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by

Altagracia Guerrero

May, 2012

ACADEMIC ACHIEVEMENT PATTERNS OF FORMER ENGLISH LANGUAGE  
LEARNERS SERVED IN A BILINGUAL EDUCATION PROGRAM

A Doctoral Thesis Presented to the  
Faculty of the College of Education  
University of Houston

In Partial Fulfillment  
of the Requirements for the Degree

Doctor of Education  
in Professional Leadership

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May, 2012

## DEDICATION

By completing the requirements of this doctoral degree, I am fulfilling a life-time educational goal instilled in me by my mother, Maria Palacios. She is the one person who believes in me more than I believe in myself. It is due to her undying confidence in my potential that this terminal degree has come to fruition. *¡Gracias por todo mamá! Este trabajo se lo dedico a usted por inculcar en mí el valor de la educación.*

The attainment of this degree represents the commitment shared by my family who never doubted my ability to accomplish this goal. My husband, Ramon Guerrero, is my constant source of strength and determination. I am forever grateful for his love and patience, especially during these last two years. My children, Ramon Jr. and Marissa, have been and always will be my eternal inspiration. They embody all the infinite possibilities, and this accomplishment is a mere fraction of what I believe they are capable of achieving themselves. I love them with all my heart, and I thank them for their motivation and support.

I also dedicate my work to my sisters Elia, Araceli, and Nancy who have always been convinced that this degree was within my grasp. I appreciate their faith in me and continuous encouragement and understanding.

Most importantly, I dedicate this milestone in my life to God for granting me the needed opportunity, wisdom, and perseverance. I am grateful for the guidance received as an educator, and I pray that my path continues to lead me to places and situations where I can make a positive difference.

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### Abstract

Current accountability systems for programs serving English language learners (ELLs) focus on the achievement level of students who are still classified as "limited English proficient" (de Jong, 2004). Thus, there are no data documenting whether the academic achievement of this group of students is sustained beyond the year of exit. Analyzing the data of former ELLs as a student group can provide relevant information for long-term district and program accountability (de Jong, 2004). Since educators who serve this special population of students have the dual responsibility of ensuring mastery of the content area curriculum and acquisition of the English language, it is imperative that bilingual education programs are evaluated to determine the level of ELL academic success. The purpose of this study was to examine the long-term academic success of students formerly served in a bilingual education program so that achievement patterns are identified and future achievement, as measured by standardized tests, can be predicted. This research addressed the achievement patterns of former bilingual education students in math and reading, as measured by the Texas Assessment of Knowledge and Skills (TAKS). It compared the achievement rates of fifth and eighth grade students who exited the bilingual education program at different grade levels. The fifth and eighth grade 2010 TAKS data were categorized in two groups of former bilingual education students who met program exit criteria, those who met early-exit criteria at the end of first or second grade and those who met late-exit criteria at the end of third or fourth grade.



## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION .....	1
Educational Trends of ELLs in the United States.....	2
Exit Policies .....	4
The Role of Exit Rates in Program .....	5
Purpose of the Study .....	6
Research Questions.....	7
Significance of the Study .....	11
Overview of the Methodology .....	12
Organization of the Study .....	13
Definition of Terms.....	16
II. LITERATURE REVIEW.....	19
United States and Texas Population .....	19
History of Bilingual Education .....	22
Civil Rights Context .....	22
The Bilingual Education Act .....	26
Bilingual Education Programs .....	28
Inclusion of Former Bilingual Students in Accountability .....	31
Documented Academic Achievement of Former Bilingual Students.....	33
III. METHODOLOGY .....	37
Purpose.....	37
Population .....	37
Instrumentation .....	43
Procedure and Time Frame.....	46
Data Analysis .....	47
Scope and Limitations.....	48
IV. RESULTS.....	50
Introduction.....	51
Research Question One.....	55
Research Question Two .....	61
Data Summary .....	70

## TABLE OF CONTENTS (continued)

Chapter	Page
V. DISCUSSION .....	72
Summary of Findings.....	73
Implications.....	78
Limitations .....	84
Recommendations.....	86
REFERENCES .....	88
APPENDIX A: UNIVERSITY OF HOUSTON CONSENT TO PARTICIPATE IN RESEARCH .....	96
APPENDIX B: ALDINE INDEPENDENT SCHOOL DISTRICT PERMISSION TO APPLY FOR RESEARCH STUDY.....	98
APPENDIX C: TEXAS ASSESSMENT OF KNOWLEDGE AND SKILLS RAW SCORE CONVERSION TABLES GRADES 5 AND 8: READING AND MATHEMATICS.....	101
VITA	

## LIST OF TABLES

Table	Page
1	Summary of Study District Exit Criterion for Each Grade Level.....9
2	U.S. and Texas Hispanic or Latino Population: 2010 U.S. Census .....20
3	2009-2010 U.S. and Texas Student Population and Spanish Home Language .....21
4	Summary of State Exit Criteria for Each Grade Level .....45
5	Descriptive Statistics of Study Participants by Assessment Grade and Time of Exit .....52
6	Frequencies and Percentages of Study Participants by Gender .....53
7	Study Participants Exited by Grade Level .....53
8	Study Participants by Assessed Grade and Program Exit Categories.....54
9	Total Study Participants by Program Exit Categories and Grades .....55
10	Summary of Participants Meeting Minimum Passing Standards by Exit Category and TAKS Content Area Assessment .....57
11	Summary of Participants Achieving Commended Performance by Exit Category and TAKS Content Area Assessment .....59
12	Study Participants Meeting Minimum Passing Standards in TAKS Reading and Math .....60
13	Study Participants Achieving Commended Performance in TAKS Reading and Math .....61
14	<i>t</i> -test of Grade 5 Reading Raw Scores by Time of Program Exit .....63

## LIST OF TABLES (continued)

Table	Page
15 <i>t</i> -test of Grade 8 Reading Raw Scores by Time of Program Exit.....	64
16 <i>t</i> -test of Grade 5 Math Raw Scores by Time of Program Exit.....	64
17 <i>t</i> -test of Grade 8 Math Raw Scores by Time of Program Exit.....	65
18     Linear Regression of Grade 5 Reading and Time of Program Exit.....	66
19     Linear Regression of Grade 5 Math and Time of Program Exit.....	66
20     Linear Regression of Grade 8 Reading and Time of Program Exit.....	67
21     Linear Regression of Grade 8 Math and Time of Program Exit.....	67
22     Odds Ratios for the Effect of Time of Program Exit on Gender, TAKS Reading, and TAKS Math Commended Performance Achievement .....	69

## LIST OF FIGURES

Figure		Page
1	ELL Identification and Placement Flowchart PK-1 <sup>st</sup> Grade .....	40
2	ELL Identification and Placement Flowchart 2 <sup>nd</sup> -12 <sup>th</sup> Grade .....	41

## **CHAPTER ONE**

### **INTRODUCTION**

Mandates of the No Child Left Behind Act (NCLB) of 2001 (U.S. Department of Education, 2002) require all states to hold local school districts accountable to develop standards and put systems in place in order to ensure that all enrolled students are able to meet or exceed educational standards. As a result, bilingual and English as a Second Language (ESL) programs are under scrutiny as to their effectiveness in helping ELLs to overcome the linguistic barriers they encounter when entering schools in the United States (U.S.). Usually, bilingual and ESL programs are evaluated on the academic performance of ELLs still being served in the program. While certainly providing important information about the performance and academic growth of limited English proficient students, this type of evaluation does not describe what happens to ELLs once they have been placed in a mainstream classroom on a full-time basis after having met the specified exit criteria (de Jong, 2004). This research study focused on the academic achievement of former ELLs, particularly those who were served through a bilingual education program. The findings provided a better understanding of whether a school district had been able to provide equal educational opportunities for this group of students. In order to fully explore this issue, it was necessary to review the educational trends of ELLs in the U.S., program exit policies, and the role of exit rates in program evaluations. The findings of this research study, through an analysis of the fifth and eighth grade math and reading TAKS results of former bilingual students, were outlined and compared based on their grade level of exit. The implications of this study on district exit policies and program evaluations were discussed by the researcher.

## **Educational Trends of ELLs in the United States**

Over the past 20 years, there has been a significant increase in the number of immigrants to the U.S. (Nieto, 2004). Students currently enrolled in U.S. schools come from a variety of economic, linguistic, cultural, and ethnic backgrounds and bring diverse experiences and expectations to school. There are over four million ELLs enrolled in kindergarten through twelfth grade in U.S. public schools with an increase of more than 70% in the ELL population in the last decade (Zehler, Fleischman, Hopstock, Stephenson, Pendzick, & Sapru, 2003). According to the Texas Education Agency (TEA) 2009 Public Education Information Management System (PEIMS) report, a total of 817,074 ELLs are enrolled in Texas, with approximately 91% being native Spanish speakers. By the year 2015, it is projected that 11% of students enrolled in public schools will qualify for language services. The road to best meet the academic and linguistic needs of this increasing number of students has been paved by federal policy and past landmark court decisions. A summary of the history of education impacting ELLs follows, while a more comprehensive review of educational policy, programs, and accountability is presented in chapter two of this research study.

Title IV of the Civil Rights Act (1964) requires school districts to take affirmative steps to avoid discrimination against students based on their limited proficiency in English. A decade later in 1974, the Supreme Court decided that “there is no equality of treatment merely by providing students with the same facilities, textbooks, teachers, and curriculum; for students who do not understand English are effectively foreclosed from any meaningful education” in the landmark court decision for *Lau v. Nichols* (Lau v. Nichols, 1974). The decision did not include a recommendation of a particular

educational program that would provide a meaningful education. Instead, it stipulated that the intervention or sought remedy can be instruction in the students' native language or in English (de Jong, 2004). The court's position became more focused in the 1981 *Castañeda v. Pickard* decision where three criteria to determine whether an intervention is adequate were identified. According to this decision, an effective instructional program targeting ELLs must have theoretical merit, be implemented with sufficient resources, and it must demonstrate its effectiveness through program evaluation (Crawford, 1999). As a result of this guidance, various educational programs have been developed and implemented in school districts to meet the diverse needs of ELLs.

This group of students requires specialized delivery of instruction in a bilingual or ESL program. The programs vary according to the language of instruction (bilingual or English-only), program goals (bilingualism and biliteracy or English proficiency), and the program's target group (only ELLs or a mixed group) (Ovando, Collier, & Coombs, 2003). The total number of ELLs enrolled in a district will determine what special language program(s) will be offered according to bilingual and ESL program guidelines set forth in the Texas Education Code Chapter 29 (2005) and the 19 Texas Administrative Code Chapter 89 (2007). Districts where a majority of ELLs speak the same native language (e.g., most ELLs speak Spanish in Texas), will offer a form of bilingual program. Students receiving instruction in a bilingual program are taught in their native language in the core content areas and also receive instruction in ESL. Over time, these students transition from receiving most of their instruction in their native language to receiving most of their instruction in English. Districts that have schools with small



numbers of students who speak a variety of different languages are required to offer ESL programs.

