unique challenges during their education, such as overcoming their inability to write, comprehend, and communicate in a different language from their native tongue (Malecha, Tart, & Junious, 2012). In addition, these students face difficulty becoming acculturated into the host country as well as into the educational system (Malecha et al., 2012; San Miguel, Townsend, & Waters, 2013). These challenges have led to higher attrition rates when compared to students who are native English speakers (Donnell, 2015; Hansen & Beaver, 2012).

According to McClimens, Brewster, and Lewis (2014), there has been a recent increase of culturally diverse populations in the U.S. With such an increase, there is a greater need for culturally competent nurses. Leininger (1997) recognized that nurses who can provide holistic care that is culturally congruent and competent are needed in order to improve the overall delivery of care. Duerksen (2013) identified a need for increased ethnic diversity as one of the major issues facing the discipline of nursing.

The Joint Commission (2010) focused on meeting language, culture, and health literacy needs to provide more effective and culturally competent care for the growing minority populations in the U.S. Because of the high demand for culturally sensitive health-care services, it is imperative that schools of nursing learn to help bilingual nursing students increase their opportunities for academic success. This will facilitate the

delivery of more culturally sensitive health-care among a growing minority population in the U.S.

The Texas Higher Education Coordinating Board (THECB, 2011) sponsored a study that sought to identify predictors of academic success among nursing students in Texas. Walker, Klotz, Martin et al. (2011) conducted the study across nine college campuses and surveyed 898 nursing students. Results from this study (Walker et al., 2011) found significant predictors of attrition, including the composite score on the Nursing Entrance Examination that included a reading component ($p = .0271$), and students' collective grades in a yearlong sequence of anatomy and physiology courses that required strong English language comprehension skills ($p = .005$). Donnell (2015) conducted a retrospective longitudinal correlational study examining the association of language and participation in reading comprehension programs for pre-licensure ESL nursing students in Texas. The study found a significant correlation between the use of reading comprehension programs and a lower attrition rate among this population ($p = .005$).

English proficiency and acculturation are important concepts to address in the ESL nursing student population. The use of cognitive academic language proficiency skills (CALP) based on Cummins' model (1983) has been analyzed in relation to academic success and provides information on the pattern of students' language acquisition required for ESL learners' success (Hansen & Beaver, 2012; Haim, 2014). Research suggests that students who feel better prepared in the use of language are

confident in communicating with others (Crawford & Candlin, 2013; Rogan & San Miguel, 2013).

By addressing academic success predictors for ESL nursing students, such as language proficiency, educators will be able to provide better educational interventions to ensure their students' success. Walker et al. (2011) suggested the need to collect standardized data among bilingual nursing students to address these issues. Therefore, the purpose of this mixed methodology research study is to examine the role of the dimensions of language proficiency (experience, proficiency, preference and acculturation) on academic success among bilingual undergraduate nursing students residing along the U.S. and Mexico border.

**Statement of the Problem**

Although the Hispanic nursing student enrollment has increased from 6.8% to 8.1% from 2012 to 2014, this group is still underrepresented among the nursing profession (National League for Nursing [NLN] Biennial Survey of School of Nursing, 2014). Hispanic nurses account for only 5.7% of U.S. nurses; this percentage is far less than the 15.7% of the general population (McMenamin, 2015). The NLN (2010) stated in the Annual Survey School of Nursing Academic Year 2009-2010 report, "By comparison with other racial-ethnic groups, Hispanics are dramatically underrepresented among nursing students" (p. 1).

A small amount of literature exists about bilingual nursing education. The bilingual population faces unique challenges during their education that have not been

addressed (Malecha et al., 2012). Challenges, such as the inability to overcome the language and acculturate into the host country (the U.S.) have led to higher attrition rates compared to students who are English speakers (Donnell, 2015; Hansen & Beaver, 2012). Understanding the role of language proficiency and academic success among the bilingual nursing student population can help educators develop strategies that can improve academic success.

## Purpose of the Study

The purpose of the study is to explore the role of language proficiency on academic success of U.S. and Mexico border bilingual nursing students. Four dimensions of language proficiency based on the Cummin's Language Proficiency Model are described. The study will explore whether a higher level of language proficiency has a negative or positive correlation to academic success. Additionally, the strength of the Language English Acquisition Proficiency Questionnaire (LEAP-Q) and English Language Acculturation Scale (ELAS) to predict academic success will be compared.

## Theoretical Framework

The theory used to conduct this study was the Cummins Language Proficiency Model (Appendix A). The model is a result of an analysis of research with students who were taught in a language different from the one spoken in the home. The model attempts to explain the "home-school" language shift, where the students tried to acquire the dominant language of the country; failure to acquire this leads to low academic achievement (Cummins, 1979). The model is based on two threshold levels: (1) the basic

interpersonal communication skills (BICS) and (2) cognitive academic language proficiency (CALP). Cummins explained that individuals whose language proficiency is low are at a higher risk for academic difficulties and poor academic performance. Those individuals that are linguistically competent, have a higher threshold of linguistic interaction, are proficiently "bilingual," able to immerse into the host culture, operate correctly, and tend to have higher academic performance.

The first threshold of the model is BICS and it encompasses the basic speaking skills acquired by an individual to communicate his/her ideas. This is developed as a result of maturation and plateaus during school years. BICS does not affect academic achievement since oral and written cognitive skills are not required like in CALP (Cummins, 1980). These cognitive skills are essential to function in an academic setting. The idea behind this concept is that ESL students who are not practicing their acquisition of language will fall behind compared to their other peers. BICS can only be developed through social interaction, this occurs through the day-to-day conversations at home and school. The students who have little opportunity to develop these skills at home will encounter more difficulty in academic endeavors (Cummins, Mirza, & Stille, 2012). The BICS is developed within two years of peer-appropriate conversational fluency (Cummins, 1999). It is important for individuals to practice their conversational English at home and at school in order successfully move to the next threshold.

Cognitive Academic Language Proficiency (CALP) is a more advanced way to communicate and includes the ability to relay abstract ideas. This was developed through

the academic experience and is related to academic success or failure (Cummins, 1980). Bilingual students that have greater opportunity to practice in home and school can increase their knowledge and comprehension skills which leads to a stronger development of CALP in the host language (Cummins et al., 2012). CALP, also known as language proficiency, is developed through the interaction from birth, but this one differentiates from BICS after the early stages of schooling as this is a reflection of the language acquired during their academic interaction (Cummins, 2008). Cummins et al. (2012) suggests that in order for an ESL student to develop academic language, it is important for him/her to be engaged in reading and writing at home and at school from the early stages of English acquisition.

Cummins' Language Proficiency model was used to guide this research study to examine the relationship between the dimensions of language proficiency and academic success among bilingual nursing students. The study aimed to understand human behavior towards a host culture, and language acquisition, in order to ensure increased rates of academic success in today's nursing educational system.

## Research Questions

The study aimed to answer the following research questions:

1) For bilingual nursing students, do language proficiency dimensions (experience, proficiency, preference and acculturation) predict a single measure of self-assessed language proficiency and academic success? Multiple regression analysis was used to determine the value of language proficiency dimensions for predicting self-assessed language proficiency and academic success.

2) For bilingual nursing students, does language acculturation predict self-assessed language proficiency and academic success? Simple regression analysis was used to determine the value of language acculturation for prediction of self-assessed language proficiency and academic success.

3) For bilingual nursing students, is there a relationship between self-assessed language proficiency and academic success? Correlation was used to examine the relationship between self-assessed language proficiency and academic success.

4) For bilingual nursing students, does assessing multiple dimensions (experience, proficiency, preference and acculturation) of language proficiency provide a better predictor of academic success than the English Language Acculturation Scale? The amount of variance in academic success explained by the dimensions of the LEAP-Q and the ELAS was compared.

5) What language learning situations and modalities do bilingual nursing students find most beneficial to their academic success? Content analysis was used to identify themes from responses to an open-ended question.

6) What barriers to academic success are most commonly encountered by bilingual nursing students? Content analysis was used to identify themes from responses to an open-ended question.

**Overview of the Design of the Study**

The study examined the influence of language proficiency and the dimensions inherent to language learning in the academic success of ESL nursing students. The study employed a mixed methods approach. A non-experimental descriptive correlational research design was used for the quantitative portion of this study. This design allowed the correlation and prediction of an outcome by a "linear combination of two or more predictor variables" (Portney & Watkins, 2015, p. 687). Open ended questions were included to expand and enrich the quantitative data. These provided a more complete picture of the students' perception of the influence of language proficiency on their academic success (Quinn Patton, 2015).

Participants provided demographic information, including age, gender, type of nursing program attending, list of languages known in the order of dominance, years of formal education, highest education level, date of immigration to the U.S., any sensory deficits and self-reported grade point average (GPA). In addition, participants received two surveys, the Language Experience and Proficiency Questionnaire (LEAP-Q) and the

English Language Acculturation Scale (ELAS), to measure the dimensions of language proficiency and the two open ended questions.

The study focused on answering the aforementioned research questions. Participants were enrolled following an invitational email to deans or program coordinators/directors of nursing programs along the U.S. and Mexico border. Deans/directors then extended the invitation to participate in the study to nursing students. The email included a link to a *Qualtrics (Provo, UT)* survey, an online survey program used by The University of Texas at Tyler (UT Tyler). Prior to answering the survey, participants received an online informed consent form. No identifiable data were obtained. Each participant had the opportunity to complete the LEAP-Q and ELAS instruments. In addition, participants were able to provide content information about situation/environments and modalities that they found beneficial to their academic success and barriers to their academic experience.

## Definition of Terms

### Bilingual

The definition of bilingual is "the use of two languages, one of which is English, as a medium of instruction" (Troike, 1981, p. 498). In bilingual education, the students can use both their native language and English. For the purpose of this study, bilingual students, English and Spanish enrolled in a U.S. and Mexico border undergraduate nursing program were appropriate for the study sample.

**Academic Success**

Academic success is conceptually defined as the fulfillment of all course requirements in the projected time by utilizing specialized cognitive and linguistic abilities required to perform the academic-related tasks (Haim, 2014). The ESL nursing students have the language abilities to communicate the necessary information to be academically successful. Operationally, academic success is defined as the overall self-reported grade point average (GPA) on a 0 to 4.0 scale that demonstrates successful academic achievement in prior classes. The GPA should demonstrate the successful completion of all course requirements at this point in time (Appendix B, Table 1).

**Language Proficiency**

Language proficiency is the development of basic and cognitive skills that allows an individual to manipulate and interpret language in a cognitive and demanding way (Cummins, 1983). The Language Experience and Proficiency Questionnaire (LEAP-Q; Appendix C) will be utilized to measure individual language proficiency. Language proficiency has been customarily measured by the age when one becomes fluent speaking and reading in a language. English language proficiency is assessed using item number 15 on the *Qualtrics* version of the LEAP-Q (Appendix D).

In addition, LEAP-Q measures the additional dimensions of language proficiency including preference, experience, and acculturation (Marian, Blumenfeld, & Kaushanskay, 2007; Appendix B, Table1). English Language Acculturation Scale

(ELAS; Appendix E) was utilized as a second measure of English proficiency. The instrument consists of 5-items participants self-rate their use of the non-English language and English language, the item number 24 of *Qualtrics* survey was used (Salamonson, Attwood, Everett, Weaver, & Glew, 2013; Appendix D).

**Language Preference**

Language preference is defined as an individual's decision for language interactions with others (Stevenson, 2015). Operationally, preference was measured by the mean score of items number 6 and 7 the *Qualtrics* survey (Appendix D). These items gave the opportunity for the participants to give a percentage of English and Spanish usage.

**Acculturation**

Acculturation is the cultural modification of an individual, group or people adapting or borrowing traits from another culture. It can also be the merging of cultures as a result of prolonged contact (Merriam-Webster, 2015). Acculturation was measured operationally using self-rated cultural identification on the LEAP-Q. Item number 8 of the *Qualtrics* survey was used (Appendix D). Rating responses ranged from *0 (no* identification) to *10 (completed identification)*, highest acculturation rate was utilized for the analysis.

**Language Experience**

The language experience definition is an individual's language history and behavioral performance (Marian et al., 2007). Operationally, the participants were able to

self-rate the list of languages with percentage of time exposed to each language, Spanish and English, using the LEAP-Q instrument. Item number 5 of the *Qualtrics* survey was used (Appendix D). In addition, participants were able to list the years of environmental exposure to each language and rated the contribution of factors in learning both languages, mean scores of items number 16 and 20 of the *Qualtrics* survey were used (Appendix D).

**Self-Assessed Proficiency**

Self-assessed proficiency is an indicator of language proficiency usage (Salamonson et al., 2013). Operationally, self-assessed proficiency was assessed by self-reported level of proficiency in speaking, understanding and reading from the LEAP-Q instrument. Participants rated their level of proficiency on a scale *0 (none)* to *10 (perfect)*. Mean score of item number 17 of the *Qualtrics* survey was used for self-assessed English proficiency (Appendix D).

**Language Acculturation**

Language acculturation is the ability of the individuals to speak, read, think, and interact in English (Salamonson et al., 2013). The ELAS (Appendix E) was utilized to measure language acculturation. Participants rated language acculturation on a 5-point Likert scale from *1(Only non-English)* to *5(Only English)*. The sum of item number 24 of the *Qualtrics* survey was used (Appendix D).

## Organization of Dissertation

This dissertation was organized in five-chapter format. Chapter one provided an introduction to the research study by providing background information and significance. In addition, it provides an overview of the theoretical framework utilized and the design of the study. Chapter two provides a summary of the literature review. Chapter three is a discussion of the overall design of the mix methodology study by giving an overview of the purpose, research questions, and procedures/methods. Chapter four provides the results of both quantitative and qualitative data analysis, and chapter five is a discussion of the significance, strengths, limitations, and the future research needs.

The aim of this mixed methodology study is a better understanding of bilingualism and academic success of nursing students who speak both English and Spanish and attend school along the U.S. and Mexico border. The theoretical framework used to conduct this study was Cummins Language Proficiency Model. Bilingual students were recruited along the U.S. and Mexico border through invitational email containing a link for the *Qualtrics* survey. Quantitative and qualitative data were obtained and analyzed for the purpose of this study.

Chapter Two

The following section will review the existing literature related to language proficiency and academic success in the bilingual population. This section will review academic predictors in nursing education to those related to ESL nursing students. It will continue by reviewing the different dimensions of language proficiency such as acculturation, language proficiency, language preference, and language experiences and how these relate to bilingualism and academic success.

In the past decade, nursing educators have been trying to improve academic success among nursing students by reviewing concepts such as pre-nursing academic courses, standardized exams, and other psychological concepts (Herrera, 2013; Kowitlawakul, Brenkus, & Dugan, 2012; Peterson, 2009; Wolkowitz & Keeley, 2010). Presently, there is limited information available on academic predictors associated with language proficiency in nursing education. Much of the research literature surrounding bilingualism in nursing education is ten years or older, but these are essential when discussing this topic.

A search of the literature reveals one of the earliest reports on ESL by Goldberger (1919) for the Bureau of Education, Department of the Interior, *Teaching English to the Foreign Born: A Teacher's Handbook*.  This early work was developed to help teachers. Sixty-four years later, Cummins (1983) reviewed how ESL students overcome language proficiency thresholds.  Berry (1997) was another major contributor linking language to

acculturation and ESL education. These authors led much of the early discussion related to the challenges of ESL students and academic success.

## Academic Predictors for Nursing Education

Nursing education research has concentrated on reviewing the academic predictor concepts that could help nursing students to be successful. Different assumptions have been made regarding the prediction of academic success, such as requisite skills for the program (Kowitlawakul et al., 2012; Herrera, 2013), course grades (Kowitlawakul et al., 2012), and mastery of nursing content (Wolkowitz & Kelley, 2010). Moseley and Mead (2008) indicated that students who do not fulfill these requirements might not be able to complete their courses and graduate in the time projected. Research also revealed that pre-admission standardized tests, such as the Assessment Technologies Institute (ATI) Test of Essential Academic Skills® (TEAS), the Nursing Entrance Examination (NET), and past academic performance are high predictors of academic success (Herrera, 2013; Kowitlawakul et al., 2012; Peterson, 2009; Wolkowitz & Keeley, 2010) These are unique contributors in understanding academic success relevant to both native and non-native English-speaking students.

## Academic Success Predictors for ESL Nursing Students

ESL nursing students have different needs from those who are native English speakers. A literature review revealed that language deficiency is a significant barrier for ESL nursing students (Crawford & Candlin, 2013; Lujan, 2008; Olson, 2012; Scheele, Pruitt, Johnson, & Yu, 2011). In addition, research has suggested the use of language

improvement skills, such as ESL tutorial programs (Crawford & Candlin, 2013), reading programs (Donnell, 2015), and educational skills that help students adapt to the linguistic and cultural differences (Lujan, 2008) in order to foster students' success. Another factor that plays an important role in ESL nursing student academic success is the academic network with support (knowledge tips, peer-to-peer and faculty-student mentoring programs) from advisors, instructors and professors. Authors revealed that students who have an academic network have higher course performance (Torregosa, Ynalvez, Schiffman, & Morin, 2015). The development of a more culturally aware, sensitive, and competent ESL educational environment can assist in fulfilling students' needs (Crawford & Candlin, 2013; Lujan, 2008; Olson, 2012; Scheele et al., 2011).

**Acculturation, Bilingualism, and Academic Success**

Acculturation is "a cultural modification of an individual, group, or people by adapting or borrowing traits from another culture; also, it is the merging of cultures as a result of prolonged contact" (Merriam-Webster, 2015, para. 1). Researchers found that students with positive psychological indicators of acculturation, such as acceptance to the community and assimilation, are able to complete their academics (Cerezo & Chang, 2013; Telbis, Helgeson, & Kingsbury, 2014; Torregosa et al., 2015). In addition, English-language acculturation, familiarization with the English-language, can have a positive relationship with students' academic success (Salamonson, Everett, Koch, Andrew, & Davidson, 2008). ESL students' cultural differences have an impact on their educational experience which can lead to negative psychological symptoms such as loneliness,

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isolation, alienation, helplessness, disappointment, and subsequent use of separation or marginalization acculturation strategies (Aichberger et al., 2015; Smith & Khawja, 2011). Perez (2011) explored the relationship between language and the emotional well-being of ESL students. The author revealed that language is a key component when interacting with a host culture. How well ESL students communicate has a tremendous effect on their well-being as they can interact more effectively at home than when interacting in their educational environment.

Berry's model of acculturation (1997) was used in research studies to explore the effect the acculturation process has on an individual's self-esteem and coping strategies (Fox, Merz, Solorzano, & Roesch, 2013), bicultural and separation behaviors (Schwartz & Zamboanga, 2008), student's adaptation to academic life (Castro Solano, 2012) and the use of the different strategies to integrate into a new culture (Zhou, Frey, & Bang, 2011). These studies explored the psychological changes participants experienced when going through the acculturation process. Fox and colleagues (2013) utilized the Stephenson Multigroup Acculturation Scale (SMAS) and other tools to explore the four-acculturation strategies used among 227 ethnic minority college students. The authors found that integration and assimilation were the two strategies most used by this population. The use of these strategies helped students to experience lower levels of depression and anxiety, which led to them having greater self-esteem and effective coping when interacting with their new environment.

This highlights the importance of using acculturation strategies when interacting with a new culture. It is important for individuals to feel part of their new culture in order to function better and meet their new cultural needs. Another study was conducted to analyze the empirical validity of Berry's model of acculturation (Schwartz & Zamboanga, 2008). This research examined 436 Hispanic students enrolled in an introductory psychology course. The study explored the cultural orientation categories and how these were applied to their cultural practices. The main acculturation strategies that emerged were separation, assimilation and integration when interacting with a new culture (Schwartz & Zamboanga, 2008). The study results support Berry's model by empirically exploring the acculturation strategies used among this group. The author further explains that individuals who apply these strategies may accomplish full biculturalism, which can provide the opportunity to interact in both cultures, Hispanic, and American.

**Language Proficiency, Bilingualism, and Academic Success**

Language proficiency has been shown to affect academic performance among students whose native language is not the same as that in their academic environment (Green, 2015). Bialystok (2017) indicates that in order for a bilingual individual to achieve linguistic proficiency, he/she must have control in both areas, native language and second language. English proficiency is usually defined as English well developed in three areas including grammar, vocabulary, and pronunciation (Gee, Walsemann, & Takeuchi, 2010). Cognitive academic language proficiency is comprised of two domains:

basic interpersonal communications skills (BICS) and cognitive academic language proficiency (CALP), both of which are necessary for academic success (Haim, 2014: Hansen & Beaver, 2012). The literature reveals that the English language skill is linked to academic success among international students (Banjong, 2015; Haim, 2014; Martirosyan, Hwang, & Reubenson, 2015; Salamonson et al., 2013). Martirosyan and colleagues (2015) found that difficulties in reading, listening, and writing negatively impacted ESL students' grade point average (GPA) and hindered success in their academic career, $F(6,47) = 3.89$, $p < 0.05$. The ESL student's ability to communicate is an essential component when addressing ESL nursing education. When students can effectively communicate, it provides them with the opportunity to interact with peers and later with other healthcare providers (Green Ryan & Dogbery, 2012). Different research studies have been conducted to find interventions that can help ESL nursing students to have better academic performance. The fostering of language acquisition such as the use of a vocabulary coach has been shown to help ESL students to improve confidence, leading to better academic performance (Green Ryan & Dogbey, 2012; Rogan & San Miguel, 2013; Suliman & Tadros, 2011; Telbis et al., 2014). In addition, social support during interaction with the host culture has shown to be beneficial to the ESL nursing experience. This not only improves interaction with the host culture, but in addition, impacts academic performance (Suliman & Tadros, 2011; Telbis et al., 2014; Torregosa et al., 2015).

Cummins' Language Proficiency model (1979) has been used to analyze the role of language in the cognitive process of ESL students. McGhie (2007) analyzed the academic experience among ESL students by utilizing the Cummins' model. The researcher found that the language acquisition has an impact on students' emotional and social interactions. The author suggests that students who are able to communicate effectively have a positive interaction with their host culture. It is important to understand the role of language in the academic setting. Bilingual students who have better communication abilities can be successful in their academic careers. Another study used the Cummins model to analyze the reading comprehension on fluency passages for ESL students. The researcher found that those students that had a higher reading comprehension were more fluent in their language abilities (Baker, Stoolmiller, Good, & Baker, 2011). Comprehension is a key component, especially in nursing education because this profession is based on interactions with other health-care providers in order to provide comprehensive care to patients. Cummins (1983) proposed that students are able to develop cognitive/academic language proficiency (CALP) if this is first developed in their native language. Limited language proficiency can have a negative effect on ESL students during their cognitive development, which can weaken their language abilities (Cummins et al., 2012). The language is enhanced when the linguistic functions are placed into practice. Educators need to continually emphasize the importance of the use of not only students' their heritage language, but also the one acquired to improve their proficiency. When working with ESL students, educators focus on factors such as

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pronunciation, fluency, and grammar without taking into consideration the role of language as a cognitive tool. These abilities allow students to transfer concepts necessary to be academically successful (Bylund, 2011). Cummins' language acquisition framework provides the basis to explore the role of language proficiency in ESL nursing students' academic success.

**Language Preference, Bilingualism, and Academic Success**

When bilingual individuals interact with others and their environment, they have to make a decision about what language to use in the interaction. This is known as language preference (Stevenson, 2015). The relationship between bilingual language preference and bilingual performance has been explored. Brenneman, Morris, and Israelain (2007) indicated, "Language preference is not static it is affected by the fluid and change in the individual's environment" (p. 172). They added that language preference is usually viewed as code switching in a bilingual individual's brain and is triggered by the characteristics of the audience. Brenneman et al. (2007) developed a study with 96 bilingual Latino children (Spanish- and English-speaking) to find the participants' language preference by the use of an adapted self-rated language questionnaire. The authors revealed that language preference is affected by the family situations, using language with mother, father, grandparents, and others' preferences. Also, this can be affected by their interaction with friends and the language listened to on the radio, television, videos, compact discs, books, comics, and magazines. The language preference can impact reading skills among bilingual individuals (Brenneman et al.,

2007). A study done with 1,639 Asian immigrants looked at language preference related to their health care interactions. The study found that only 11.3% of participants think only in English all the time (Gee, Walsemann, & Takeuchi, 2010). The authors found a positive association and years of education with the use of English language preference. Stevenson (2015) conducted a qualitative study with 15 bilingual students, 80% of the students had an advanced level of English proficiency and preferred to use English. The author found that participants used English 72% of the time during class sessions; due to the fact, their teacher interacted mostly in English. Also, the author revealed that students were aware that other students preferred speaking English as a necessity of improving English to increase their academic success and further their educational opportunities. The bilingual students were aware of the importance of learning English in order to feel comfortable interacting with others. Language preference can have a positive impact on students' bilingualism and also other educational efforts. **Language Experience, Bilingualism, and Academic Success**

Bilingual students experience more demands than monolingual students (Bialystok, 2017). Language acquisition has been correlated to factors such as age of acquisition, mode of acquisition, length of acquisition, and the use of the language (Kaushanskaya, Yoo, & Marian, 2011). A study performed with 53 bilingual students showed a positive correlation in the age of native language acquisition and vocabulary knowledge. Bilingual individuals that obtain English language skills at a later age have better expressive vocabulary skills in their native language (Kaushanskaya et al., 2011).

Bilingual students need to get acculturated to their new educational environment. Liu (2011) and Wei Yeoh & Terry (2013) explored international students' experience in their new environment. The authors found that students had "language shock" when they did not have the required language abilities. In addition, cultural differences affect language experiences, learning and understanding. The language shock provides anxiety, which can decrease social interactions. Liu (2011) found that for bilingual students to have successful learning activities in the new language environment, they need to make every effort to have positive experiences with teachers and classmates. Therefore, language experience is an important component in bilingual education and students need to have positive learning experiences in order to enhance their language skills.

**Summary of the Chapter**

Chapter two provided a concise literature review. The chapter introduced the general knowledge of academic predictors in nursing education and then moved to focused on academic predictors among ESL nursing education. The chapter also reviewed each language proficiency dimension and how they relate to bilingualism and academic success.