Independent of compliance requirements, there are different opinions on the type of instructional approach that should be used with ELLs. While some people believe that a bilingual education program is more effective, others advocate for English-only approaches. In spite of program differences, a majority share a common feature: the temporary nature of the program with the ultimate goal being the preparation of ELLs for placement in a mainstream classroom within a certain time frame (de Jong, 2004). Consequently, program design and district exit policy play a crucial role in the schooling of ELLs.

### **Exit Policies**

Reviewing the educational research suggests that English language proficiency can take as long as seven years to achieve, depending on whether oral proficiency or academic language proficiency and achievement are being considered (Hakuta, Butler, & Witt, 2000). The delicate nature and lasting implications of second language acquisition demand that educators and school officials research the different approaches to effectively teach ELLs and develop and implement the appropriate program. Even with this urgency, there are discrepancies between states and districts in regard to identification and exiting procedures. They “differ widely in whether to use a cut-off score on a test and in what cut-off score to select to determine exit readiness” (De Avila, 1990, p. 23). The differences range from having no guidelines regarding which assessments to use to recommending or mandating the use of certain instruments, including standardized tests, English oral language proficiency tests, English literacy

tests, or teacher judgment (De George, 1988; Fleischman & Hopstock, 1993; Gandara & Merino, 1993; Rossell & Baker, 1988). This lack of set standards across states and districts makes it extremely difficult to compare the academic achievement of exited bilingual students.

A close analysis of the selected assessment instruments, the assessment standards, and other data used to make exiting decisions is a reflection of what the district perceives as the linguistic needs of ELLs, the purpose of the ELL program, and expectations for mainstream classroom teachers to be able to work with ELLs (De Avila, 1990; Nadeau & Miramontes, 1988). If a district believes in highly developed English oral proficiency, then the set exit policy will emphasize a focus on oral assessments rather than literacy development to determine ELL exit readiness. A belief that the purpose of a language program is to get students to transition into English mainstream classes will result in following the guidelines of an early-exit transitional bilingual program. On the other hand, a focus on bilingualism and biliteracy can result in exit guidelines also requiring native language fluency and mastery.

### **The Role of Exit Rates in Program**

When measuring the effectiveness of a bilingual program, the length of time students participate in the program receives much attention. It has been interpreted to imply that the more quickly students exit the program, the better the program (Gandara & Merino, 1993; Linquanti, 2001). The assumption that a direct relationship exists between exit rates and program success ignores that the rate of student progress through a bilingual program is influenced by individual student variables, program quality, and school variables (Gandara & Merino, 1993; Thomas & Collier, 2002). If exit rates are

used as the measure of effectiveness, then specific contextual variables need to also be included. The comparison of programs based solely on exit rates does not necessarily reveal a true picture of the quality of the program, especially when there are notable inconsistencies with exiting practices and standards.

### **Purpose of the Study**

The purpose of this research study was to examine the long-term academic success of students formerly served in a bilingual education program in the study district to identify achievement patterns and predict future achievement as measured by standardized test scores. The groups of students were arranged in two categories: (a) *Early Exit*-students who were exited from the bilingual program at the completion of first or second grade and (b) *Late Exit*-students who were exited from the bilingual program at the completion of third or fourth grade. These labels of *Early Exit* and *Late Exit* categories as stipulated in this research study significantly differ from the meaning attributed to the traditional early and late program exit connotation. For lack of a more descriptive term to aid in the conceptualization of the different grades of exit, the *Early* and *Late* exit labels are unique to the data analyzed and discussed in this research study.

The goal was to examine academic achievement patterns of former bilingual students as participants in the general education program. For the purpose of this research study, former bilingual students were defined as students who were classified as limited English proficient (LEP) upon entry in U.S. schools; qualified for and were served in the bilingual program; met exit criteria from the bilingual program; and were enrolled full-time in a mainstream classroom.

Since one of the underlying goals of education is long-term sustained academic

achievement, a district's accountability is not complete if it focuses only on the achievement patterns of ELLs as they are still classified as LEP. While this measure gives current short-term feedback, it does not fully assess whether the program succeeded in preparing the students for effective participation in a mainstream setting (de Jong, 2004). Thus, program evaluations must go beyond the achievement data of current ELLs and include the level of performance of students who met the exit criteria of the bilingual program in the general education setting.

The bilingual program plays a major part in students' academic career in the state of Texas, especially in the study district, where the number of ELLs has gradually increased over the years to surpass 20,000 students. By analyzing the achievement, as measured by the TAKS test, of students who previously participated in the program and met exit criteria, the researcher was able to support either a continuation of the early-exit transitional bilingual program or the adoption of a late-exit bilingual program. This recommendation will provide more consistency in the application of the program across the district. This uniformity has proven to be difficult to establish in the study district, considering the site-based management of the 31 elementary campuses.

### **Research Questions**

In the study district, the regulations outlined in the Texas Administrative Code are those that guide district special language program exiting policy. All campus Language Proficiency Assessment Committees (LPAC) are trained annually to review exit guidelines, commencing with first grade. The district exit criterion for each grade level is summarized in Table 1. The district exit guidelines are in alignment with those outlined by TEA. The 2010 state exit criteria is summarized in Table 4. In order to ensure

that students who met exit criteria from the bilingual education program continue to have the same level of success in the general education program, the 2010 reading and math TAKS results for the two categories of former bilingual students enrolled and assessed in fifth and eighth grade were analyzed and compared. The following research questions guided this study:

Research Question One: Do former ELLs who met exit criteria from the bilingual education program demonstrate sustained academic achievement in reading and math, as measured by standardized test scores?

Research Question Two: Does grade of exit represent a key predictor of future student academic performance, as measured by standardized test scores, for former ELLs who met exit criteria from the bilingual education program?

Table 1

*Summary of Study District Exit Criteria for Each Grade Level*

Student's Grade Level	OLPT Score (English)	TAKS Reading (English)	TAKS Writing (English)	TELPAS Writing	ITBS/ITED Reading and Language
1 <sup>st</sup>	FES	N/A	N/A	Score  <i>Early Writer on IPT writing</i>	>40 <sup>th</sup>  percentile in both sections
2 <sup>nd</sup>	FES	N/A	N/A	Advanced High	> 40 <sup>th</sup>  percentile on both sections
3 <sup>rd</sup>	FES	Passed	N/A	Advanced High	N/A
4 <sup>th</sup>	FES	Passed	Passed	N/A	N/A
5 <sup>th</sup>	FES	Passed	N/A	Advanced High	N/A
6 <sup>th</sup>	FES	Passed	N/A	Advanced High	N/A

Table 1 (continued)

*Summary of Study District Exit Criteria for Each Grade Level*

Student's Grade Level	OLPT Score (English)	TAKS Reading (English)	TAKS Writing (English)	TELPAS Writing	ITBS/ITED Reading and Language
7 <sup>th</sup>	FES	Passed	Passed	N/A	N/A
8 <sup>th</sup>	FES	Passed	N/A	Advanced High	N/A
9 <sup>th</sup>	FES	Passed	N/A	Advanced High	N/A
10 <sup>th</sup> -12 <sup>th</sup>	FES	Passed	N/A	N/A	N/A
ELA Test					

The researcher searched for academic achievement patterns of 2009-2010 fifth and eighth grade students who exited the bilingual education program at the conclusion of first, second, third, or fourth grade. The data was analyzed to note whether significant differences in long-term sustained academic achievement existed between these groups, specifically between the two targeted categories of students. Additionally, the researcher made recommendations concerning the form of transitional bilingual program model that yielded higher academic achievement after meeting exit criteria from the bilingual education program, as supported by 2010 TAKS scores in the study district: early-exit or late-exit.

## **Significance of the Study**

Proponents and opponents of bilingual education have used the academic achievement of ELLs to argue for or against the implementation of the program. Labeled “advocacy-oriented” by August and Hakuta (1997), these studies typically compare the outcomes of bilingual programs in the first three years of implementation and have focused on the achievement patterns of participating students still classified as ELL. The lack of tracking former bilingual students in the current accountability system supports a perception that bilingual teachers have the sole responsibility of meeting the needs of identified students. Once these students are exited from the program, they are treated as native English speakers (Cummins, 2000; Lucas & Wagner, 1999, Shannon, 1990). Their educational achievement blends with that of native English speakers, and it tends to be ignored from a bilingual perspective because the students “no longer fall within the confines of specialized language services” (de Jong, 2004, p. 5). The inclusion of the sustained academic achievement of former bilingual students in the evaluation of such a program acknowledges that the entire school district is accountable for the learning of ELLs and not only the bilingual program. Additionally, it also emphasizes that this accountability includes the entire educational career of an ELL and not only the few years when bilingual/ESL program services were provided (de Jong, 2004).

The reading and math TAKS results of former bilingual students, sorted by grade of exit, provided a detailed perspective of how effective the study district was educating its growing ELL population. A recommendation to adopt a certain exit policy was made based on which group of students maintained the academic achievement demonstrated at the time exit criteria was first met.



## Overview of Methodology

A quantitative method was used for this study. The 2010 reading and math TAKS scores of enrolled fifth and eighth grade former bilingual students were analyzed and compared by the researcher. The TAKS report was compiled and organized by bilingual program exit date. This archival data was abstracted from the Student Management System (SMS), the PEIMS program in place in the study district. The local identification number was used to ensure that a student's TAKS data were not used more than once and to verify that each student participated in the bilingual program and met exit criteria in the indicated time frame.

The percentage of students in each of the two targeted categories who met the set TAKS passing standard in the specified content areas was analyzed to note any academic achievement patterns associated with either an early or late-exit from the bilingual education program. The data were also examined to determine the level of content area curriculum mastery of the two sets of former bilingual students, as determined by reading and math TAKS *Commended Performance* achievement. The ultimate goal was to identify which category of students demonstrated a higher achievement pattern: those who exited early or late.

The second question required data analysis using three types of statistics: *t*-test, linear regression, and logistic regression. Two-sample *t*-tests with equal variances were performed by assessed grade levels for reading and math and by program exit category in order to determine if there were significant differences between the raw score means of the two exit categories. The TAKS raw data were analyzed using a linear regression to determine whether the differences in means of the two categories of exited students were

significant. Logistic regressions were used to determine the probability of commended performance achievement depending on time of exit from the bilingual education program. These results supported a recommendation of either an early or late-exit from the bilingual education program.