Literature review revealed multiple research studies examining academic predictors of nursing students' success. There is a gap in the literature related to academic predictors in nursing education of ESL students. English Second Language nursing students must overcome language, culture and educational challenges in order to be academically successful. These challenges have not been addressed previously in

literature. Because of the limited information in literature about ESL nursing education academic predictors, the purpose of this mix methodology study is to find new information that can be helpful for nursing educators to increase academic success among this population.

Chapter Three

This chapter includes a discussion of the study methods including study purpose, population and sample, protection of human subjects, instruments, data collection, and data analysis. Reliability and validity of instruments, data analysis and limitations will be discussed in detail.

## Purpose of the Study

The purpose of the study was to explore the role of language proficiency in academic success of bilingual nursing students residing along the U.S. and Mexico border. Language proficiency dimensions based on Cummins' Language Proficiency model (Appendix A) were examined and the relationship between language proficiency and academic success were explored. Additionally, efficacy of the Language Experience and Proficiency Questionnaire (LEAP-Q; Appendix C) and English Language Acculturation Scale (ELAS; Appendix E) were compared.

## Design of the Study

A mixed methods design was used to examine the relationship between the study variables. A non-experimental descriptive correlational research design with an extension to simple and multiple regression was combined with a qualitative descriptive approach. This design allowed the correlation and prediction of the outcomes by a "linear combination of two or more predictor variables" (Portney & Watkins, 2015, p. 687). Content analysis was used to interpret the meaning of participant's written responses

from the two-open ended questions was used for the qualitative section (Quinn Patton, 2015).

## Methods

**Study Population and Sample**

A convenience sample of bilingual nursing students was recruited through nursing programs at universities and colleges along the U.S. and Mexico border from April to July 2017. The nursing students received an email (Appendix F) distributed by the dean or program coordinator/director that extended an invitation to participate in the study and a link that directed them to the study information, informed consent, and the survey. Participants met the following eligibility criteria: (1) English as a second language; (2) ability to read, write, and speak English; (3) males or females ages 18 and over; (4) enrolled in an undergraduate nursing program in a college or university along the U.S. and Mexico border; and (5) have access to a computer and the internet to complete the online survey.

Participants provided demographic information, including age, gender, type of nursing program attending, list of languages known in the order of dominance, years of formal education, highest education level obtained, date of immigration to the U.S., any sensory deficits, and self-reported (GPA). In addition, participants completed two surveys, the Language Experience and Proficiency Questionnaire (LEAP-Q; Appendix C) and English Language Acculturation Scale (ELAS; Appendix E), to measure the

dimensions of language proficiency and responded to two open-ended questions related to barriers and to facilitators for success in nursing school.

A power analysis for linear regression using G* Power (Erdfelder, Faul, & Buchner, 1996) was used to determine the size of the convenience sample needed for this study. A total of 75 participants were needed to meet power and effect size goals. Oversampling provided protection for incomplete data and ineligible participation to meet the goals of a power of .80, an alpha of .05 and a medium effect size of $f^2 = .15$. These goals are based on previous research studies using factors of academic success among ESL nursing students in Texas (Donnell, 2015) and English-language proficiency in the performance of Mexican-American baccalaureate nursing students (Torregosa et al., 2015).

**Protection of Human Subjects/Informed Consent**

The participants received an invitational email (Appendix F) with a link to a *Qualtrics* survey, an online survey program used by The University of Texas at Tyler. Prior to answering the survey, participants reviewed an online informed consent form (Appendix G). Participants were informed of the purpose of research, methods of data collection, commitment expectation, potential risks and benefits, protection of personal information, the right to refuse to participate as well the researcher's contact information. Completion and submission of the survey served as the informed consent. The study proposal was approved by The University of Texas at Tyler (UT Tyler) Institutional Review Board (IRB; Appendix H) on April 23rd, 2017.

The survey was accessed via *Qualtrics* where data was stored. *Qualtrics* is a

password-protected online survey program used by The University of Texas at Tyler.

Only the researcher and the dissertation committee chair have access to the anonymous

raw data.  All downloaded data were stripped of IP addresses and housed on a database

accessible only to the researcher and dissertation chair. No participant risks were

reported.

**Measures/Instruments**

**Language Experience and Proficiency Questionnaire (LEAP-Q)**. The Language

Experience and Proficiency Questionnaire (LEAP-Q; Appendix C) captures important

contributors to language status such as language competence, age of language

acquisition, mode of language acquisition, prior language exposure and current language

used (Marian et al., 2007). The LEAP-Q allows the participants to rate items from *0* to *10*

(*0= not a contributor*; *10= most important contributor*) for their proficiency in speaking,

listening, reading, and writing. These proficiency rates were analyzed separately to yield

predicted information for different linguistic skills. In addition, the instrument targeted

the preferences in terms of text available in all languages instead of an overall preferred

language. Language acquisition and experience were included because it has shown a

connection to language learning, influences the rating of language domain, and predicts

performance on behavioral tasks. Finally, the instrument assessed the level of cultural

identity for each culture recognized by the participant (Marian et al., 2007).

LEAP-Q analyzed the four age-related acquisition measures for each language spoken such as age of initial language learning, age of attained fluency, age of initial reading, and age of attained reading fluency. The instrument obtained information about the acquisition mode in terms of learning environment and in terms of extent to which these affect language acquisition. Finally, the instrument explored the prior and current exposure of language in four different environments: in a country, at school, at work and at home. This helped the researcher to have a better understanding of their exposure to their languages across the different settings with family and friends, exposure during reading, watching television and self-instruction.

The instrument was tested for validity with 52 multilingual individuals from Northwestern University. Factor analysis was conducted to cluster the questions with dimensions of bilingual similarity. Cronbach's alpha was run for each factor to view the consistency and validity. The LEAP-Q showed a Cronbach's alpha of .85 for the first language acquisition and .92 for the second language acquisition. Marian et al. (2007) indicated that this instrument presents consistency within each factor, which shows validity and reliability when assessing the dimensions of language proficiency. The Cronbach's alphas for language dimensions ranged from .24 to .80 respectively (Marian et al., 2007).

LEAP-Q was used in this research study to measure the dimensions of language proficiency (experience, preference, acculturation and proficiency). Table 2 in Chapter 4 summarizes the survey items used to measure the dimensions of language proficiency and

how they were quantified for this study. Internal consistency reliability for each dimension tested in this study is also included in the table.

**English Language Acculturation Scale (ELAS).** The English Language Acculturation Scale (ELAS; Appendix E), which is a brief self-reported instrument, was used as a second measure of language proficiency. Participants are able to rate themselves on 5-items related to language use (speak, read, language spoken at home, thinking, and interaction with friends). The 5-items can be rated as *1(only non-English language*(s) to *5(Only English)* (Salamonson et al., 2013).

The instrument was utilized to find if there is a link between academic success and language proficiency. It was tested with a total of 1,400 students in 2010 and 2011 (Salamonson et al., 2013). The instrument was tested for internal consistency providing a Cronbach's alpha of .94 with corrected item correlation between .84 to .89. The author found a positive correlation between the length of stay in the host-culture with the ELAS scores $p <0.001$. The ELAS total score was the sum of the five-items of English language acculturation. Internal consistency reliability was calculated for the ELAS and is also reported in Table 2 located in Chapter 4.

**Data Collection**

The participants were recruited by contacting the deans and/or program coordinators of the U.S. and Mexico border undergraduate nursing schools by phone call and/or email. Twenty-two nursing deans and program coordinators were identified and contacted. The nursing programs that were contacted included Diploma, Licensed

Vocational Nurse (LVN), Licensed Practical Nurse (LPN), Associate's in Nursing Degree (ADN), Bachelor's of Science in Nursing Degree (BSN), LVN to BSN, and RN to BSN. Deans and/or program coordinators were encouraged to share the *Qualtrics* link through different online medias including but not limited to school email, Blackboard, Twitter, Facebook, and Google Plus.

Data collection was conducted virtually through UT Tyler's *Qualtrics* online program in a three-month period from April through July 2017. Participants provided demographic information, a self-reported grade point average (GPA), and responses to the LEAP-Q and ELAS. The virtual survey took on average 45 minutes to complete.

## Data Analysis

### Quantitative Analysis

After administration of the survey comprised of demographic questions, LEAP-Q and the ELAS, data were tabulated to obtain scores for the dimensions of language proficiency (proficiency, preference, experience, and acculturation). Statistical analysis was completed using SPSS version 24.0 (IBM Corp., Armonk, NY, 2016) software program. Descriptive statistics were computed from the demographic information obtained. Data were reviewed for missing information, those missing critical data were eliminated from the analysis. Data were reviewed for normal distribution, those values detected as extreme outliers reviewed and two were eliminated. A 95% confidence interval with alpha of 0.05 was used for statistical significance. Quantitative research questions were analyzed using the following parametric statistical tests.

1) For bilingual nursing students, do language proficiency dimensions (experience, proficiency, preference, and acculturation) predict a single measure of self-assessed language proficiency and academic success? Multiple regression analysis was used to determine the value of language proficiency dimensions for predicting self-assessed language proficiency and academic success.

2) For bilingual nursing students, does language acculturation predict self-assessed language proficiency and academic success? Simple regression analysis was used to determine the value of language acculturation for prediction of self-assessed language proficiency and academic success.

3) For bilingual nursing students, is there a relationship between self-assessed language proficiency and academic success? Correlation was used to examine the relationship between self-assessed language proficiency and academic success.

4) For bilingual nursing students, does assessing multiple dimensions (experience, proficiency, preference and acculturation) of language proficiency provide a better predictor of academic success than the English Language Acculturation Scale? The amount of variance in academic success explained by the dimensions of the LEAP-Q and the ELAS was compared.

**Qualitative Analysis**

Content analysis is one of the qualitative approaches used to extract coding categories derived directly from the data (Bengtsson, 2016). With this approach, the researcher was able to reduce the amount of text collected into groups of categories

together and, thus, have a better understanding of the research information (Bengtsson, 2016). This research study aimed to find what modalities help bilingual students achieve academic success. The principal investigator coded the obtained data from the following open-ended questions:

1) What language learning situations and modalities do bilingual nursing students find most beneficial to their academic success? Content analysis was used to identify themes from responses to an open-ended question.

2) What barriers to academic success are most commonly encountered by bilingual nursing students? Content analysis was used to identify themes from responses to an open-ended question.

## Procedures to Enhance Control and Rigor

### Quantitative Control Measures

In order to increase heterogeneity of the sample ESL nursing students from different types of nursing programs along the U. S.-Mexico border were included. The aforementioned inclusion criteria were used during research recruitment. Students that met the inclusion criteria were included in the statistical analysis. This provided a more accurate presentation of the target population.

A priori sample size was calculated using G*power. A total of 171 participants answered the survey meeting the oversampling criteria, 101 surveys met all the data analysis requirements. The sample of this research study represents the U.S. and Mexico border nursing student population.

Participants were provided with instructions prior to responding to the survey items. This minimized incomplete surveys.  Only completed surveys were used in the final analysis, minimizing errors in the statistical analysis. To the extent possible, demographic data for completers and non-completers were compared.

**Qualitative Procedures to Enhance Rigor**

Qualitative research has, as a purpose, to make sense and recognize patterns in a group of words in order to give a picture of a topic without affecting the quality of the analysis (Leung, 2015). This research can be assessed for validity and reliability of the text. According to Leung (2015) validity is "appropriateness of the tools, process and data" (p. 3). This was obtained from the two open-ended questions given to the students from the developed instrument. The data document then was read word by word to identify codes, categories and themes. Themes such as support, communication and education resources were identified and validated for the facilitators of academic success. In order to ensure rigor of the procedure, the principal investigator first read the document to identify initial topics. This was later reviewed by two qualitative experts to ensure codes, categories, and themes were identified correctly. This same process was followed to identify the barriers ESL nursing students in the border encounter. Reliability is the ability to replicate the process of obtaining the data as well results (Leung, 2015). In order for future researchers to duplicate the qualitative methods, the researcher explained how qualitative data were analyzed and results obtained in chapter four.

## Summary of Chapter

The chapter provided an overview of the research design and methods, sampling procedures, data collection, analysis and procedures to enhance control and rigor. The quantitative control of measures and qualitative procedure to enhance rigor pre-analysis management were explained at the end of the chapter.

Chapter Four

This chapter focuses on the quantitative and qualitative analysis of data collected for this study. The chapter provides an overview of the participants involved in the study. The findings from the proposed quantitative and qualitative research questions are presented. Finally, integration of quantitative and qualitative findings are discussed.

**Research Participants**

For this research study, a total of twenty-two nursing program deans or program coordinators were contacted across the U.S. and Mexico border. The deans and program coordinators were asked to share the survey information with students in their nursing programs. A total of 171 anonymous surveys were obtained through the *Qualtrics* program, 101 surveys met all the data analysis requirements. Geographical distribution of the survey responses can be seen in Figure A. The participants are described in greater detail in their respective sections below.