### **Organization of the Study**

The research study is divided into five chapters. The research questions are introduced in chapter one. The introduction sets the background for the parameters that shaped the education of ELLs in the U.S. public school system, including trends, exit policies, and the role of exit rates in current program evaluations. This is followed by the purpose and significance of the study. Finally, the chapter concludes with the overview of the methodology used to identify, gather, and analyze the archival data used in the study. At the end of the chapter, the definition of terms adds clarity to specialized vocabulary used to various degrees when discussing different aspects of the research topic.

Chapter two reviews the related literature. It begins with a detailed analysis of the demographics of the U.S. and Texas population, showing changes in the last decade, and its impact on the make-up of public school student enrollment. Next, the history of bilingual education is reviewed, including the civil rights context and the evolution of the Bilingual Education Act. An explanation of the different types of bilingual education programs that resulted from the historical and legal framework follows the history section. At the end of the chapter, the inclusion of former bilingual students in accountability and the documented academic achievement of former bilingual students are discussed by the researcher.

Chapter three outlines the methodology used in the research study. The purpose is explained and the population of the study district is described to set a frame of reference of the participants and educational program that was the basis of the study. The current model of bilingual education in the district is defined, the process of student identification and program placement is illustrated, and the district's exit criteria and its alignment with state guidelines are outlined. Additionally, the instrumentation of TAKS as a state assessment is presented, citing its high reliability and the development process. The procedure for gathering and analyzing the archival data, along with the source and organization of data, is also included in this chapter. Furthermore, the independent and dependent variables of this correlational study are identified. The last section explores the scope and limitations of this research study.

Chapter four reintroduces the purpose of the study and two research questions in order to validate the data analysis. The chapter is divided into four sections: Introduction, Research Question One, Research Question Two, and Data Summary. The descriptive data was outlined in the introduction, and generalizations about the different groups of study participants were made. The data analysis needed to answer the first question is explained using overall category totals and percentages. The information is presented in multiple tables to allow for different perspectives of data analysis. The second question required data analysis using three types of statistics: *t*-test, linear regression and logistic regression. Two-sample *t*-tests with equal variances were performed by assessed grade levels for reading and math and by program exit category in order to analyze significant differences between the raw score means. The TAKS raw data is analyzed using a linear regression to determine whether the differences in means of the two categories of exited

students are significant. Logistic regressions are used to determine the probability of commended performance achievement depending on grade of exit from the bilingual education program. Chapter four concludes with a brief summary of the data.

Finally, chapter five summarizes the research study findings. The study's descriptive data are discussed in detail and note conclusions about meeting TAKS standards and commended level achievement. In addition, the results of the *t*-test, linear regression, and logistic regression analysis are analyzed. The significance of the mean differences as they relate to the overall reading raw scores on the *t*-tests is explained. In regards to the logistic regression, the coefficients listed in the results are the point of scrutiny since they identify the type and direction of the relationship between the study's dependent (raw score) and independent (time of exit) variables. The odds ratio included as part of the logistic regression output also support the negative relationship between the variables. In this case, the data are described as a likelihood of occurrence as it related to *Commended Performance* achievement. Particularly, a percentage is given as the likelihood of achieving a commended level depending on the time of exit.

The implications of the study on educational practices are also discussed in chapter five. Namely, major findings are analyzed and evaluated, and their application to current educational practices is identified by the researcher. Also included are the limitations of the study. They are an expansion of those discussed at the end of chapter three.

Chapter five concludes with recommendations for future study. The list concentrates on topics that can expand on the results of this research study. It also suggests other areas that have not been explored in the research. Exploration and

research in these areas will contribute to the existing research and help educators better understand the issues affecting the education of ELLs.

### **Definition of Terms**

The following terms are used throughout the research study. The definitions assist in understanding their role in the education of ELLs in U.S. schools.

- *Bilingual education* is a method of using the student's native language to accelerate the acquisition of English, incorporating the use of two languages for instructional purposes in the classroom.
- *Commended Performance* in reading is high academic achievement; considerably above state passing standard; a thorough understanding of the TEKS reading curriculum. In math is high academic achievement; considerably above state passing standard; thorough understanding of the mathematics TEKS curriculum.
- *English as a Second Language (ESL)* is an instructional program that is used with students who speak different native languages in the same classroom and taught by teachers trained in principles of language acquisition and language methods but who are not necessarily fluent in the students' home languages.
- *English Language learner (ELL)* is the most recent term used to describe students who are unable to communicate effectively in English because their primary language is not English, and they have not developed fluency in the English language. This acronym is sometimes used interchangeably with LEP.
- *Early-exit* is the meeting of dismissal standards at the completion of first or second grade.

- *Equal Educational Opportunities Act (EEOA)* is part of the 1974 amendments to the Elementary and Secondary Education Act. This legislation affirms that no state shall deny educational opportunity based on race, color, sex, or national origin.
- *Late-exit* is the meeting of dismissal standards at the completion of third or fourth grade.
- *Language Proficiency Assessment Committee (LPAC)* is a required group of individuals at the campus level responsible for determining the best instructional program for English language learners. It functions as a link between the home and the school with making appropriate decisions regarding placement, instructional practices, assessment, and special programs that impact students.
- *Limited English proficient (LEP)* refers to students who are unable to communicate effectively in English because their primary language is not English, and they have not developed fluency in the English language. This acronym is sometimes used interchangeably with ELL.
- *Limited English speaking ability (LESA)* refers to students who are unable to communicate effectively in English because their primary language is not English, and they have not developed fluency in the English language. This acronym was regularly used to describe this special population of students in the 1960s and 1970s.
- *No Child Left Behind (NCLB)* is the federal act enacted on January 8, 2002 that requires states to create their own assessment and accountability systems to ensure that all student subgroups reach a minimum level of academic achievement. It requires states to demonstrate progress each year with improving the percentage of

student mastery in reading and math and in narrowing the achievement gap between various student subgroups

- *Office of Civil Rights (OCR)* is a governmental agency that monitors compliance with all federal civil rights laws that prohibit discrimination in programs or activities receiving funding from the U.S. Department of Education.
- *Public Education Information Management System (PEIMS)* is a data system that encompasses all information requested and received by TEA about public education, including student demographic and academic performance, personnel, financial, and organizational information.
- *Student Management System (SMS)* is the student-level data collection system used in the study district that allows for the collection of comprehensive data to meet federal and state reporting requirements.
- *Texas Assessment of Academic Skills (TAAS)* is a standardized test used in Texas between 1991 and 2002. It was replaced by the TAKS test from 2003 to 2009.
- *Texas Assessment of Knowledge and Skills (TAKS)* is the standardized assessment used in Texas to measure student achievement in reading, writing, math, science, and social studies.
- *Texas English Language Proficiency Assessment System (TELPAS)* is an assessment program for English language learners (ELLs). It assesses the English language proficiency of K–12 ELLs in four language domains: listening, speaking, reading, and writing. English language proficiency assessments in grades K–12 are federally required to evaluate the progress that ELLs make in becoming proficient in the use of academic English.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **United States and Texas Population**

The increasing number of linguistically diverse students in U.S. public schools continues to challenge the manner in which public schools are educating this special population. Across the country, public schools are opening their doors to more and more children who speak a language other than English. Nearly every district faces the challenge of helping these children become proficient in the English language while also providing them with a high-quality and rigorous education. This task is especially challenging because ELLs bring a range of individual differences to school that can affect how quickly they learn English. To complicate the matter further, in many places the search for effective instructional practices has taken a back seat to other agendas having more to do with political ideology than honest inquiry (Preparing English language learners, 2007).

The Hispanic or Latino (of any race) population of the U.S., according to Census 2010 data, was over 50 million (50,477,594) or 16.3% of the total U.S. population. This represents an increase from the 2000 census of 43% for the Hispanic population. The Hispanic population increase in Texas paralleled that of the nation over the same span of 10 years with a 41.8% increase and more than nine million (9,460,921) Hispanics residing in the state. According to these figures, the Hispanic population alone represents 37.6% of the Texas population. Though members of this demographic group are not all native Spanish-speaking, the constantly growing Hispanic sector has a direct impact on the number of ELLs enrolled in Texas and in the U.S. The population changes of the



U.S. and Texas are summarized in Table 2.

Table 2

*U.S. and Texas Hispanic or Latino Population: 2010 U.S. Census*

	Hispanic Population	Hispanic Population	Percentage Change
	Number	Percentage	2000 to 2010
US	50,477,594	16.3%	43.0%
Texas	9,460,921	37.6%	41.8%

Across the nation, the number of students from non-English speaking backgrounds continues to rise. They represent the fastest growing segment of the student population by a wide margin. From the 1997-1998 school year to the 2008-2009 school year, the number of identified ELLs enrolled in public schools increased from 3.5 million to 5.3 million, an increase of 51% (National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs, 2011). During the same time frame, the general population of students grew to 49.5 million, an increase of 7.2% (English-language learners, 2011). The identified students speak more than 400 languages, but nearly 80% are native Spanish speakers (Kindler, 2002). It is projected that ELLs will comprise over 40% of elementary and secondary students by 2030 (Flynn & Hill, 2005).

Between 1995-1996 and 2005-2006, the percentage of public school students identified as ELLs increased from 6.8% to 10.3% in the U.S. and from 12% to 14% in Texas (NCELA, 2008). In Texas, the number of students identified as ELLs grew by 47% between 1999-2000 and 2009-2010, with actual numbers being 555,470 in 1999-

2000 and 817,074 in 2009-2010 (TEA, 2010). The growth in general enrollment during the same time frame in Texas was 22%, less than half of the ELL population growth (TEA, 2010). In the fall of 2010, PEIMS identified Spanish as the language spoken by 91% of the enrolled ELLs in Texas schools (TEA, 2010). The student population and home language information of the U.S. and Texas are summarized in Table 3.

Table 3

*2009-2010 U.S. and Texas Student Population and Spanish Home Language*

	2009-2010	2009-2010	2009-2010
	Student	ELL	Percent of ELLs with
	Population	Population	Spanish Home Language
U.S.	49,292,507	5,277,128	80%
Texas	4,674,832	817,074	91%

The increasing Hispanic population in the U.S. and Texas, combined with the growth in the number of ELLs expand the need of public schools to research and provide quality special language instruction. The growing numbers of ELLs pose unique challenges for educators striving to ensure that these students have access to the core curriculum and acquire academic knowledge, as well as English language skills. The instructional needs of ELLs vary just as much as their different levels of English proficiency. In fact, the range of skills is wider within the group of ELLs than it is between ELLs and their non-ELL classmates (National Assessment of Education Programs, 2005). These different needs can affect how quickly they acquire English and master academic skills in the various content areas. Native language instruction seems to

have long-term benefits for learning English, though other program factors are also important to ELLs' success. Although some debate lingers, bilingual programs seem to be more effective.

In its massive 2006 research review, the National Literacy Panel on Language Minority Children and Youth concluded that oral proficiency and literacy in ELLs' first language can facilitate literacy development in English, and inclusion of first-language instruction in ELL programs can have long-term benefits (August & Shanahan, 2006). This conclusion was supported by five recent meta-analyses comparing bilingual and English-only programs (Genesee, Lindholm-Leary, Saunders, & Christian, 2006; Krashen & McField, 2005; Rolstad, Mahoney, & Glass, 2005; Slavin & Cheung, 2003; Thomas & Collier, 2002). The importance of instruction in the native language is the underlying premise of the need for bilingual programs in the education of ELLs. There are various types of bilingual programs that range in the use of the native language. Independent from what the research suggests about the benefits of one type of bilingual program over another, other factors such as length of program participation, availability of instructional resources, the political atmosphere, and legal mandates have influenced the course of public school instruction for ELLs.

### **History of Bilingual Education**

**Civil Rights Context.** *Bilingual education* is a term that has both a specific and generic meaning with respect to children who are not proficient in the English language. Bilingual education is not only a distinct instructional approach, but it is also a term that refers broadly to the varied efforts used to educate and serve LEP students (Osorio-O'Dea, 2001). In this review of literature, especially the statutes and regulations that

have governed the education of these students, the term referring to *language minority students* evolves from students with limited English speaking ability to students with limited English proficiency to English language learners. Depending on social issues, school policies, and accountability systems popular during various eras, one term has been replaced by another. For the purpose of this literature review, the term *bilingual education* is used in both its precise and broad meanings.

Though current research advocates for the provision of academic support for bilingual education, this has not always been a popular practice in the history of public education. Towards the late 1960s, this population of students received little to no assistance in public schools. The Office of Civil Rights (OCR) was alerted and issued the memorandum titled “Identification of Discrimination and Denial of Services on the Basis of Natural Origin,” which called for equal participation in educational programs and directed school districts to correct language deficiencies of ELLs (Horn, 2009). The memorandum did not mandate corrective actions. Consequently, the common practices of permanently placing students who did not speak English in special programs, not providing parents with school information in their native language, and excluding this group of students from participation in school programs or activities continued (OCR, 2000). Nevertheless, the education of LEP students was shaped by federal civil rights laws that built the service delivery framework (Osorio-O’Dea, 2001).

Title VI of the Civil Rights Acts of 1964 prohibits discrimination on the basis of race, color, or national origin by recipients of federal financial assistance. Though it does not specifically refer to LEP individuals as a protected class, court interpretations have extended the statute to include LEP students. The first of these interpretations was

rendered in the Supreme Court decision in *Lau v. Nichols* (1974), giving force to the movement for equal access to education for language minority children (Teitelbaum & Hiller, 1977). This class action suit was filed against the San Francisco Unified School District on behalf of 1,800 Chinese-speaking students who could not understand the language of instruction. It was stipulated that the English-only classrooms were denying these children equal educational opportunity and that the district's failure to provide bilingual education not only violated Title VI of the Civil Rights Act, but it also violated the equal protection clause of the 14<sup>th</sup> Amendment (Horn, 2009). The initial decision of the lower court was overturned by the Supreme Court, which held that by only providing the same instruction, materials, and curriculum, students who did not understand English did not have access to the benefits of a meaningful education (Reutter, 1994). Justice William O. Douglas further outlined the courts opinion,

Basic skills are at the very core of what these public schools teach. Imposition of a requirement that before a child can effectively participate in the education program he must already have acquired those basic skills is to make a mockery of public education. We know that those who do not understand English are certain to find their classrooms experiences wholly incomprehensible and in no way meaningful. (Lessow-Hurley, 2000, p. 38)

The Court's decision resulted in the Lau Remedies, a document outlining the comprehensive guidelines that had to be consistent with the Office of Civil Rights Memorandum to help non-English speaking children in their learning process in school while developing their English language skills (Feinberg, 2002). It required school

districts to identify all students whose home language was not English, assess their language proficiency, determine their academic level, place them in the appropriate instructional program, and provide educational opportunities equal to those provided to mainstream students (Brisk, 1998).

Although the Lau Remedies were designed to assist school districts develop programs to meet the educational needs of ELLs, they failed to create a standard method of determining success in those programs funded under the act. The main reason for this shortcoming was the absence of consistent research-based information concerning effective instructional delivery methods for language minority students (Treffner, 2003). Additionally, the emphasis placed by experts on the use of the native language and English as a means of instruction was difficult to implement due to the lack of economic means, absence of trained personnel, and the concern that bilingual programs promoted school segregation (Moran, 1988).

Additional guidance for implementing the Lau Remedies came in 1981 from the *Castañeda v. Pickard* court decision that ruled language minorities' civil rights were violated by educational neglect. Furthermore, school districts had the dual responsibility of ensuring that academic content instruction was accessible and that students were provided with English instruction (Horn, 2009). Using the Equal Educational Opportunities Act (EEOA), a three-part test was developed for determining if schools had failed to take appropriate action to help LEP students overcome language barriers. Programs designed to serve LEP students had to meet certain criteria, as outlined by the court. They must have adequate personnel and resources and be effectively implemented; be evaluated, after a trial period, and determined to be effective in

overcoming language handicaps; and be based on a theory that is educationally sound (Crawford, 1995).

**The Bilingual Education Act.** Noted as the first official federal recognition of the needs of students with limited English speaking ability, the Bilingual Education Act first was enacted in 1968. It has undergone four reauthorizations, with amendments, and reflects the needs of these students. The process began in 1967, when a bill was introduced by Texas Senator, Ralph Yarborough, to establish educational programs specifically for LEP students and led to the introduction of 37 other bills (Stewner-Manzanares, 1988). Collectively, they were merged into a single measure known as Title VII of the Elementary and Secondary Education Act (ESEA), or the Bilingual Education Act, and it was signed into law on January 2, 1968. Title VII was the first federal recognition that LEP students “have special educational needs” and that it is in the best interest of equal educational opportunity that bilingual programs addressing those needs are federally funded (Stewner-Manzanares, 1988, p. 1). The legislation recommended the creation of instructional programs where Spanish, as a native language, would be utilized while also teaching English as a second language. It further guaranteed equal access to education for language minority students and provided for instructional resources, funding for teacher training, and funding to develop materials and design programs to increase student achievement and parental involvement. Later authorizations of the legislation required native language and culture instruction and a transitional approach to bilingual education (ESEA Implementation Guide, 2002).

The Bilingual Education Act was amended for the first time in 1974 to clarify the intent and design of programs for LEP students by specifying program goals, capacity-

building efforts, and definition of a bilingual program. Because ESL programs were deemed insufficient, this amendment established the definition of a bilingual education program as one that provided instruction in the student's native language, as well as English, to allow for a smooth progression for the student through the educational system (Stewner-Manzanares, 1988). The legislation mandated bilingual education for students of limited English ability, and it determined that the major goal of bilingual education programs should be the acquisition of the English language with the purpose of "assimilating" these students into regular programs (Treffner, 2003). It also expanded financial assistance to schools in order to address the educational needs of all LEP students, not only the most disadvantaged. Nevertheless, the implementation of bilingual education programs was affected by economic and social pressures that called for changes during this time. The 1978 amendments to the Bilingual Education Act reflected some of these changes.

The 1978 amendments extended the Bilingual Education Act, "broadened the definition of eligible students," and specified the goals of transitional bilingual education (Stewner-Manzanares, 1988, p. 4). According to the changes, LEP students were to be prepared as quickly as possible to enter the regular classroom. Native language instruction was to be used in the bilingual classroom but only as students gained the necessary English proficiency. In addition, funding would no longer be available for programs designed only to maintain the native language (Crawford, 1987).

Increased flexibility in the implementation of programs for LEP students was addressed in the 1984 amendment to the Bilingual Education Act. It gave local districts



“a greater voice in deciding how LEP students should be taught” (Stewner-Manzanares, 1988, p. 4). Greater local control was a direct result of the withdrawal of the Lau Remedies in 1981 as “part of an effort to deregulate social, educational, and human services and to encourage state officials to be responsible for financing and monitoring the education of LEP students within their own districts” (Stewner-Manzanares, 1988, p. 6). Under the 1984 amendments, federal grants were awarded to transitional bilingual programs, developmental bilingual education programs, and special alternative instructional programs.

The Bilingual Education Act was reauthorized in the Hawkins-Stafford Elementary and Secondary Education Act of 1988. This legislation reflects a focus on the diversity of LEP students and approaches to their education (Stewner-Manzanares, 1988). This “pluralistic approach” to educating students “allows local school districts to provide the instructional program that best serves their particular LEP population,” citing that the federal role is to encourage “local flexibility, creativity, and innovation” to meet the needs of LEP students (Stewner-Manzanares, 1988, p.8). Currently, Texas permits districts to decide what type of bilingual education program is needed by their student population.

### **Bilingual Education Programs**

The need to amend the Bilingual Education Act four times in the last four decades illustrates the evolution of education for ELLs in U.S. classrooms. The various changes resulted in clarification of offered language programs, in part, based on identification of additional needs. However, the political atmosphere that prevailed during certain time periods played a key role in the content of adopted legislation. Although official policy

sanctions a range of program options, bilingual education continues to be viewed within a context based on the primacy of English language and literacy.

In spite of research (Collier, 1995; Ramirez, Yuen, Ramey, & Pasta, 1991; Thomas & Collier, 1997) that found certain programs and practices that encourage the development of literacy and academic learning in the native language are more effective and efficacious, not only in developing English but in improving overall students achievement, bilingual programs continue to be vastly different with respect to the use and development of literacy in the native language, “ranging from total absence to benign neglect to active involvement” (Hornberger, 1994, p. 104). No single bilingual education model fits the needs of all ELLs. A variety of program models offers a comprehensive approach by which students can become fluent English speakers. These models begin instruction in the primary language of the ELL while developing their language skills in English. They include dual language or two-way immersion; late-exit, transitional bilingual education; and early-transitional bilingual education (Linquanti, 1999).