Figure 1. U.S. and Mexico Border Participants Distribution

**Bilingual Nursing Student Participants**

Demographic data collected to describe the sample were analyzed using descriptive statistics. From the 171 data entries, only 101 were utilized for the data analysis. A chi-square test was conducted to examine differences between the completed surveys versus the non-completed surveys; no significant differences were reported for gender ($p = .89$), dominant language ($p = .50$), or native language ($p = .24$). Females compromised 80% of the sample participants. The mean age of the participants was $\bar{X} = 27.4$, $SD = 7.39$ years of age, minimum of 18 years old with a maximum of 52 years of age. An independent samples $t$-test was conducted to explore if there was a significant difference in age for those who completed the surveys versus those who did not complete the survey. No significant differences were found, $p = .80$. Students participating in the study came from different educational backgrounds, the majority had some college or a college degree, which comprised 81% of the sample ($n = 83$). English language was identified as dominant language by 61.4% ($n = 62$) with 75.2% ($n = 76$) stating English was their native language. Students participated from different types of nursing programs (see Table A1). In terms of cultural identification, 79% identified themselves as belonging to Hispanic, Mexican-American, or Mexican cultural groups, compared to 21% of participants identifying primarily with the American culture. Bilingual nursing students reported their age when they acquired the English language, with a mean age of language acquisition was $\bar{X} = 6.12$, $SD = 5.19$ years of age. In addition, participants reported the age of language proficiency with a mean age $\bar{X} = 9.67$, $SD = 6.46$ years of

age. In terms of sensory deficits, 12% of the participants reported visual problems, no other sensory deficiencies were reported.

Table 1. *Demographic Profile* (*N*=101)

|  | | *N* | % |
|---|---|---|---|
| **Gender** | | | |
| | Female | 81 | 80.20% |
| | Male | 20 | 19.80% |
| **Dominant Language** | | | |
| | Spanish | 39 | 38.60% |
| | English | 62 | 61.40% |
| **Native Language** | | | |
| | Spanish | 25 | 24.80% |
| | English | 76 | 75.20% |
| **Type of Nursing Program** | | | |
| | Licensed Vocational Nurse | 11 | 10.90% |
| | Associates in Nursing Degree | 54 | 53.50% |
| | LVN to ADN | 11 | 10.90% |
| | Bachelor Nursing Degree (BSN) | 21 | 20.80% |
| | RN to BSN | 4 | 4.00% |
| **Highest Level of Education Prior to Nursing School** | | | |
| | Less than High School | 2 | 2% |
| | High School | 4 | 4% |
| | Professional Training | 3 | 3% |
| | Some College | 31 | 30.70% |
| | College | 52 | 51.50% |
| | Some Graduate School | 1 | 1% |
| | Masters | 1 | 1% |
| | Other | 7 | 6.90% |

| Primary Cultural Identification | | |
|---|---|---|
| American | 21 | 20.80% |
| Hispanic | 22 | 21.80% |
| Mexican American | 33 | 31.70% |
| Mexican | 25 | 24.80% |

## Assumptions for Parametric Analysis

Variables used in the study were appropriate for regression and these were either continuous or dichotomized. The sum of total scores were obtained for English language acculturation and exposure to English and Spanish. Mean scores were obtained for self-assessed proficiency in English and Spanish, proficiency of English and Spanish and preference of English and Spanish. GPA was obtained from a single item measured on a scale of 0 to 4. The strongest acculturation was identified and coded as American or other (including Hispanic, Mexican and Mexican-American). Detailed information on these variables can be found on Table 2.

Data were tested for the assumption of normality, collinearity and bias. Study results met the appropriate test assumptions with the exception of homoscedasticity. Visualization of the scatter plots revealed a funnel shape as opposed to random dispersion. To account for potential violation of the assumption of homoscedasticity in the statistically significant regression, the bootstrap procedure was performed to increase confidence in the results and allow for population generalization.

Table 2.  *Variables Summary*

| Variables | *Qualtrics* | Scoring | Cronbach's Alpha | Mean | SD |
|---|---|---|---|---|---|
| ELAS | Q 24 | Likert scale (1 – 5) sum of 5 items | .84 | 16.59 | 3.82 |
| Current GPA | Q 27 | Single item, scale of 0 to 4 | | 3.42 | .30 |
| Self-assessed proficiency English | Q 17 (0 – 10 scale) | Mean of three items (On scale from zero to ten, please select your level of proficiency in speaking, understanding and reading English language) | .90 | 8.90 | 1.31 |
| Self-assessed proficiency Spanish | Q 21 (0 – 10 scale) | Mean of three items On scale from zero to ten, please select your level of proficiency in speaking, understanding and reading Spanish language) | .90 | 8.36 | 1.78 |
| Experience English | Q 16 (converted to months) | Mean number of months for three items | .87 | 222.97 | 125.93 |
| Experience Spanish | Q 20 (converted to months) | Mean number of months for three items | .86 | 228.01 | 120.71 |
| Proficiency English | Q 15 (age fluent) | Mean age for two items | 1.00 | 9.67 | 6.46 |
| Proficiency Spanish | Q 19 (age fluent) | Mean age for two items | .73 | 8.18 | 1.97 |
| Preference English | Q 6 & 7 | Mean % of time English for 2 items | .74 | 65.23 | 23.62 |
| Preference Spanish | Q 6 & 7 | Mean % of time Spanish for 2 items | .78 | 34.72 | 23.99 |
| Exposure English | Q 18 (0 – 10 scale) | Sum of 6 items | .74 | 41.80 | 11.56 |
| Exposure Spanish | Q 22 (0 – 10 scale) | Sum of 6 items | .81 | 36.04 | 11.55 |
| | | | | F | % |
| Acculturation American | Q 8 (0 – 10 scale) | Cultural identification rated highest on American (dichotomized for analysis) | | 21 | 20.8 |
| Acculturation Mexican or Hispanic | Q 8 (0 – 10 scale) | Cultural identification rated highest on Hispanic or Mexican (dichotomized for analysis | | 80 | 79.2 |

**Findings for Quantitative**

**Question 1.**

Research Question 1: For bilingual nursing students, do language proficiency dimensions (experience, proficiency, preference, and acculturation) predict a single measure of self-assessed language proficiency and academic success? Standard entry multiple regression was used to answer these questions.

Language proficiency dimensions were measured with the mean number of months bilingual students spent in English environment (experience), fluency of English language (proficiency), the choice of bilingual students to read a text available in English (preference) and cultural identity (acculturation). Self-assessed language proficiency was measured by using the mean scores of the level of proficiency in speaking, understanding and reading English. The language proficiency dimensions and self-assessed language proficiency mean scores were obtained from items of the Language Experience and Proficiency Questionnaire LEAP-Q instrument. In addition, academic success was measured using the self-reported grade point average (GPA).

*Self-assessed language proficiency.* A standard entry multiple regression analysis included data from 101 participants who completed the Language Experience and Proficiency Questionnaire (LEAP-Q). Language proficiency dimensions (experience, proficiency, preference and acculturation) significantly predicted the single measure of

self-assessed proficiency in the English language; however, 3 cases (Mahalanobis

distance > 15) were removed due to undue influence on the regression model leaving 98

cases in the final regression. Regressing self-assessed English language proficiency on

the four predictor dimensions of English language proficiency for the final sample of 98

yielded a significant model ($R = .625$, $R^2 = .390$, $F(4, 93) = 14.875$, $p < .001$). Proficiency

as measured by age becoming fluent in speaking and reading English ($\beta = -.110$) and

preference for English ($\beta = .013$) provided significant individual contributions to the

model whereas, experience and acculturation did not add significantly to the model (see

Table C1). Examination of the scatterplot of observed standardized residuals by predicted

standardized residuals revealed a funnel shaped distribution indicative of

heteroscedasticity. The bootstrap procedure was employed to determine the

appropriateness of generalizing results beyond this sample. Bootstrap results support the

significance of the overall model 95% CI [1.092, 1.833]. Proficiency as measured by age

becoming fluent in speaking and reading English remained a significant predictor at $p =$

.001, 95% CI [-.162, -.054] and preference for English dropped to a *p value* = .053, 95%

CI [.001, .028].

Table 3. *Test of the Effect of Self-Assessed Language Proficiency Between Language*

*Proficiency Dimensions with Bootstrap* (*N*=98)

| Predictor Variable | B | Bias | SE B | Sig. (2-tailed) | 95% CI Lower | Upper |
|---|---|---|---|---|---|---|
| Constant | 9.309 | -.052 | .643 | .001 | 7.953 | 10.482 |
| Proficiency (fluency) | -.110 | .001 | .027 | .001 | -.162 | -.054 |
| Preference | .013 | .001 | .007 | .053 | .001 | .028 |
| Experience | -.001 | < -.001 | .001 | .249 | -.003 | .001 |
| Acculturation | .343 | .006 | .270 | .193 | -.207 | .849 |

*Academic Success.* A second standard entry multiple regression analysis included
data from 101 participants who completed the Language Experience and Proficiency
Questionnaire (LEAP-Q). Academic success was regressed on language proficiency
dimensions (experience, proficiency, preference and acculturation) among bilingual
nursing students. Three cases (Mahalanobis distance >15) were removed due to the
undue influence on the regression model leaving 98 cases in the final regression.
Regressing self-reported GPA (academic success) on the four predictor dimensions of
English proficiency for the final sample of 98 yielded a non-significant model ($R = .232$,
$R^2 = .054$, $F(4,93) = 1.323$, $p = .267$). None of the four dimensions provided a significant
contribution to the model (Table D1).

**Questions 2.**

Research Questions 2: For bilingual nursing students, does language acculturation predict self-assessed language proficiency and academic success? Simple regression analysis was used to determine the value of language acculturation for prediction of self-assessed language proficiency and academic success.

Language acculturation was measured using the sum score of the 5 items on the English Language Acculturation Scale (ELAs). Self-assessed language proficiency was measured by using the mean score of level of proficiency in speaking, understanding and reading English from items of the LEAP-Q instrument (Appendix). In addition, academic success was measured by using the self-reported GPA.

*Self-assessed language proficiency.* A simple linear regression was used to predict self-assessed language proficiency using language acculturation. A significant regression equation was found ($F(1, 99) = 14.45$, $p < .001$), with an $R^2 = .13$ for the English language. This indicates that self-assessed English proficiency has a predicting effect on language acculturation.

*Academic success.* A second simple linear regression was used to predict academic success using language acculturation. A non-significant regression equation was found ($F(1,99) = .056$, $p = .81$), with an $R^2 = .001$. This indicates that language acculturation does not have a predictive effect on academic success.

**Question 3.**

Research Question 3: For bilingual nursing students, is there a relationship between self-assessed language proficiency and academic success? Correlation was used to examine the relationship between self-assessed language proficiency and academic success.

Self-assessed language proficiency was measured using the mean score of the level of proficiency in speaking, understanding and reading English using LEAP-Q instrument items. Academic success was measured using self-reported GPA.

***Academic success and language proficiency.*** A bivariate Pearson's correlation was conducted to evaluate the relationship between English language proficiency with academic success (self-reported GPA). There was no significant relationship between English language proficiency and academic success (self-reported GPA) among bilingual nursing students, $r = .04$, $p = .68$.

**Question 4.**

Research Question 4: For bilingual nursing students, does assessing multiple dimensions (experience, proficiency, preference and acculturation) of language proficiency provide a better prediction of academic success than the English Language Acculturation Scale? The amount of variance in academic success explained by the dimensions of the LEAP-Q and the ELAS, was compared.

***Language proficiency and experience questionnaire vs. English language acculturation.*** Multiple regression was conducted with both instruments to view the amount of variance in academic success explained by the dimensions of LEAP-Q

(English) and ELAS. LEAP-Q provided a $R^2 = .054$, $p = .267$ compared to the ELAS $R^2 = .001$, $p = .813$. No determination can be made on which instrument has a better prediction of academic success since neither questionnaire provided a significant prediction.

**Findings for Qualitative**

Content analysis was used to interpret meaning from the participants' written responses for the two open-ended questions included in the *Qualtrics* survey (Quinn Patton, 2015). To fully grasp the essence of the relationship between language proficiency and academic success, the following questions were considered: 1) What language learning situations and modalities do bilingual nursing students find most beneficial to their academic success? and 2) What barriers to academic success are most commonly encountered by bilingual nursing students?

**Process**

The responses were read word for word and re-read to identify codes, categories and themes. Throughout the analysis process, the researcher was immersed in the data and any pre-conceived ideas or biases were avoided (Quinn Patton, 2015). This allowed for new insights to emerge from the data. The qualitative data were analyzed through descriptive and thematic analysis. Concepts were identified by looking for repetitive words and words patterns. The concepts were color coded and a table was created (Table E1). To understand the essence of responses, the following questions were considered of the data: 1) what language learning situations and modalities do bilingual nursing

students find beneficial to their academic success? 2) what barriers to academic success are most commonly encountered by bilingual nursing students? Repeated codes in students' responses were then sorted into categories based on similarities and differences. Three main categories were identified as situations or modalities beneficial to academic success: support, communication, and resources. Four categories were identified as barriers to academic success: finances, time management, language barriers and self-perception. These emergent categories were used to organize and group the codes into meaningful clusters and thus the identification of well-established themes were identified and confirmed. The initial analysis provided a trend of learning situations and modalities that bilingual nursing students use to be successful in the educational system. Likewise, barriers to success were identified. Data were synthesized to highlight the concepts that truly reflect what the questions tried to capture. Concepts that did not fit into the more common categories were placed in a separate category as other and re-reviewed.