The dual language or two-way immersion model is more common at the elementary level and involves teaching the core curriculum in two languages. Students in this program are grouped so that half the students in the class are native English speakers and the other half are native speakers of a language other than English. The goal is for all students to attain proficiency in both languages (English-language learners, 2011). Typically, students in first grade receive 80%-90% of their instruction in the native language and 10%-20% of their instruction in the other language (Horn, 2009). By fourth grade, students receive instruction for half the school day in each language. In a few

programs, starting with first grade, students receive instruction in both languages 50% of the time.

Another type of program is called maintenance, developmental, or late-exit bilingual education. ELLs typically stay in these programs throughout elementary school or from grades K–5 or 6. Similar to those teaching in transitional bilingual education, teachers in this program should be proficient in English, proficient in their native language, and state certified at the respective grade level and in bilingual education (English-language learners, 2011). Students learn literacy and content areas in their native language as they are taught ESL. However, their transition to instruction in English is more gradual than in transitional bilingual education, and they continue to receive instruction in their native language throughout elementary school. When students progress from elementary school to middle school, they are typically placed in all-English classrooms and no longer receive bilingual education services (Horn, 2009).

The most common program is transitional bilingual education, which typically is offered to ELLs in the elementary grades for up to three years, most often from first to third grade. Students usually receive some amount of native language instruction so they do not fall behind in their literacy or content learning as they are acquiring English (Rennie, 1993). The amount of time they are taught literacy and content in the native language varies according to their level of English language proficiency. By the end of third grade, most, if not all, of their literacy and content instruction is in English. Teachers in these programs are supposed to be proficient in English, proficient in the native language, and state certified for teaching at the particular grade level and in bilingual education. Although funding for this type of program is available for three

years, individual students are exited from the program as soon as they are classified as English proficient (English-language learners, 2011). Once exited, they are placed in all-English classrooms without additional second language services.

### **Inclusion of Former Bilingual Students in Accountability**

Independent of what bilingual education program is offered, states also have to comply with provisions for ELLs in the NCLB Act of 2001, the most recent version of the Elementary and Secondary Education Act. With the enactment of this law, school districts are required to disaggregate and report the standardized test scores of ELLs, as well as other specified subgroups of students. School districts are required by the law to meet targets set by their states for “adequate yearly progress” (AYP) for ELLs or face sanctions. This recent inclusion on ELLs in accountability and school reform efforts has placed bilingual education programs under scrutiny regarding their ability to overcome the language barriers ELLs encounter when entering U.S. schools (de Jong, 2004).

For measuring accountability, the law requires states to develop English language proficiency standards and implement English language proficiency tests. The English proficiency standards had to be linked to state academic standards. Regulations for the law stipulate that ELLs must be tested in math, beginning with the first round of state exams, after the students enter a U.S. school and in reading after they have been in a U.S. school for at least one year (English-language learners, 2011). However, many educators and researchers have contended that state content assessments have not been valid and reliable for ELLs. To date, few states have met the law’s AYP goals for ELLs. During the 2007-08 school year, only 11 states met their accountability goals for ELLs, according to an analysis of federal data by the Washington-based American Institute for

Research (Zehr, 2010). Since states set their own goals for ELL achievement and have their own definitions for ELLs, researchers claim that it is not possible to compare ELL performance among states (English-language learners, 2011).

An issue that continues to permeate discussions about how to improve achievement for ELLs is which education approach serves them best—bilingual education or English-only instruction. From 1998 to 2002, voters in Arizona, California, and Massachusetts, approved ballot measures to curtail bilingual education. A review of research studies conducted by the National Literacy Panel on Language-Minority Children and Youth concluded that bilingual education has an edge over English-only methods (August & Shanahan, 2006). Still, in the first random assignment study to compare the effectiveness of bilingual education and English-immersion approaches with ELLs over a period as long as five years, researchers found that Spanish-speaking children learned to read English equally well, regardless of whether they were taught primarily in English or in both English and their native language. That study was conducted by Johns Hopkins University researchers using the “Success for All” reading program, which is available in English or Spanish. It was underwritten by the Education Department’s Institute of Education Sciences (Slavin, Madden, & Calderon, 2010).

With few exceptions, the effectiveness of bilingual education programs has been evaluated on the performance of ELLs still being served through the program. While providing some information about the performance of LEP students, these program evaluations are unable to describe what happens to ELLs once the latter have been placed in a mainstream classroom on a full-time basis after being reclassified as “fluent English proficient” (de Jong, 2004).

## **Documented Academic Achievement of Former Bilingual Students**

Few studies have explored the academic achievement of former ELLs since they are rarely tracked once they have exited the bilingual program, and few states disaggregate and report their statewide testing data for former ELLs. An examination of the achievement patterns of states with high ELL enrollment that do report such data (e.g., Florida, California, New York, and Texas) illustrates that former ELLs tend to lag behind fluent English-speaking peers, particularly at the secondary level (de Jong, 2004). The Florida Department of Education (2001) reports that between 12%-20% percent fewer former ELLs pass the state's test than fluent English-speakers in math and reading at grades 4, 5, 8, and 10. According to the same Florida report, former ELLs tend to perform better on math tests than on reading or content area (e.g., science, social studies) tests. SAT-9 data from California suggest that about 10%-12% fewer, former ELLs score above the 50% percentile in science and social studies in grades 9-11, whereas their scores for math at these grade levels essentially parallel those of English-only students (California Department of Education, 2001). In 2000, the New York City Board of Education published a longitudinal study, the ELL Subcommittee Research Studies Progress Report. The researchers studied the number of ELLs who entered the city's public schools in the fall of 1990 in kindergarten and first grade or in the fall of 1991 in grades 2, 3, 6, and 9. They tracked the educational progress of these students for nine and eight years, respectively. The following findings were included in the report:

- There was a strong relationship between the time of exit from bilingual/ESL programs and proficiency in both English and the home language.

- In general, students who exited bilingual/ESL programs within three years (1991-1994), outperformed the city overall on the citywide reading test administered in 1998. Those who exited after four years approached the performance of the city overall.
- Students who exited the programs within four years outperformed the city overall on the citywide mathematics test in 1998.
- In general, former ELLs performed well on standardized tests of reading and mathematics when they entered mainstream classes.
- In most cases, students who exited the bilingual/ESL programs relatively late (after six years) outperformed those who had exited these programs earlier.
- Late-entry ELLs who did reach the program exit criterion were highly successful in completing high school. The graduation rates for ELLs who entered the New York City schools in grades 6 and 9 and achieved the bilingual/ESL program exit criterion were higher than the general student population.

A more recent study by Ester de Jong at the University of Florida in 2004 also explored the academic achievement patterns of former ELLs. The academic performance results of former participants in the bilingual program included: (a) although the length of program participation did not appear to play a significant role in predicting future student success, exited bilingual education program students' scores slightly improved as they exited at higher grade levels and (b) in general, fourth grade exited students' score distributions resembled those of general education students at the district and state level for English, language arts, math, and science.

Nevertheless, non-cohort standardized test data from Florida and California suggested a widening rather than a closing of the gap between regular education students and former ELLs for reading, as well as the content areas for students at higher grade levels (California Department of Education, 2001). On the other hand, quasi-longitudinal data from bilingual programs suggested that ELLs may close the gap over time, provided they had a strong bilingual schooling base for more than four years (Thomas & Collier, 2002).

In Texas, academic achievement results have mostly investigated the impact of bilingual treatments on the academic performance of bilingual students. Results generally reflected benefits to ELLs who were taught in their native language and introduced to English in a balanced fashion with teaching new concepts in the home language (Cummins, 1981; Thomas & Collier, 1997). Long-term studies generally suggested positive results after five to seven years. Those bilingual students who learned mostly in their home language performed similarly or better than their native English counterparts.

Research studies related to students who have successfully exited various bilingual education programs are limited. The only type of such data is found in the 1998-1999 Austin Independent School District (AISD) Bilingual/ESL Programs Evaluation Report by Rosa Maria Gonzalez. Three groups of former LEP students were observed on a yearly basis to measure their annual performance. According to the executive summary of this report, "the achievement of the three groups of former LEP students generally surpassed AISD overall percentages passing the TAAS" (Gonzalez, 1999, p. 1). With only two exceptions on *All Tests Taken*, the percentages passing were



between 81% and 100% (Gonzalez, 1999). This type of program evaluation is rare in Texas since the effectiveness of bilingual programs has been evaluated on the performance of ELLs still being served through the program (de Jong, 2004). While providing information about the performance of LEP students, these program evaluations are unable to describe what happens to ELLs once the latter have been placed in general education classrooms on a full-time basis after meeting exit criteria from the program.

This research study focused on whether ELLs were academically successful in the years after they exited the bilingual program. By analyzing TAKS data of former bilingual students according to their grade of exit, it was determined if exiting after a specific grade level results in higher long-term academic achievement, as measured by fifth and eighth grade reading and math TAKS scores. The inclusion of this type of data provided a better understanding of whether the school district had been able to provide equal educational opportunities for this group of students.

## CHAPTER THREE

### METHODOLOGY

#### **Purpose**

The purpose of this research study was to examine the long-term academic success of students formerly served in a bilingual education program in the study district to identify achievement patterns and predict future achievement, as measured by standardized test scores. Specifically, this study compared the 2010 reading and math TAKS data of former bilingual education students who met program exit criteria at the conclusion of first/second or third/fourth grade. For the purpose of this study, former bilingual education students are defined as those students who were classified as an ELL upon school entry, were served in a bilingual education program, met program exit criteria in grades first through fourth, and enrolled full-time in a general education classroom after program exit. In addition to analyzing the general academic achievement patterns of this group of students in reading and math, the study also examined the grade at which students met exit criteria from the bilingual education program.

#### **Population**

The two categories of students that were compared were: 1) *Early* - students who met exit criteria from the bilingual program at the completion of first or second grade and 2) *Late* - students who met exit criteria from the bilingual program at the completion of third or fourth grade. Again, the labels of *Early* and *Late* exit categories as stipulated in this research study differ from the meaning attributed to the traditional early and late program exit connotation and are unique to the specific data analyzed and discussed. The students that comprised the two targeted categories were enrolled in the study district.

However, due to student mobility, all students were not necessarily served in the district's bilingual education program during their entire ELL classification.

The study district is a medium-sized school district located in southeast Texas and covers 111 square miles. The district's current student enrollment is slightly over 64,000 students, with more than one-third classified as ELL and more than 14,000 served in the bilingual education program. The district has offered bilingual education services since 1976 and has full curriculum alignment in English and Spanish. In addition, there is a closed-loop approach to rigorous classroom instruction that includes needs assessment, curriculum writing, common assessment development, and a revision process for all instructional programs, including bilingual education.