**Validation Process**

Data from the two open-ended questions were reviewed and analyzed by the researcher and two experienced qualitative researchers from the dissertation committee. Each word from the data was reviewed to identify repeated word patterns. Repeated words were cluster into codes. From the codes identified, categories emerged from both ended questions. After these were well-established, themes emerged. The themes were validated, thus supporting credibility of this qualitative content.

**Question 5.**

Research Question 5. What language learning situations and modalities do bilingual nursing students find most beneficial to their academic success?

Three themes were identified by bilingual nursing students as helpful to their academic success: 1) support, 2) communication, and 3) resources. Students reported using a variety of resources including print and online. Educational resources reported by students included dictionaries, reading and study groups. Four sub-themes emerged from the educational resources: a) visual, b) kinesthetic, c) verbal, and d) auditory as seen in Table E1.

*Support.*

*Friends and family.*

Bilingual students identified friends and family support as beneficial to their success in their educational endeavors. The participants felt that friends and family not only provided communication support, but they also helped them strengthen their confidence during their nursing educational journey. Additionally, they felt that family and friends strengthened their communication skills by correcting their pronunciation and clarifying word meanings, which helped them to have a clearer understanding of the nursing content. The following examples exemplify this support,

> "Friends to help understand what words mean and how most of the words are like words in Spanish"

"The environment I am surrounded by…Most of my friends are nurses…practice my English skills there."

"Many things have helped me be successful. First of all, the support of my family and friends."

"My family support, my friends support (especially my nursing students friend that pressures me in not giving up) …"

"Having a strong family support system, a strong bond with nursing friends…"

*Peers and faculty.*

Bilingual students shared that support from peers and faculty were beneficial to their academic success. Study groups were reported be a major component of their educational success. In addition, they felt having positive feedback from caring instructors was important. Some of them shared,

"Study groups, lectures, reading."

"Scheduling groups with friends."

"Caring instructors. Positive feedback. Lab areas to practice skills and to make mistakes in the lab and not in the clinical setting."

"Study groups. Reviewing notes. Listening to lectures more than once. Professors reassuring…"

***Communication.***

Communication is a very important component when interacting with others, particularly in the nursing profession where most of the communication is verbal. Bilingual students recognized the importance of being bilingual. Many of the participants felt that having the bilingual ability helped them to communicate in the border health care

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setting since they needed to go back and forth in both languages. Some of the exemplars

for the communications theme are as follows:

> "I think that here in the U.S. having some sort of Spanish can be really important. There are a lot of people that do not understand English, and being in the medical field it's quite important to fully understand and communicate with patients."

> "knowing two languages has help me in the clinical setting due to bilingual population."

> "Being bilingual has helped me a lot."

> "I think being bilingual has helped in nursing school. Knowing two languages is a huge advantage in any field, especially living so close to the border. I am able to provide care to both Spanish and English speakers."

In addition, bilingual nursing students feel having both languages gives them a

better understanding of medical terminology. This helps them to have a better

understanding of these concepts. For example,

> "Knowing the meaning of the Latin words. Knowing how to translate medical terms. Being able to describe (school) subjects in both languages."

> "I think being bilingual has helped me understand some medical terminology since some terminology is in Latin and Spanish and Latin have some similarities."

The benefits of communication are also in the communication ESL nursing

students have when interacting with patients who don't speak English. They felt it made

it easier to communicate with their patients and provide support for them by translating

what they are trying to communicate to the nursing staff. It also strengthened their

confidence. For example,

> "Communicating with patients who don't speak English… I've had to translate at times for other staff or students."

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"Being able to communicate with clients, family…"

"Being bilingual in both Spanish and English in the border city is a huge advantage for me. A large portion of the population speaks Spanish and I am able to communicate with them…"

"I love being bilingual. Most of the patients I've cared for speak mostly Spanish, so knowing the language has helped me become successful in nursing school. Also, being able to think in both languages and applying…"

"Being bilingual has given me an advantage."

"Communicating with patients and their families in a border city usually requires Spanish speaking. Being bilingual has helped me communicate with patients and their families better."

Bilingual nursing students on the border seem to embrace bilingualism because it helps them not only to communicate with others but also helps them in their educational process.

### *Educational Resources.*

Nursing students reported having access to multiple educational resources to help them be successful. Bilingual students' responses to the qualitative items revealed language acculturation and cognitive learning was achieved through the use of multiple sensory learning modalities. These included visual, kinesthetic, verbal and auditory sensory modalities. They utilized these as part of their learning process in order to enhance their knowledge. The subthemes associated with resources are displayed in Table E1.

Table 4. *Resources Subthemes of Bilingual Nursing Students*

|  | Exemplars |
|---|---|
| Visual | "Visuals, notes, friends."<br><br>"reading has been the most effective tool to be successful [sic] in nursing program [sic]"<br><br>"Reading all the material…"<br><br>"Reading before class and doing practice questions are extremely helpful…"<br><br>"Watching YouTube videos."<br><br>"Availability of multiple resources such as the web, social media, YouTube" |
| Kinesthetic | "I practice at work"<br><br>"Lab areas to practice skills and to make mistakes in the lab and not in the clinical setting."<br><br>"…Rewriting notes…" |
| Verbal | "One of the things would be being on the border land. Many of the instructors speak Spanish, which makes you able to have a better communication with them. Also, many of the students speak the language too."<br><br>"Be able communicate with clients, family and fellow staff members."<br><br>"The environment I am surrounded by. I work at a hospital as a licensed nursing assistant. Most of my |

| | friends are nurses or are on the nursing path. Mostly I would say work. I've practiced my English skills there." |
| | |
| | "Peer interaction." |
| | |
| | "Watching YouTube videos." |
| | |
| | "Availability of multiple resources such as the web, social media, YouTube" |
| | |
| | "…Well, having friends that are from foreign countries in which they don't speak Spanish, by this I am forced to speak in English and practice it more…" |
| Auditory | |
| | "I listen, peer interaction…" |
| | |
| | "Watching YouTube [sic]videos." |
| | |
| | "Studying, scheduling study groups with friends." |
| | |
| | "…discussions and reviews after lectures." |
| | |
| | "… lectures, reading." |
| | |
| | "…Listening and taking notes in class." |
| | |
| | "…Listening to the lectures more than once. Professors reassuring. Remediation requirements. Studying all day and night! Taking mental breaks." |

*Note*. There is overlap among the categories.

**Question 6.**

Research Question 6. What barriers to academic success are most commonly encountered

by bilingual nursing students?

Four themes were identified as most descriptive of hindrances or barriers to their academic success: 1) finances, 2) time management (full-time employment, family responsibilities), 3) language barriers, and 4) self-perceptions. These will be discussed in detail in the following section.

*Finances.*

Bilingual nursing students on the U.S. and Mexico border expressed their concerns about their economic status and shared how this affects their educational experience. Specifically, many stated that they had to work while going school and this interferes their academic success. Some of the examples provided are,

> "The ability to pay for my schooling while unemployed has made me resort to school loans and scholarships (if available). This added stress that I believe we all suffer."

> "Living on a border town where jobs and financial resources are limited."

> "The only thing that has hindered my success in nursing school is my economic status. I have the need to work in order to sustain myself and that means having less time for school."

> "Finances having to work"

Financial constraints not only limit the access to resources needed during nursing education, but it also limits the time needed to study. Time management is the second barrier identified during the qualitative analysis.

*Time Management.*

Bilingual nursing students identified time management as one of their main concerns, and most commonly expressed, was the difficulty of balancing family

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responsibilities with their educational responsibilities. Other factors that affected their time management were; work responsibilities, the amount of learning material within a short period of time, and procrastination. Students expressed,

"Lack of time management skills, getting distracted easily when studying…"

"Time management and planning."

"There is a lot they ask of you in a very short period of time, with clinical, lecture, studying, online tests, multiple chapters and several books. It is very stressful."

"Full time employment and family."

"For me, there are a few things that have hindered my success in nursing school.

"One example would be poor time management. There is always a lot to do, whether it be academic or social, and finding a balance has proved to be difficult."

***Communication.***

While communication was identified as helpful, the student participants also identified communication as a barrier. The aspects of communication that limits students are communication skills, reading and writing skills, and comprehension of concepts. Some students felt that their communication could be better and this would help them interact with others. In the same matter, understanding the language (English) is one of the main aspects students recognize as a limitation.

"My communication skills. I feel like my communication skills could flow better. I often have to think a lot about what I'm going to say before I say it. My vocabulary isn't as broad as my English native speaker classmates."

"The language barrier is the first obstacle I always come across while studying or understanding instructions."

"My English, many times I can't understand what instructors say, so I am not able to answer some questions, or listen to some instructions. Sometimes in the exams I don't understand a word in a question so I need to guess on the answer."

"Although I am very fluent in English, there are still some terms used at the times during standardized exams ATI (Assessment Technologies Institute), and HESI (Health Education Systems Incorporated) that I am unfamiliar with and thus make the questions a lot more difficult to answer."

### *Self-Perception.*

The final theme that emerged was self-perception. Bilingual nursing students on the border identified various self-perceived traits that were barriers to their academic success. These varied from lack of confidence and being shy. They lack confidence to accomplish school requirements. Students discussed their self-perceptions in the following manner,

"Lack of confidence"

"The discrimination from others, just because I have an accent. They assume I'm not intelligent."

"Loss of motivation. Inability to focus and study."

"Language barriers have never been a problem for me, but what usually becomes a problem is my shyness. I tend to get anxious."

## Quantitative and Qualitative Integration

In the review of both analyses, the support of family and friends has an important role for bilingual nursing students. Qualitative research findings indicated that family and friends have an important role in the strengthening of communication skills. One of the components of LEAP-Q instrument gives the opportunity for participants to rate the

degree of contribution to learning the English language from interactions with friends and families. The mean score of these two contributors revealed $\bar{X} = 6.97$, $SD = 2.46$ (0=not a contribution to 10= most important contributor). This means that speaking and interaction with family and friends (in English) highly contributes to strengthening their communication skills.  The quantitative and qualitative results support the findings that family and friends are important elements for their nursing education.

Language usage was another concept analyzed through the quantitative and qualitative areas of the research. These results revealed that language usage is important for students since it provides them with the opportunity to practice their language skills not only with friends, family, patients, and other health care providers, but also helps them develop the CALP through language exposure. Quantitative research results corroborate the qualitative findings by revealing that exposure to English $\bar{X} = 41.80$, $SD = 11.56$ with a similar achievement for Spanish $\bar{X} = 36.04$, $SD = 11.55$ strengthens language proficiency (CALP). The use of both languages is also seen in the language preference students have when interacting with others with equal fluency in a language. Bilingual nursing students used English $\bar{X} = 55.34$ % of the time, $SD = 28.09$ when interacting with others compared to Spanish $\bar{X} = 44.65$ % of the time, $SD = 28.10$. The use of language seems to be a primordial element in the education of bilingual nursing students on the border, since it gives them the opportunity to interact with others in both English and Spanish.

ESL nursing students use a variety of resources to reinforce their learning journey. The use of different senses such as visual aids, nursing skills practice opportunities, verbal interactions and auditory usage, were identified during the qualitative analysis. These results are supported by the factors that contributed to the learning of English language. Bilingual students use radio as part of their language journey with a mean use of $\bar{X} = 6.7$, $SD = 3.12$ (0=not a contribution to 10= most important contributor). In a similar way, students use reading as contributor to English learning. This component had the highest contribution when learning the language and is currently used by bilingual students with a mean $\bar{X} = 8.77$, $SD = 1.66$ (0=not a contribution to 10= most important contributor). The other contributor identified was the use of television for English learning with a mean $\bar{X} = 7.58$, $SD = 2.57$ (0=not a contribution to 10= most important contributor). The use of the different resources were examined by age for any generational differences, none were found. ESL nursing students ages range from early 20 to 50 years of age. Even those participants that do not fall into the electronic usage generation used YouTube videos, media, and electronic resources to enhance their learning process.

## Additional Findings

Basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP) are the two threshold levels of language proficiency according to Cummins model (Cummins, 1979). During the quantitative analysis, BICS and CALP were obtained by the sum of item numbers 18 (English) and 22 (Spanish) of

the *Qualtrics* survey (Appendix C). Total scores of the six-items reveal if ESL students scored above or below the CALP threshold. All participants scored greater than 25 points, which indicated they have achieved or surpassed the CALP threshold. The mean score of CALP was $\bar{X} = 41.80$, $SD = 11.56$ for the English language and $\bar{X} = 36.04$, $SD = 11.55$ for the Spanish language. These results revealed that ESL nursing students living on the border have the cognitive skills necessary for both languages.

In addition, A bivariate Pearson's correlation was conducted to evaluate the relationship between English language threshold achievement (BICS versus CALP) with academic success (self-reported GPA). There was no significant relationship between English language threshold achievement and academic success (self-reported GPA) among bilingual nursing students, $r = -.031$, $p = .760$.

## Reliability

The reliability coefficients, Cronbach's alpha, were calculated for each continuous variable. The results were strong and ranged from alpha $\alpha$ .73 to 1.00. Reliability coefficients are included on the Variable Table 2.