This research study explored two questions. The first question is whether former ELLs who met exit criteria from the bilingual education program demonstrate sustained academic achievement in reading and math, as measured by standardized test scores. The second research question examined whether grade of exit represents a key predictor of future student academic performance, as measured by standardized test scores, for former ELLs who met exit criteria from the bilingual education program.

The district's bilingual education program has historically served native Spanish speaking students who have qualified for the program. Refer to Figure 1 and Figure 2 for program qualification and placement. Although the study district has offered Vietnamese bilingual education for the past two years, this research study focuses exclusively on former Spanish bilingual education students. The bilingual education program in place in the study district was classified as early-exit transitional. The TEA defines the early-exit transitional bilingual education program as "a bilingual program that serves students

identified as students of limited English proficiency in both English and Spanish and transfers a student to English-only instruction not earlier than two or later than five years” after initial program placement (Texas Education Agency, 2011, p. 5).

Figure 1

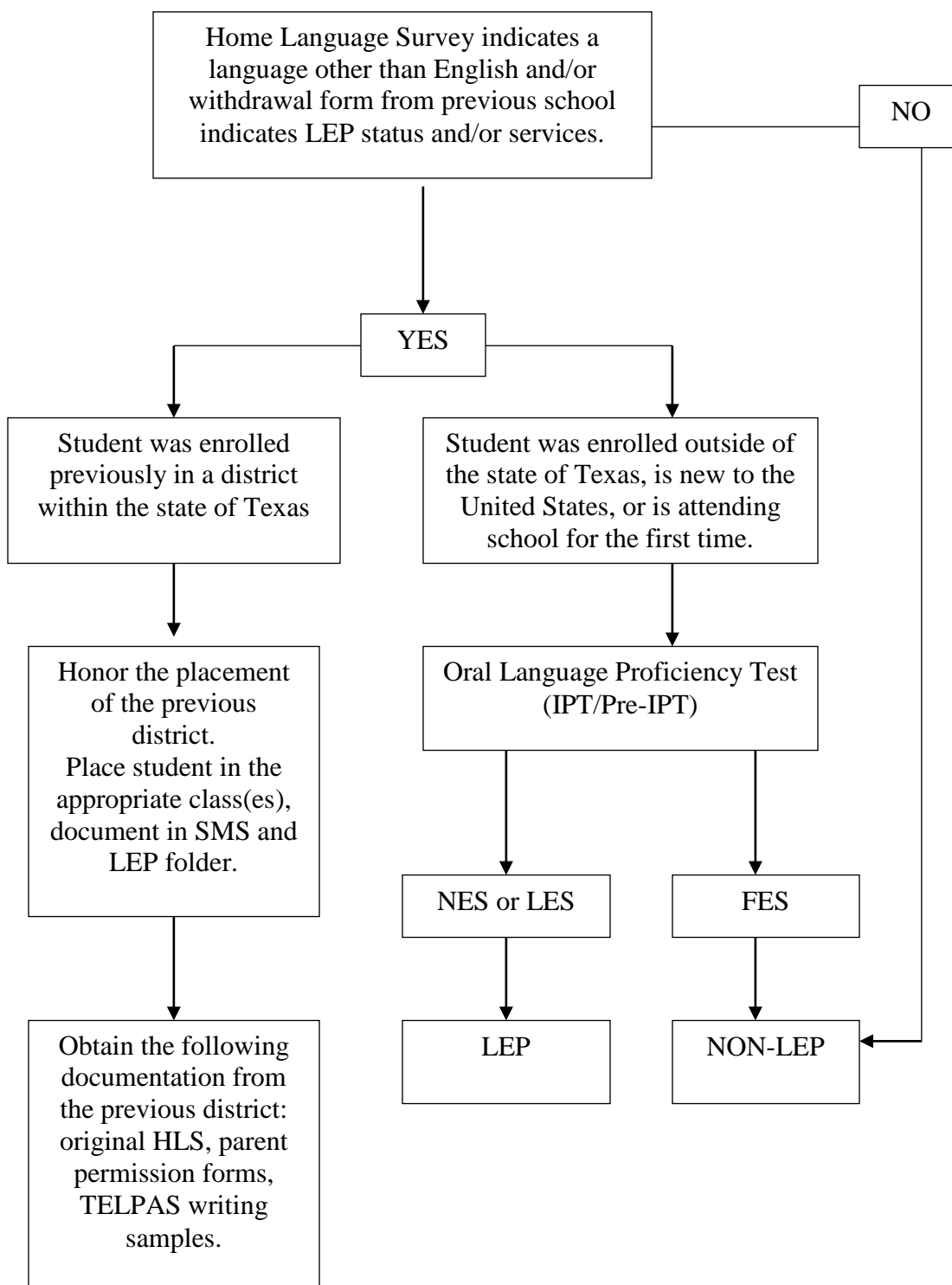
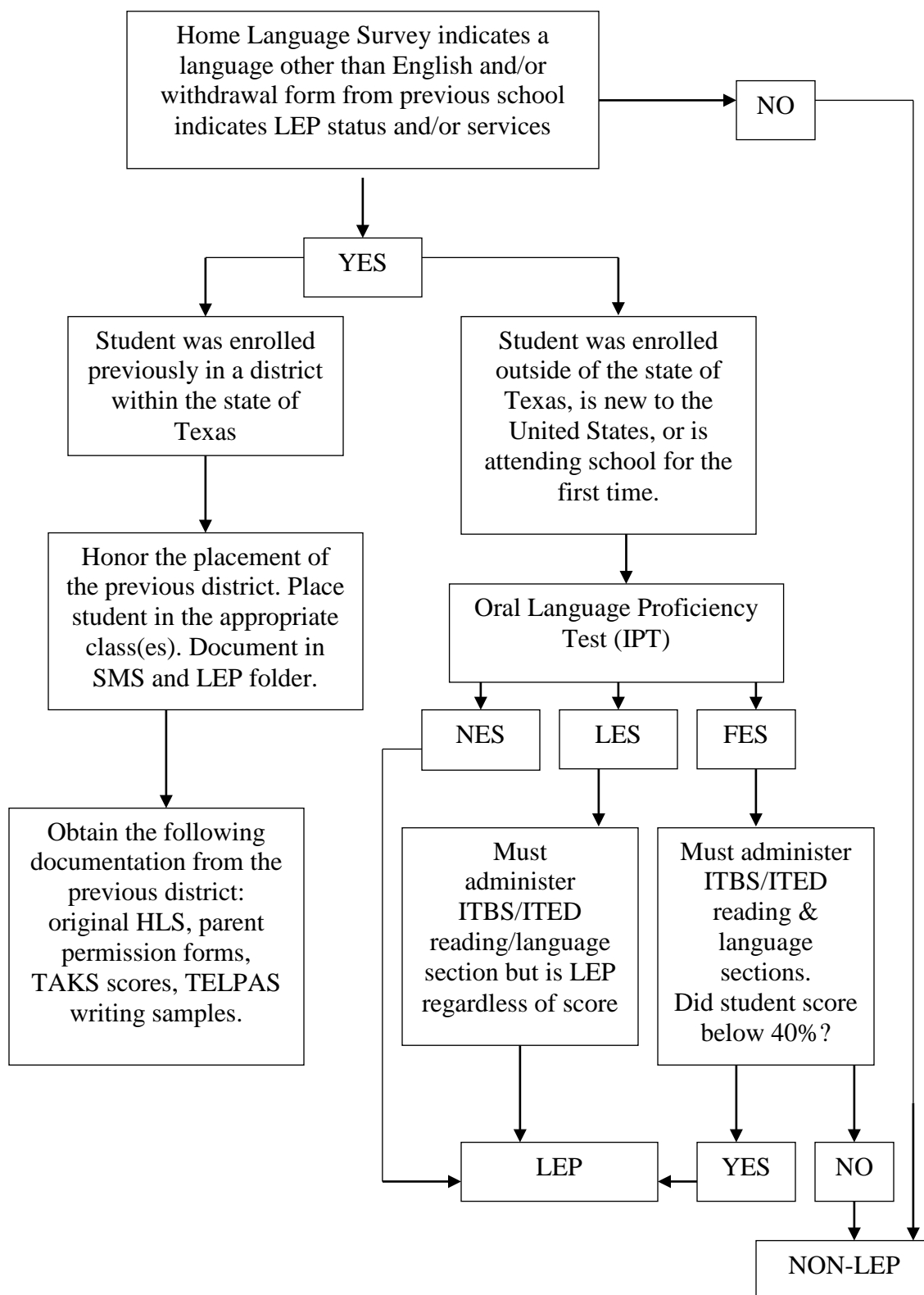
*ELL Identification and Placement Flowchart PK-1<sup>st</sup> Grade*

Figure 2

*ELL Identification and Placement Flowchart 2<sup>nd</sup> -12<sup>th</sup> Grade*

Although the study district's bilingual education program model is technically labeled an early-exit transitional bilingual education program, students are generally able to exit from the program at the end of first grade, which usually occurs after three years of program participation for students who qualified and were placed in the bilingual education program in PK. Students are also able to participate in the program beyond the typical five years. Instruction for some subjects is in the students' native language. A specific amount of time each day, as commensurate with their language proficiency, is spent on developing English skills. Classes are composed of students who share the same native language. The program is modeled after the theory that stipulates that children can most easily acquire fluency in a second language by first acquiring fluency in their native language. The goal of the transitional bilingual education is to help transition a student into an English-only classroom as quickly as possible. A bilingual teacher instructs children in content area subjects (e.g., language arts, math, science, and social studies) in their native language. Students are provided with native-language assignments and instruction that will, in theory, give them a comparable education with their English-speaking peers while also teaching them a second language (Ovando & Collier, 1998). Once the transition is made to an English-only classroom, the student has the knowledge necessary to interact and learn with his peers in all other subject areas.

In order to exit from the bilingual education program, students must meet set standards in the areas of oral language, reading, and writing. For oral language, students enrolled in the exit grade levels targeted in the study are expected to score *fluent English speaker* (FES) on a state-approved test. The study district uses the IPT test developed by Ballard & Tighe to measure this type of fluency. In the area of reading, students in first

and second grade must score at or above the 40<sup>th</sup> percentile in a state approved norm-referenced assessment. The study district uses the Iowa Test of Basic Skills (ITBS). Starting with third grade, students must meet the set passing standard on the English state assessment. The results analyzed in this study originated from the TAKS administered in the spring of 2010. To demonstrate proficiency in writing, students in first grade must score at an *early writer* level on a state approved test. The study district chose to use the IPT Writing Assessment Instrument developed by Ballard & Tighe. Students in second and third grade must score at an *advanced high* level on an approved assessment. The study district chose the writing portion of the Texas English Language Proficiency Assessment System (TELPAS). Table 4 summarizes the state criteria, and Table 1 specifically addresses the exit standards used by the study district.