## Summary of Chapter

Chapter four presented the findings of the study. The findings addressed the six research questions stated from the previous chapters. The first four questions were analyzed through a quantitative analysis. Multiple regression, simple regression and correlations were conducted to answer the quantitative questions. In addition, the narrative responses from the participants were analyzed and grouped into smaller sets

with themes. Direct quotations from the two qualitative questions were included to better understand the modalities students use to be academically successful and barriers to success that the students identified. The next chapter will include discussion of these results as they build on the current theory and research, implications for education, practice, and research recommendations for the future research, and its limitations.

Chapter Five

**Summary and Conclusion**

With the rapid growth of the U.S. minority population, the health care system requires more culturally diverse health care providers to accommodate community needs (U.S. Census Bureau, 2015; Wehbe-Alamah & Fry, 2014). This research study explored the role that language proficiency has on academic success among bilingual nursing students on the U.S. and Mexico border. The Cummins' Language Proficiency Model was used to guide this study. A non-experimental descriptive correlational research design was combined with a qualitative descriptive approach for this mixed methods study. Students were recruited through 22 different nursing programs along the U.S. and Mexico border from April to July 2017. Language Experience Acquisition Proficiency Questionnaire (LEAP-Q) and the English Language Acculturation Scale (ELAS) data were obtained and analyzed. Qualitative research data was obtained from two-open ended questions.

**Language Proficiency and Higher Academic Success**

Overall, language proficiency dimensions (experience, proficiency, preference, and acculturation) significantly predicted the single measure of self-assessed proficiency in English. The age a student became fluent in speaking and reading English was the single most important predictor of students' self-assessed English language proficiency. A study conducted with bilingual (English and Spanish, English and Mandarin) students

found a positive correlation between the age of acquisition, and proficiency in a second language, in this case English (Kaushanskaya et al., 2011). This indicates that, the age students acquire their second language is an important component when measuring self-assessed proficiency.

Complex measurement of the dimensions (experience, proficiency, preference, and acculturation) of language proficiency was no more predictive of higher academic success than the simple measure using the ELAS. None of the four dimensions provided a significant contribution to the model of academic success. Similarly, self-assessed language proficiency and higher academic success were not correlated.

Although these combined dimensions did not predict higher academic success, there are obvious language related influences on general academic success for this population. All students responding to the survey had passing GPAs ranging from 2.7 to 4.0. The lack of a relationship between English proficiency and higher GPAs may be reflective of the high level of cognitive academic language proficiency (CALP) as measured by exposure to English ($\bar{X} = 41.80$, $SD = 11.56$) and Spanish ($\bar{X} = 36.04$, $SD = 11.55$). Students' scores in both languages are much higher than 25, the threshold for CALP (Marian et al., 2007). This might indicate that bilingual students along the U.S. and Mexico border might be successful learners in higher education by using either language.

**Bilingualism and Academic Success**

When descriptive language proficiency was analyzed individually for English and Spanish, U.S. and Mexico border nursing students had a similar mean proficiency in English and Spanish (9.67. versus 8.18). Bialystok (2017) supports these findings by indicating that for bilingual individuals to achieve linguistic proficiency they must control both areas, English and Spanish. This is also seen in the qualitative data where students indicate bilingualism as beneficial on the U.S. and Mexico border.

Qualitative data provided great insight into how family/friend/patient support is important to the achievement of academic success. Bilingual nursing students' responses highlighted the role family, friends, instructors and patients have on the achievement of academic success. Weitzel (2008) found that clinical experiences are essential to understanding content, and this gives the opportunity for students to get support from their patients. This same study emphasizes the support family, peers and faculty provided to baccalaureate nursing students in completing their nursing programs. Torregosa and colleagues (2015) discussed similar findings reporting that students who have academic support from advisors, instructors, and professors achieve higher course grades. The support of significant others also provides the opportunity for students to practice communication skills.

Bilingualism is an important component in ESL nursing education along the U.S. and Mexico border. The ability of ESL nursing student to communicate in both languages

leads to better assimilation to their community of service.  Researchers found that students with positive psychological indicators of acculturation, such as acceptance to the community and assimilation, are able to complete their academics (Cerezo & Chang, 2013; Telbis et al., 2014; Torregosa et al., 2015). In addition, English-language acculturation and familiarization with the English-language can have a positive relationship with students' academic success (Salamonson et al., 2008). Schwartz and Zamboanga (2008) explored the cultural orientation categories applied to cultural practice like assimilation and integration. These authors found that those who applied assimilation and integration strategies helped them to accomplishing bilingualism, which provides them the opportunity to interact in both cultures, Hispanic and American.

Educational resources are vital components in bilingual nursing students' success. These nursing students used a variety of resources to ensure their academic success. The resources identified by the participants reflected reliance on the multiple senses involved in bilingual learning such as visual, kinesthetic, verbal and auditory. They used books, videos, study groups, lectures, and reading resources to ensure their success. A study by Elf, Ossiannilsson, Neljesjo, & Jansson (2015) evaluated or examined the implementation of open educational resources in nursing programs. The students in that study found the use of these resources as a means of stimulating learning, fostering critical thinking, and helping them with the required preparations.

Students in the Elf et al. (2015) study also indicated that it is imperative to have appropriate time management skills. Time management is one of the most common

problems with bilingual nursing students. The student participants in this study reported that time limitations were related to school, family and/or personal responsibilities. Bilingual nursing students felt that it is hard to balance education with personal responsibilities and, thus, hindered their academic success. A study by Oliveira Bosso, Marques da Silva, and Siqueira Costa (2017) found that poor time management produces higher stress levels in nursing students. This tends to hinder students' academic success. Similarly, insufficient income or finances play a key role in academic success in nursing education (Oliveira Bosso et al., 2017). Finances were identified as one of the concerns of the border nursing students. Not having suitable financial resources also increased students' concerns related to academic success. Conversely, working to meet financial needs decreased time for study and potentially impacted academic success.

Lastly, self-perception played a role in academic success, in this case negatively. Students felt that a poor perception of their language abilities negatively impacted their academic performance. Nursing students must trust that they have strong enough communication skills to perform successfully. Linares-Manrique, Linares-Girela, Schmidt-Rio-Valle, Mato-Medina, Fernandez-Garcia, & Cruz-Quintanna (2016) highlighted the importance of a strong self-concept. They found that students who have a strong self-concept can perform better and have lower levels of anxiety.

**Perceptions of Being a Bilingual Nursing Student**

Bilingual nursing students on the U.S. and Mexico border noted the importance of being able to communicate appropriately in both English and Spanish. The importance of communicating in both languages is also a barrier for students who feel that their vocabulary and grammar restrict them in the classroom. A qualitative study by Jirwe, Gerrish, & Emami (2010) explored the student nurses' experience of communication in cross-cultural encounters, and found students with limited communication skills feel that they are not able to provide the information necessary to patients. This limits the communication interaction with their patients. The authors suggest as a solution to prepare these students linguistically to have better outcomes with their patients.

Bilingual nursing students revealed that having the ability to speak English and Spanish provides the opportunity to communicate with others. During the qualitative analysis, students expressed the benefits of communicating with patients. A student stated, "Being bilingual in both Spanish and English in the city of El Paso, Texas is a huge advantage for me. A large proportion of the population speaks Spanish and is able to communicate with them."

Descriptive statistics support this finding by showing that ESL learners that are exposed to English language at a younger age (56.49% versus 43.51% Spanish) perceive that they have better communication abilities. They recognize the importance of practicing both languages along the Texas and Mexico border. Olmedo (2009) explored

blending both languages, using a border school to facilitate a language learning experience. This helped to build the knowledge children used, and helped with community building. Qualitative findings support this, bilingual nursing students felt they served patients better with their bilingual skills because they can act as interpreters and give patients the language support needed during their health experiences.

**Strengths and Limitations**

English language proficiency and academic success have not been widely addressed among ESL nursing students. Diaz, Sanchez, & Tanguma (2012) indicated that while numerous studies have explored the predictors of success of the National Council of Licensure Examination for Registered Nurses (NCLEX-RN), information is limited on the academic predictors of the successful completion of a nursing education. Thus, research related to the characteristics of successful ESL nursing students is needed. The findings of this study can lead to improved retention by targeting admissions to ESL nursing students with language proficiency characteristics like those in this study. Overall, this research study provides new nursing educational knowledge related to the academic success concepts related to ESL nursing students along the U.S. and Mexico border.

The heterogeneity of the sample improved generalizability of findings to nursing schools along the border of the U.S. and Mexico. However, limiting the sample to the border area, decreased generalizability to other areas needing information relevant to Hispanic nursing student success.

**Internal Threats**

One of the internal threats is statistical regression (Portney & Watkins, 2015). This is common in nonrandomized studies where the individual may answer differently due to their background differences. Extremely high or low scores can influence statistical findings. To minimize this threat, extreme scores were examined and/or removed if they exerted too much influence on the data. This was done to help ensure that the results were reflective of this ESL population.

A second internal threat was sample selection (Portney & Watkins, 2015). This was controlled by selecting ESL nursing students from different nursing programs along the border. Selection criteria were utilized during the recruitment process to ensure a more accurate representation of the ESL nursing population. Participation in the study was voluntary and each ESL nursing student had an equal chance to participate in the research study. Oversampling was used to meet all the data sample analysis requirements. The sample is representative of the U.S. and Mexico border nursing student population.

The final internal threat was testing procedure (Portney & Watkins, 2015). ESL nursing students were provided with instructions prior to responding to the survey items. This helped to minimize incomplete surveys and reduce the amount of errors in the survey entries. For the final analysis, only complete surveys were used to minimize statistical analysis errors. For the qualitative section of the research, data were obtained from the two open-ended questions to better understand themes associated with the

learning situation and barriers ESL nursing students encounter in their academic

endeavors.

**External Threats**

External factors that could affect the validity of the study include the students'

home environment, anxiety, and generalizability. The students have different home lives,

which may affect their responses to the survey questions. The participants were informed

of the importance of answering the instrument honestly to reflect their personal

perspectives of the culture and their language use. Participants received instructions on

instruments and an explanation of the purpose of the study. Students may experience

some anxiety if they complete it in a busy environment. Therefore, the participants were

asked to find a quiet and inviting environment to feel more comfortable during the

process. This helped to minimize the interaction threat of the setting and instrument use

(in this case, the online setting). The recruitment process was controlled to increase

homogeneity of the sample. However, as noted above, the control of one threat often

increases another.  In this case, geographic and cultural homogeneity decreased

generalizability beyond the target population. English as a Second Language will be part

of the inclusion criteria to be able to generalize the data to this population. However, the

study tried to maintain a sample that is representative of the ESL community of the

southwestern portion of the U. S.

The sampling process could affect both internal and external validity.  Sampling

only students who are currently in nursing programs eliminated potential participants

who have failed in nursing programs or withdrawn from nursing programs due to potential failure.  This is an acknowledged threat that cannot be overcome without significant financial investment.

## Implications

There are several implications obtained from this research study. In the aspect of research and practice this research study provides the basis for future research. Researchers can utilize the research design to explore the role of language proficiency among bilingual students, not only in the area of nursing, but of other health care related careers. This research study also provided an overview of the use of LEAP-Q and ELAS instruments in the nursing educational setting. These instruments can be used in future research studies to explore the language role, not only in the Spanish language, but in other languages as well. In addition, the findings of this study are important for nursing education as it provides a better understanding of the role language has in bilingual (English and Spanish) nursing students along the U.S. and Mexico border. The results can be used by nursing educators along the border to better meet the needs of this population and help to increase the retention and graduation rates of this susceptible population.

Language proficiency has been a concept of discussion concerning bilingual nursing students. The common perception is that a bilingual nursing student must be proficient in the English language to have academic success. The result of this research study indicated that bilingual students appear to perform well in two languages and may be able to maintain successful GPAs across two languages and two cultures.  It seems

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that bilingual nursing students along the border embrace the bilingualism (able to communicate in English and Spanish) and they see it beneficial to their academic success. This study provides characteristics of an academically successful bilingual nursing students in an American school along the U.S. and Mexico border.

A bilingual nursing student on the U.S. and Mexico border will most commonly have English as their native and dominant language. They prefer to read in the English language and 50% of the time when they interact with someone they do it in both languages. ESL nursing students along the border acquired English as their second language at average age of 6.12 years of age and became fluent at an average age of 9.67 years. These students also have similar average exposure to both language English and Spanish (56.49% versus 43.51%). Their English experience came mostly from their friends and reading. Finally, more of these students identified more with the Hispanic or Mexican culture than they did with the American culture.

## Recommendations

Future recommendations in bilingual nursing education are to help bilingual nursing students become proficient in both languages, English and Spanish, to improve their academic success. These recommendations would not only help in their academic endeavors, but also when interacting with others on the border. Students perceived it as beneficial to have both languages in the nursing profession to help patients have a better understanding of their nursing care and improve health outcomes. Along the U.S. and Mexico border, recruiting students who have characteristics like the participants in this

study may be a straightforward way to increase nursing student retention and reduce expenses associated with the attrition of those who are not successful in nursing school.

Future research is suggested to analyze the characteristic differences between the bilingual nursing students on the border versus the rest of the country. This will help to verify if these results are unique to the U.S. and Mexico border population.