### **Instrumentation**

The TAKS test was the instrument used to assess the reading and math academic performance of the fifth and eighth grade students under investigation in this research study. The validity of the TAKS test was established through a content validity procedure. To ensure the highest level of content validity, the process of aligning TAKS to the curriculum was carefully approached and included reviews by numerous committees of Texas educators (TEA, 2005). When TAKS was designed as the standards-referenced assessment for the TEKS, advisory committees consisting of educators from districts across the state were formed for each subject area at each grade level. Teachers, test development specialists, and TEA staff members worked together in these committees to identify important-to-assess TEKS student expectations and to develop test objectives, item development guidelines, and test-item types. In addition,



committees met starting in 2001–2002 to review and edit TAKS items for content and bias and to review data from field testing. Because TAKS assessments provide only estimates of achievement levels, its scores contain a certain amount of error. However, test reliability measurements quantify this error. TAKS reliability data are based on internal consistency measures. Most internal consistency reliabilities are in the high .80s to low .90s range (1.0 being perfectly reliable). Reliabilities for TAKS assessments range from .87 to .90 (TEA, 2005).

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2009-2010 English Proficiency Exit Criteria Chart

\*\* For eligible LEP students receiving special education services

## **Procedure and Time Frame**

This study is a quantitative research design and focused exclusively on archival district 2010 TAKS data. The researcher searched for statistically significant differences among reading and math passing rates and commended performance achievement between the two categories of former bilingual education students. In this correlational study, TAKS reading and math data and year of exit were the two variables that were ultimately analyzed to determine if a relationship existed among them. The data used were the 2010 reading and math TAKS results of enrolled 2009-2010 fifth and eighth students who met exit criteria from the bilingual education program. The TAKS report was compiled and organized by 2009-2010 enrolled grade level and bilingual education program exit date. This archival data were abstracted from SMS, the PEIMS program in the study district. The student local identification number was used to ensure that a student's TAKS data was not used more than once and to verify that each student was a participant in the bilingual education program and met exit criteria in the indicated grade level.

Each individual student data abstracted from SMS includes student identification number; grade; gender; bilingual program exit date; reading scale score; reading met minimum; reading commended performance; math scale score; math met minimum; and math commended performance. The data were analyzed using an Excel spreadsheet, allowing for the application of filters to facilitate the examination of groups of students who exited at different grade levels and their TAKS results in each targeted subject area. This format facilitated the three STATA statistical analyses: two-sample t-tests, linear regression, and logistic regression.

## Data Analysis

The data set was comprised of 720 students who were enrolled as fifth or eighth grade general education students during the 2009-2010 school year. All of the students were former ELLs who met the exit criteria from a bilingual education program either after first, second, third, or fourth grade. Out of the 720 students, three met exit criteria at the end of first grade, 44 met exit criteria at the end of second grade, 192 met exit criteria at the end of third grade, and 481 met exit criteria at the end of fourth grade. Students who met exit criteria after completing first or second grade were grouped in the early-exit category, while students who met exit criteria after completing third or fourth grade were grouped in the late-exit category. The TAKS reading and math passing percentage of students in each category of students was analyzed by the researcher. The same was done with the *Commended Performance* scores. The year of exit from the bilingual education program was the independent variable in this research study. The data were analyzed to determine if there was evidence of a correlation between the year of exit and academic achievement as demonstrated on the reading and math TAKS scores of students who formerly participated in the study district's bilingual education program. Thus, the fifth and eighth grade reading and math TAKS results were the dependent variable. After examining the data described via a regression analysis, it was determined how the two variables related to one another. Specifically, two-sample *t*-tests with equal variances were first performed to probe deeper into the differences between the raw score means. Linear regressions were also conducted for the raw scores adjusted for by gender and time of program exit to determine the long-term impact on academic achievement.

Finally, logistic regression analyses were performed to determine if time of exit was statistically reliable in impacting commended achievement on reading and math TAKS.

### **Scope and Limitations**

This research study was limited to students who met exit criteria from the bilingual education program, not all former ELLs. It did not include students who participated in ESL programs or those ELLs who were labeled as *waiver* or as *identified-not served* before meeting exit criteria. The study also did not include students who may have exited from another language program, such as ESL, after also having participated in the bilingual education program.

Additionally, the study only examined reading and math TAKS passing rates. It did not focus on science, social studies, or writing student TAKS performance. Though student achievement in the areas of reading and math is a valid descriptor of academic success, it is not the only component of overall student attainment. A complete picture of student achievement would feasibly include an analysis of mastery across all content areas. Nevertheless, analysis of academic performance in these two main content areas is beneficial in the exploration of long-term student achievement of former bilingual education students.

The students included in this study were limited to those who were enrolled in the study district at the time of the 2010 TAKS administration and are still enrolled in the district. Though most were served in the district's bilingual education program, there was a possibility that a small number of students may have met exit criteria in other districts before enrolling in the study district. Hence, the academic success demonstrated by students who were included in this study may either be a result of successful

preparation of the district's bilingual education program, followed by a continuation of quality instruction in general education classes, or it could be the successful maintenance of the academic preparation obtained in other school districts. In the case of students who participated in the bilingual education program in the study district, met exit criteria while enrolled in the district, and have been continuously enrolled in the general education program after meeting exit criteria, the academic performance of these students was a result of the district's curriculum and instruction alignment and rigor. The data analysis involving these students included an evaluation of the district's instructional practices. Thus, the results of this research study were exclusive to the study district and may not generalize to the academic performance of former bilingual education students who are enrolled in other public school districts.

## **CHAPTER FOUR**

### **RESULTS**

The purpose of this research study was to examine the long-term academic success of students formerly served in a bilingual education program in the study district to identify achievement patterns and predict future achievement as measured by standardized test scores. Specifically, this study compared the 2010 reading and math TAKS data of former bilingual education students who met program exit criteria at the conclusion of first/second and third/fourth grade. The participants included in this study were students who were classified as an ELL upon school entry, were served in a bilingual education program, met program exit criteria in grades one through four, and enrolled full-time in a general education classroom after program exit. The general academic achievement patterns of this group of students in reading and math in fifth and eighth grade after program exit were analyzed by the researcher. The researcher also examined the grade at which students met exit criteria from the bilingual education program to determine if a correlation existed between time of exit and performance on standardized tests administered after the students no longer carried the ELL label and were served exclusively in a general education setting.

Chapter four provides the analysis of data gathered in this research study. The chapter is divided into four sections: Introduction, Research Question One, Research Question Two, and Data Summary. The 2010 TAKS reading and math results of the participants grouped into exit categories were analyzed to answer both research questions. The two compared categories of students were: 1) students who met early-exit criteria from the bilingual program at the completion of first or second grade and 2)

students who met late-exit criteria from the bilingual program at the completion of third or fourth grade. This research study explored two questions. The first question is whether former ELLs who met exit criteria from the bilingual education program demonstrated sustained academic achievement in reading and math, as measured by standardized test scores. The second research question examined whether grade of exit represented a key predictor of future student academic performance, as measured by standardized test scores, for former ELLs who met exit criteria from the bilingual education program.

### **Introduction**

The introduction of this chapter includes the descriptive data outputs, which allow for a preliminary examination of the data. The data used were the 2010 reading and math TAKS results of enrolled 2009-2010 fifth and eighth grade students who met early-exit criteria from the bilingual education program at the end of first or second grade and late-exit at the end of third or fourth grade. These archival data were abstracted from SMS, the public PEIMS program in place in the study district. The raw data were analyzed using an Excel spreadsheet, which facilitated the examination of student groups who exited in each of the grade categories and their TAKS results in each targeted subject area.

The participants included in the data set were 720 students who were enrolled as fifth or eighth grade general education students during 2009-2010 in the study district and previously met exit criteria from the bilingual education program. Of the 720 students, three met exit criteria at the end of first grade, 44 met exit criteria at the end of second grade, 192 met exit criteria at the end of third grade, and 481 met exit criteria at the end



of fourth grade. Students who met exit criteria after completing first or second grade were grouped in the early-exit category, and students who met exit criteria after completing third or fourth grade were grouped in the late-exit category. Table 5 summarizes the study participants by assessed grade and time of exit. It also identifies the number of participants by gender. Table 6 identifies participant gender data totals.

Table 5

*Descriptive Statistics of Study Participants by Assessment Grade and Time of Exit*

Assessed	Bilingual Education	Females	Males	Total
Grade	Program			
	Exit Grade			
5 <sup>th</sup>	1 <sup>st</sup>	1	0	1
5 <sup>th</sup>	2 <sup>nd</sup>	9	3	12
5 <sup>th</sup>	3 <sup>rd</sup>	64	51	115
5 <sup>th</sup>	4 <sup>th</sup>	179	173	352
8 <sup>th</sup>	1 <sup>st</sup>	2	0	2
8 <sup>th</sup>	2 <sup>nd</sup>	16	16	32
8 <sup>th</sup>	3 <sup>rd</sup>	39	38	77
8 <sup>th</sup>	4 <sup>th</sup>	74	55	129
Total		384	336	720

Table 6

*Frequencies and Percentages of Study Participants by Gender*

Gender	Frequency	Percentage
Female	384	53.33%
Male	336	46.67%
Total	720	100.0%

In Table 7, the total number of participants in both assessed grades is identified by program exit grade. This information allows for a first glimpse into the time frame when students were anticipated to meet exit criteria from the study district's bilingual education program. It is evident that the number of students meeting exit criteria increased with each grade level.

Table 7

*Study Participants Exited by Grade Level*

Assessed Grades	Bilingual Education Program Exit Grade	Females	Males	Total	Percent
5 <sup>th</sup> and 8 <sup>th</sup>	1 <sup>st</sup>	3	0	3	.42%
5 <sup>th</sup> and 8 <sup>th</sup>	2 <sup>nd</sup>	25	19	44	6.11%
5 <sup>th</sup> and 8 <sup>th</sup>	3 <sup>rd</sup>	103	89	192	26.67%
5 <sup>th</sup> and 8 <sup>th</sup>	4 <sup>th</sup>	253	228	481	66.80%
Total		384	336	720	100%

The grouping of the participants in each of the described categories of program exit is depicted in Table 8. Due to the low number of students who met exit criteria at the end of first grade, the grades of exit were grouped into these two categories. Thus, it is likely that the data results for the early-exit category is most likely describing a characteristic of students who met exit criteria at the end of second grade. The total percentages of participants in each of the two categories further illustrate the difference in group size as outlined in Table 9, with 93.47% of the students meeting late-exit criteria at the end of third or fourth grade.