### Conclusions

Nursing diversity is important to meet the future needs of our country. Since minority populations are increasing in numbers culturally sensitive health care providers must be available to meet their needs. English language proficiency did not have an effect on border nursing students' GPAs, but the study discovered that bilingualism is a trait these students possess and can be proud of in this region. The ability to interact in English and Spanish is a benefit to the bilingual nursing students and the patients that they are preparing to serve on the U.S. and Mexico border. Furthermore, this study provided needed information for educators on the importance language acquisition, proficiency, and comprehension in educating bilingual nursing students in an English only curriculum. Understanding the needs of Hispanic bilingual nursing students contributes to a climate of culturally responsive teaching, which Ladson-Billings (1994) and other educators describe as a pedagogy that recognizes the importance of including students' cultural references in all aspects of learning.

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Appendix A. Cummins Language Proficiency Model



**Basic Interpersonal**    **BICS**    **Communicative Skills**

**Cognitive Academic**    **CALP**    **Language Proficiency**
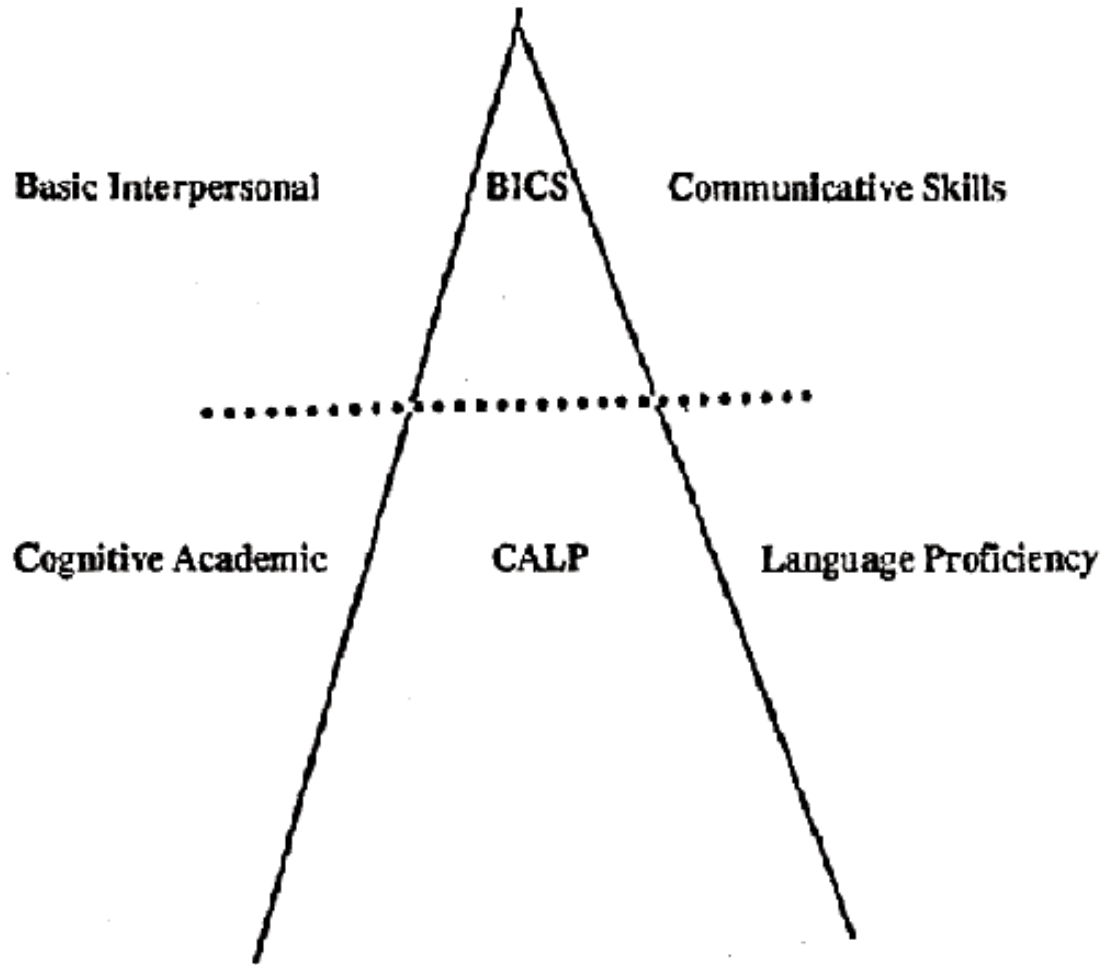
Figure 2. Cummins Language Proficiency Model. This model explains the two

dimensions of language acquisition and how they are acquired in ESL students

(Cummins, 1980, p. 2)

Appendix B. Concepts Summary Table

Table 5. Academic Success, Acculturation Strategies and Language Proficiency Concepts

Summary

| Concept | Variable | Measurement |
|---|---|---|
| *Academic Success* | DV<br>Academic success is defined as the fulfillment of all course requirements in the projected time by utilizing specialized cognitive and linguistic abilities required to perform the academic-related task (Haim, 2014). | Self-reported Grade Point Average (GPA) in the 0 to 4.0 scale. Academic successful GPA was measured as 3.0 and above. |
| *Language proficiency* | Define according to Cummins<br>1) **BICS. -** It encompasses the basic speaking skills acquired by an individual to communicate his/her ideas.<br>2) **CALP. -** Also known as language proficiency, it is the ability to relay abstract ideas. Language proficiency dimensions:<br>Proficiency – English well developed in the areas of grammar, vocabulary and pronunciation (Gee, Walsemann, & Takeuchi, 2010).<br>Preference – Individual decision on what language interaction (Stevenson, 2015).<br>Acculturation –A cultural modification of an individual, group, or people adapting or borrowing traits from another culture; also, it is the merging of cultures as a result of prolonged | LEAP-Q self-report language proficiency of two languages (Marian et al., 2007).<br><br>Higher use of the English language is rate 0 to 10 in different areas such as interacting with friends, family, reading, watching television and listening to radio.<br><br>The 25 points and higher will equal CALP. Lower than 25 will equal to BICS. Sum of item no. 18 *Qualtrics* survey (Marian et al., 2007; Appendix C).<br><br>Each dimension will be measured as:<br><br>Proficiency – mean age of English fluency and reading fluency. Item no. 15 *Qualtrics* survey (Appendix C) |

Appendix B: Continued

| | |
|---|---|
| contact (Merriam-Webster, 2015, para. 1). <br> Experience – Individual's language history and behavioral performance (Marian, Blumenfeld, & Kaushanskaya, 2007). <br> In addition there is a variable named: <br> Self-Assessed Proficiency- Self-indicator of English language usage (Salamonson, Attwood, Everett, Weaver, & Glew, 2013). | Preference – Mean score of choosing to read and speak English and Spanish. Item no. 6 and 7 *Qualtrics* survey (Appendix C). <br><br> Acculturation – Highest score of acculturation identification (0=no identification to 10=complete identification). Item no. 8 *Qualtrics* survey (Appendix C). <br><br> Experience – Percentage of time exposed to English and Spanish. Item no. 5 *Qualtrics* survey (Appendix C). Mean months spent in English environment and mean months spent in Spanish environment. Item no. 16 and 20 *Qualtrics* survey. <br><br> Self-Assessed Proficiency – Mean self-reported level of proficiency in speaking, understanding, reading English and Spanish. Item no 17 and 21 Qualtrics survey (Appendix C). |

Appendix B: Continued

| Language Acculturation | Language Acculturation – Individuals ability to speak, read, think and interact in English language (Salamonson, Attwood, Everett, Weaver, & Glew, 2013). | Five items of the ELAS instrument. Self-rated 5-point Likert scale 1=Only non-English Language to 5=Only English. Sum of the five ELAS item. Item no. 24 *Qualtrics* survey. |
| --- | --- | --- |

# Appendix C. Language Experience and Proficiency Questionnaire (LEAP-Q) Instrument

## Language Experience and Proficiency Questionnaire (LEAP-Q)

| Last Name | | First Name | | Today's Date | |
|-----------|---|-----------|---|-------------|---|
| Age | | Date of Birth | | Male ☐ | Female ☐ |

**(1)** Please list all the languages you know **in order of dominance**:

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

**(2)** Please list all the languages you know **in order of acquisition** (your native language first):

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

**(3)** Please list what percentage of the time you are *currently* and *on average* exposed to each language. (*Your percentages should add up to 100%*):

| List language here: | | | | | |
|----------------------|---|---|---|---|---|
| List percentage here: | | | | | |

**(4)** When choosing to read a text available in all your languages, in what percentage of cases would you choose to read it in each of your languages? Assume that the original was written in another language, which is unknown to you. (*Your percentages should add up to 100%*):

| List language here | | | | | |
|---------------------|---|---|---|---|---|
| List percentage here: | | | | | |

**(5)** When choosing a language to speak with a person who is equally fluent in all your languages, what percentage of time would you choose to speak each language? Please report percent of total time. (*Your percentages should add up to 100%*):

| List language here | | | | | |
|---------------------|---|---|---|---|---|
| List percentage here: | | | | | |

**(6)** Please name the cultures with which you identify. On a scale from zero to ten, please rate the extent to which you identify with each culture. (Examples of possible cultures include US-American, Chinese, Jewish-Orthodox, etc):

| List cultures here | | | | | |
|---------------------|---|---|---|---|---|
| | (click here for scale) | (click here for scale) | (click here for scale) | (click here for scale) | (click here for scale) |

**(7)** How many years of formal education do you have? _____
Please check your highest education level (or the approximate US equivalent to a degree obtained in another country):

☐ Less than High School ☐ Some College ☐ Masters
☐ High School ☐ College ☐ Ph.D./M.D./J.D.
☐ Professional Training ☐ Some Graduate School ☐ Other: _____

**(8)** Date of immigration to the USA, if applicable _____
If you have ever immigrated to another country, please provide name of country and date of immigration here.
_____

**(9)** Have you ever had a vision problem ☐, hearing impairment ☐, language disability ☐, or learning disability ☐ ? (Check all applicable). If yes, please explain (including any corrections):
_____

**Language:** ▢

**This is my** (please select from pull-down menu) **language.**

**All questions below refer to your knowledge of** .

**(1) Age when you...:**

| began acquiring | became fluent | began reading | became fluent reading |
|---|---|---|---|
| : | in : | in : | in : |
| | | | |

**(2) Please list the number of years and months you spent in each language environment:**

| | Years | Months |
|---|---|---|
| A country where  is spoken | | |
| A family where  is spoken | | |
| A school and/or working environment where  is spoken | | |

**(3)** On a scale from zero to ten, please select your *level of* **proficiency** in speaking, understanding, and reading  from the scroll-down menus:

| Speaking | (click here for scale | Understanding spoken language | (click here for scale) | Reading | (click here for scale |
|---|---|---|---|---|---|

**(4)** On a scale from zero to ten, please select how much the following factors contributed to you learning :

| Interacting with friends | (click here for pull-down scale) | Language tapes/self instruction | (click here for pull-down scale) |
|---|---|---|---|
| Interacting with family | (click here for pull-down scale) | Watching TV | (click here for pull-down scale) |
| Reading | (click here for pull-down scale) | Listening to the radio | (click here for pull-down scale) |

**(5)** Please rate to what extent you are currently exposed to  in the following contexts:

| Interacting with friends | (click here for pull-down scale) | Listening to radio/music | (click here for pull-down scale) |
|---|---|---|---|
| Interacting with family | (click here for pull-down scale) | Reading | (click here for pull-down scale) |
| Watching TV | (click here for pull-down scale) | Language-lab/self-instruction | (click here for pull-down scale) |

**(6)** In your perception, how much of a foreign accent do you have in  ?

(click here for pull-down scale)

**(7)** Please rate how frequently others identify you as a non-native speaker based on your <u>accent</u> in  :

(click here for pull-down scale)

Language Proficiency Survey

---

**Start of Block: Language and Experience Proficiency Questionnaire (LEAP-Q)**

Q1 Enter your current age

_____

---

Q2 Select a gender

○ Male  (1)

○ Female  (2)

---

Q3 Which language is dominant for you?

○ Spanish  (1)

○ English  (2)

---

Q4 Which language was the first one you acquired (your native language)?

◯ English  (1)

◯ Spanish  (2)

---

Q5 Please list what percentage of the time you are *currently* and o*n average* exposed to each language

*Your percentage should add up to 100%*

| | |
|---|---|
| English (1) | |
| Spanish (2) | |

---

Q6 When choosing to read a text available in all your languages, in what percentages of cases would you choose to read in each of your languages? Assume that the original was written in another language, which is unknown to you.

*Your percentage should add up to 100%*

| | |
|---|---|
| English (1) | |
| Spanish (2) | |

---

Q7 When choosing a language to speak with a person who is equally fluent in all your languages, what percentage of time would you choose to speak each language? Please report percent of total time.

*Your percentage should add up to 100%*

| | |
|---|---|
| English (1) | |
| Spanish (2) | |

Q8 Please name the cultures with which you identify. On a scale from zero to ten, please rate the extent to which you identify with each culture. (Examples of possible cultures include U.S.-American, Mexican American, Mexican or Hispanic):

| | |
|---|---|
| List culture here (1) | |
| List culture here (2) | |
| List culture here (3) | |

Q9 Type of nursing program you are currently enrolled

    ○ Licensed Vocational Nurse (LVN) or Licensed Practical Nurse (LPN)  (1)

    ○ Associates in Nursing Degree (ADN)  (2)

    ○ LVN to ADN  (3)

    ○ Bachelor Nursing Degree (BSN)  (4)

    ○ LVN to BSN  (5)

    ○ RN TO BSN  (6)

---

Q10 How many years of formal education do you have?

    _____

---

Appendix D: Continued

Q11 Please check your highest education level (or the approximate U.S. equivalent to a degree obtained in another country):

○ Less than High School  (1)

○ High School  (2)

○ Professional Training  (3)

○ Some College  (4)

○ College  (5)

○ Some Graduate School  (6)

○ Masters  (7)

○ Ph.D./M.D./J.D.  (8)

○ Other  (9) _____

---

Q12 Date of immigration to the U.S., If applicable:

_____

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Appendix D: Continued

Q13 If you have ever immigrated to another country, please provide name of country and date of immigration here

_____

------------------------------------------------------------------------------------------------

Q14 Have you ever had a (Check all applicable):

☐ Vision problem  (1)

☐ Hearing impairment  (2)

☐ Language disability  (3)

☐ Learning disability  (4)

☐ If yes, please explain  (5)

_____

☐ None  (6)

------------------------------------------------------------------------------------------------

Appendix D: Continued

Q15 All questions below refer to your knowledge of age when you... English

|  | Age (1) |
|---|---|
| Began acquiring (1) |  |
| Become fluent in (2) |  |
| Began reading in (3) |  |
| Became fluent reading in (4) |  |

Appendix D: Continued

Q16 Please list the number of years and months you spent for English environment:

|  | Years (1) | Months (2) |
|---|---|---|
| A country where is spoken (1) |  |  |
| A family where is spoken (2) |  |  |
| A school and/or working environment where is spoken (3) |  |  |

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Q17 On a scale from zero to ten, please select your level of proficiency in speaking, understanding, and reading your English language:

| | |
|---|---|
| Speaking (1) | |
| Understanding spoken language (2) | |
| Reading (3) | |

Appendix D: Continued

Q18 On a scale from zero to ten, please select how much the following factors contributed to you learning of your English language:

| | |
|---|---|
| Interacting with friends (1) | |
| Interacting with family (2) | |
| Reading (3) | |
| Language tape/ self instruction (4) | |
| Watching television (5) | |
| Listening to the radio (6) | |

Appendix D: Continued

Q19 All questions below refer to your knowledge of age when you...Spanish language:

|  | Age (1) |
|---|---|
| Began acquiring (1) |  |
| Become fluent in (2) |  |
| Began reading in (3) |  |
| Became fluent reading in (4) |  |

Appendix D: Continued

Q20 Please list the number of years and months you spent in Spanish language environment:

|  | Years (1) | Months (2) |
|---|---|---|
| A country where is spoken (1) |  |  |
| A family where is spoken (2) |  |  |
| A school and/or working environment where is spoken (3) |  |  |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q21 On a scale from zero to ten, please select your level of proficiency in speaking, understanding, and reading in your Spanish language:

| Speaking (1) | |
|---|---|
| Understanding spoken language (2) | |
| Reading (3) | |

Appendix D: Continued

Q22 Please rate to what extent you are currently exposed to the Spanish language in the following contexts:

| | |
|---|---|
| Interacting with friends (1) | |
| Interacting with family (2) | |
| Watching television (3) | |
| Listening to radio/music (4) | |
| Reading (5) | |
| Language-lab/ self-instruction (6) | |

Q23 Please rate:

| | |
|---|---|
| In your perception, how much of a foreign accent do you have in English language? (1) | |
| How frequently do others identify you as a non-native speaker base on your accent in English? (2) | |

Appendix D: Continued

Q24 Please indicate how descriptive each statement is of you by selecting the number corresponding to your response

| | Only Spanish Language (1) | More Spanish than English (2) | Both Spanish and English equally (3) | More English than Spanish (4) | Only English (5) |
|---|---|---|---|---|---|
| In general, what language(s) do you speak? (1) | ○ | ○ | ○ | ○ | ○ |
| In general, what language(s) do you read? (2) | ○ | ○ | ○ | ○ | ○ |
| What language(s) do you usually speak at home? (3) | ○ | ○ | ○ | ○ | ○ |
| In which language(s) do you usually think? (4) | ○ | ○ | ○ | ○ | ○ |
| What language(s) do you usually speak with your friends? (5) | ○ | ○ | ○ | ○ | ○ |

**End of Block: English Language Acculturation Scale (ELAS)**

Appendix D: Continued

Q25 The following questions will give you the opportunity share your thoughts on your experience as a bilingual nursing student.

*1) What things have helped you to be successful in nursing school? Provide as much information or as many examples as you can.*

_____

_____

_____

_____

_____

Q26 *2) What things have hindered your success in nursing school? Provide as much information or as many examples as you can think of.*

_____

_____

_____

_____

_____

Appendix D: Continued

Q27 Self-reported GPA in a 0 to 4.0 scale. Get as close an estimate of your current GPA as possible.

_____

Appendix E. English Language Acculturation Scale (ELAS)

**English Language Acculturation Scale (ELAS) Instructions***: Please indicate how descriptive each statement is of you by circling the number corresponding to your response.

|   |   | **Only non-English** language(s) | More non-English than English | Both non-English & English equally | More English than non-English | **Only ENGLISH** |
|---|---|---|---|---|---|---|
| **1** | In general, what language(s) do you speak? | 1 | 2 | 3 | 4 | 5 |
| **2** | In general, what language(s) do you read? | 1 | 2 | 3 | 4 | 5 |
| **3** | What language(s) do you usually speak at home? | 1 | 2 | 3 | 4 | 5 |
| **4** | In which language(s) do you usually think? | 1 | 2 | 3 | 4 | 5 |
| **5** | What language(s) do you usually speak with your friends? | 1 | 2 | 3 | 4 | 5 |

Appendix E: Continued

Reference:

Salamonson, Y., Everett, B., Koch, J., Andrew, S., & Davidson, P. M. (2008). English-language acculturation predicts academic performance in nursing students who speak English as a second language. *Research in Nursing & Health, 31*(1), 86-94.

Permission is granted for research and educational use of the scale. Please would you keep the lead author (Yenna Salamonson – y.salamonson@uws.edu.au ) informed if you are modifying or revising this scale.

Appendix F. Invitational Email Sent to Deans and/or Program Coordinators

Dear Nursing Program Dean or Director,

My name is Cristina Dominguez. I am a bilingual Ph.D. nursing student at The University of Texas at Tyler (UTTyler). I came to the U.S. when I was 18 years old to continue my education in one of the border cities with Mexico, El Paso, Texas. As a bilingual graduate student, I am interested in learning what role language proficiency dimensions such as preference; proficiency, experience and acculturation have on academic success among bilingual nursing students in the U.S.-Mexico population.

Language proficiency will be measured using a survey that takes less than 10 minutes to complete and is very informal. I am trying to capture the thoughts and perspectives on being a bilingual student on the U.S.-Mexico border. The participation for this study will be anonymous. Participants will be not identified.

There is no compensation for the participation in this study. However, the participation of your students will provide valuable information for nurse educators that could lead to the development of educational interventions to enhance academic success among this population.

Will you please share the survey link below with your undergraduate nursing students in any program (LVN/LPN, AD RN, BS RN, RN to BSN, Diploma)? Please use any or all of the different online platforms you use within your program (email, Blackboard, twitter, Facebook, Google Plus).

https://uttyler.az1.qualtrics.com/jfe/form/SV_9ZbjRDVm01Rhlv7

Thank you for your support in my Ph.D. journey.

Respectfully,

Cristina Dominguez RN, MSN
Ph.D. Nursing Student
The University of Texas at Tyler
School of Nursing
(915) 490-6071
cdominguez3@patriots.uttyler.edu

Appendix G. Study *Qualtrics* Consent

**Introduction/Informed Consent**

**The Role of Language Proficiency in Academic Success in Bilingual Nursing Education**

Dear Nursing Student,

You are being asked to participate in a study that will ask you questions about your perceived language proficiency in your nursing education. The purpose of this study is to:

- Learn if there is an effect from the language proficiency in the academic success in U.S.-Mexico bilingual nursing students.

Who should participate?

- English as a Second Language student
- Bilingual (Spanish/English)
- Ability to read, write, and speak English
- Male and female students 18 years of age or older
- Enrolled currently in a nursing program
- Student nurses from colleges/universities along the U.S.–Mexico border who are willing, able, and have access to a computer to complete the online survey

Participant's expectations:

- Completion of an anonymous online survey that will take approximately 10 minutes of your time.
- Honest or a truthful response is an expectation and anonymity will be strictly maintained. There are no right or wrong answers to the survey questions.

Potential benefits:

- Improve knowledge in concepts that relate to academic success in bilingual nursing students.
- Educational interventions can be generated to ensure academic success among bilingual nursing students.

Appendix G: Continued

Potential risks:

- There are no known serious risks to participating in this study.
- As a result of taking the survey, you might be able to better recognize your current perception of language proficiency.

**Confidentiality**

Responses are not identifiable in any way. Professional organizations, employers, or schools of nursing will not have access to any of the survey results. The survey link is distributed by the researcher, but the survey data are housed on *Qualtrics*, an online survey program contracted by The University of Texas at Tyler. No identifiable personal data is requested as part of the survey. The researchers at The University of Texas at Tyler will maintain the surveys, analyze the data, and report the statistical results.

The researchers retain the right to use and publish non-identifiable data. All data will be stored on password protected and encrypted university computers. The *Qualtrics* access will be limited to the student researcher Cristina Dominguez and the dissertation committee. If requested, the Chair of the university's Institutional Review Board may review data as part of their routine compliance monitoring.

**Participation and Withdrawal**

Your participation is entirely voluntary. You are free to choose to not participate, or to cease participation, at any time without any undue consequences. Non-participation will not affect your standing in your current nursing program.

**Questions about the Study**

This study has been approved by The University of Texas at Tyler, Institutional Review Board (IRB). If you have any questions regarding your rights as a research participant, please contact Dr. Gloria Duke, IRB Chair at gduke@uttyler.edu, or at 903-566-7023.

If you have questions or concerns during the time of your participation in this study, after its completion, or you would like to receive a copy of the final aggregate results of this study, please contact:

Cristina Dominguez RN, MSN
PhD Nursing Student
The University of Texas at Tyler

Appendix G: Continued

School of Nursing
(915) 490-6071
cdominguez3@patriots.uttyler.edu

**Giving of Consent**
I have read this consent form and I understand what is being requested of me as a participant in this study.

**Consent is implied by completion of the online survey.**

Appendix H. IRB Study Approval

# Dominguez Sp2017-90 Approval as Exempt

## Gloria Duke <GDuke@uttyler.edu>

Sun 4/23/2017 4:08 PM

To:Cristina Dominguez <cdominguez3@patriots.uttyler.edu>; Angela Nunez <anunez@uttyler.edu>;

Cc:Danita Alfred <dalfred@uttyler.edu>;

📎 5 attachments (3 MB)

CITI Report .pdf; Dominguez Dissertation Proposal 4-17-2017-2.docx; Dominguez IRB application.docx; Dominguez PhD Proposal_Approval_fillables signed.pdf; Language_Proficiency_Survey_Qualtrics.docx;

Hello Cristina!

How exciting you are at this point in your PhD journey!!

You did a great job of completing your materials!

Angela, please do approval for exempt with waiver for Ms. Dominguez.

Thank you!!! Gloria

*Gloria Duke, PhD, RN*
*Professor and Associate Dean, Office of Research*
*Bart Brooks Professor of Ethics and Leadership*
*BRB 2255; 903-566-7023*

Fig. 3 UTTyler IRB Research Approval e-mail

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Appendix I. Biographical Sketch

| NAME | POSITION TITLE | | |
|---|---|---|---|
| Cristina Dominguez | Doctoral Candidate, The University of Texas at Tyler | | |
| | El Paso Community College | | |
| | Nursing Instructor- El Paso, TX | | |
| EDUCATIONA/TRAINING | | | |
| INSTITUTION AND LOCATION | DEGREE (if applicable) | MM/YY | FIELD OF STUDY |
| New Mexico State University, Las Cruces, NM | BSN | 08/2008 | Nursing |
| The University of Texas at El Paso, El Paso, TX | MSN | 05/2012 | Nursing Education |
| The University of Texas at Tyler, Tyler, TX | PhD | 12/17 | Nursing |

A. Personal Statement
B. Positions and Honor

| 2013-Present | El Paso Community College- Nursing Instructor El Paso, TX |
|---|---|
| 2012-2013 | Texas Tech Health Science Center- Internal Medicine Department- Clinical Research Coordinator- El Paso, TX |
| 2008-2012 | University Medical Center of El Paso, TX Unit Coordinator, Bed Accommodation Cardiovascular Intensive Care Unit- Charge Nurse and Staff Nurse Intensive Care Unit- Staff Nurse |

C. Professional Memberships

Sigma Theta Tau International, Honors of Nursing
The National Society of Leadership and Success

D. Honors

El Paso Community Diamond Award recipient- May 2016
Faculty Achievement Award Nominee- September 2017