Table 8

*Study Participants by Assessed Grade and Program Exit Categories*

Assessed Grade	Bilingual Education Program Exit Category and Grades	Females	Males	Total	Total Percentage
5 <sup>th</sup>	Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	10	3	13	1.81%
5 <sup>th</sup>	Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	243	224	467	64.86%
8 <sup>th</sup>	Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	18	16	34	4.72%
8 <sup>th</sup>	Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	113	93	206	28.61%
Total		384	336	720	100%

Table 9

*Total Study Participants by Program Exit Categories and Grades*

Bilingual Education Program	Total	Total
Exit Category and Grades	Participants	Percentage
Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	47	6.53%
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	673	93.47%
Total	720	100%

**Research Question One**

The first question that was addressed in this research study was whether former ELLs who met exit criteria from the bilingual education program demonstrated sustained academic achievement in reading and math, as measured by standardized test scores. To answer this question, the 2010 TAKS reading and math passing percentages of students in each category of students were analyzed. The same analysis was performed with the *Commended Performance* data. The exit category from the bilingual education program was the independent variable in this research study. The data were analyzed to determine if there was evidence of a correlation between time of exit and academic achievement, as demonstrated on the reading and math TAKS scores of students who formerly participated in the study district's bilingual education program. Thus, the fifth and eighth grade reading and math TAKS results served as the dependent variable.

The summary of participants meeting minimum passing standards in reading and math is included in Table 10. Even though combined totals of 96.0% reading passing rate and 95.0% math passing rate of all participants were specified, a 100% passing rate was reported only in the early-exit category. These results are aligned with the study district's TEA 2010 Performance-Based Monitoring Analysis System (PBMAS) of Bilingual Education/English as a Second language report which indicates, under the *LEP Year After Exit* indicator, a 95.2% reading passing rate and a 95.6% math passing rate. Though these passing rates encompass both TAKS and TAKS Accommodated assessments and includes all LEP students exited at the end of the previous year, it is a noteworthy comparison.

Table 10

*Summary of Participants Meeting Minimum Passing Standards by Exit Category and TAKS Content Area Assessment*

Assessed Grade	Bilingual Education Program Exit Category and Grades	Number of Participants	Met Min. Passing Standards in Reading	Percent Met Min. Passing Standards in Reading	Met Min. Passing Standards in Math	Percent Met Min. Passing Standards in Math
5 <sup>th</sup>	Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	13	13	100%	13	100%
5 <sup>th</sup>	Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	467	439	94.0%	439	94.0%
8 <sup>th</sup>	Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	34	34	100%	34	100%
8 <sup>th</sup>	Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	206	202	98.0%	197	96.0%
Total		720	688	96.0%	683	95.0%

The *Commended Performance* achievement of the participants was also analyzed to gain a deeper understanding of the effect of time of program exit on complete mastery of content area curriculum. As previously mentioned, *Commended Performance* in reading is defined as “high academic achievement; considerably above state passing standard; a thorough understanding of the TEKS reading curriculum” and in math as “high academic achievement; considerably above state passing standard; thorough understanding of the mathematics TEKS curriculum” (TEA, 2010, p. 3). In order to score at the commended level, students could miss no more than three questions in fifth and eighth grade reading, no more than four questions in fifth grade math, and no more than five questions in eighth grade math. Assessed grades and content areas showed a higher percentage of students who exited the bilingual education program in the early-exit category scoring at this level. A noticeable pattern that emerged from the data was an overall higher performance in math than reading in fifth grade. In eighth grade, the reverse occurred. A higher percentage of students scored at the *Commended Performance* level in reading than math. Table 11 outlines these results.

Table 11

*Summary of Participants Achieving Commended Performance by Exit Category and TAKS Content Area Assessment*

Assessed Grade	Bilingual Education Program Exit Category and Grades	Number of Participants	Commended Performance in Reading	Percent Commended in Reading	Commended Performance in Math	Percent Commended Performance in Math
5 <sup>th</sup>	Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	13	9	69.0%	12	92.0%
5 <sup>th</sup>	Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	467	131	28.0%	230	49.0%
8 <sup>th</sup>	Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	34	24	71.0%	19	56.0%
8 <sup>th</sup>	Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	206	114	55.0%	99	48.0%
Total		720	278	39.0%	638	89.0%



A preliminary analysis of the raw TAKS data supports the finding that former ELLs who exited from the bilingual education program in the study district did demonstrate overwhelmingly sustained academic achievement in reading and math, as measured by standardized test scores. Table 12 summarizes the total number and percentage of study participants who met minimum passing standards in both content areas assessed. Table 13 depicts the total *Commended Performance* data.

Table 12

*Study Participants Meeting Minimum Passing Standards in TAKS Reading and Math*

2010 TAKS	Frequency	Percentage
Reading	720	100%
Failed	32	4.44%
Passed	688	95.56%
Math	719	100%
Failed	36	5.01%
Passed	683	94.99%

Table 13

*Study Participants Achieving Commended Performance in TAKS Reading and Math*

2010 TAKS	Frequency	Percentage
Reading	720	100%
Not Commended	442	61.39%
Commended	278	38.61%
Math	719	100%
Not Commended	359	49.93%
Commended	360	50.07%

The high percentages of students meeting passing standards and scoring at the commended level in both subjects assessed are evidence that supports overwhelmingly the conclusion that former ELLs who exited from the bilingual education program in the study district did demonstrate sustained academic achievement in reading and math, as measured by standardized test scores. The data identified students who met exit criteria at earlier grade levels as those who had higher percentages of meeting passing standards and achieving *Commended Performance* levels in reading and math.

**Research Question Two**

The second research question examined whether grade of exit represented a key predictor of future student academic performance for former ELLs who met exit criteria from the bilingual education program, as measured by standardized test scores. The null hypothesis as it applies to this study is: The time of exit from the bilingual education program is not a key predictor of future student academic performance, as measured by

2010 reading and math TAKS data. The experimental or alternative hypothesis is: The time of exit from the bilingual education program is a key predictor of future student academic performance, as measured by 2010 reading and math TAKS data.

The data was examined using STATA statistical analysis. First, two-sample *t*-tests with equal variances were performed by assessed grade levels for reading and math and by program exit category in order to analyze significant differences between the raw score means. Tables 14-17 summarize these findings for fifth grade reading, eighth grade reading, fifth grade math, and eighth grade math. The groups' mean differences in TAKS raw scores reported are 3.28, 1.17, 4.70, and 1.51 respectively. A comparison of raw score means of both groups demonstrated a positive directional difference. However, the group of students assessed in fifth grade reading and math was the only group with a significant mean difference between standardized test scores in the early-exit and late-exit categories. The probability level of 0.0049 for reading and 0.0020 for math reported for the fifth grade group indicated a more prominent difference between raw score means in fifth grade than in eighth grade. The mean differences were in the same direction but were lower in the eighth grade group. Since the probability of the difference in means in the fifth grade group is significant beyond the .05 level, there was approximately 95% confidence that the observed results reflected something more than mere random variability (Mertler & Vannatta, 2010). The *p*-level reported with the *t*-test performed represents the probability of error involved in accepting the research hypothesis that states the time of exit from the bilingual education program was a key predictor of future student academic performance, as measured by 2010 reading and math TAKS data.

According to the data analyzed, there was a significant difference in academic achievement between the two student categories of program exit.

Table 14

*t-test of Grade 5 Reading Raw Scores by Time of Program Exit*

Bilingual Education Program Exit	Obs.	Mean	Standard Error	Standard Deviation	95% Confidence Interval
Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	13	39.30	.71	2.59	37.73, 40.87
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	467	36.02	.19	4.15	35.40, 36.40
Combined	480	36.11	.18	4.15	35.74, 36.48
Difference		3.28	1.15		1.00, 5.56

*Note:  $t=2.8298$ ;  $p=0.0049$*

Table 15

*t-test of Grade 8 Reading Raw Scores by Time of Program Exit*

Bilingual Education Program Exit	Obs.	Mean	Standard Error	Standard Deviation	95% Confidence Interval
Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	34	45.26	.40	2.36	44.43, 46.08
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	206	44.09	.25	3.67	43.58, 44.59
Combined	240	44.25	.22	3.53	43.80, 44.70
Difference		1.17	.65		-.11, 2.45

*Note: t=1.7991; p=0.0733*

Table 16

*t-test of Grade 5 Math Raw Scores by Time of Program Exit*

Bilingual Education Program Exit	Obs.	Mean	Standard Error	Standard Deviation	95% Confidence Interval
Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	13	42.61	.44	1.60	41.64, 43.58
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	467	37.91	.25	5.44	37.41, 38.40
Combined	480	38.04	.24	5.42	37.55, 38.52
Difference		4.70	1.51		1.72, 7.67

*Note: t=3.1089; p=0.0020*

Table 17

*t-test of Grade 8 Math Raw Scores by Time of Program Exit*

Bilingual Education Program Exit	Obs.	Mean	Standard Error	Standard Deviation	95% Confidence Interval
Early (End of 1 <sup>st</sup> or 2 <sup>nd</sup> Grade)	34	43.82	.84	4.90	42.11, 45.53
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	205	44.09	.45	3.67	41.41, 43.20
Combined	239	42.52	.40	6.32	41.72, 43.33
Difference		1.51	1.16		-.79, 3.81

*Note: t=1.2920; p=0.1976*

Additionally, linear regressions were conducted for the raw scores adjusted for by gender and time of program exit to determine the long-term impact on academic achievement. Again, the time of exit was considered to be the independent variable, and the raw score was considered to be the dependent variable.

A linear regression analysis is explained in Tables 18-21 for fifth grade reading, eighth grade reading, fifth grade math, and eighth grade math. Overall, the coefficients in each of the tests demonstrated that there was some significant negative relationship with the outcome variables. Though exiting from the bilingual education program at higher grades (e.g., third or fourth grade) resulted in lower TAKS raw scores in fifth grade reading (coefficient of -3.21), fifth grade math (coefficient of -4.88), eighth grade reading (coefficient of -1.18), and eighth grade math (coefficient of -1.52), the negative impact of a late program exit on TAKS raw scores was most evident at fifth

grade reading and math which have a probability less than .05%. Hence, there was about 95% confidence that the observed results reflected something more than mere random variability (Mertler & Vannatta, 2010).

Table 18

*Linear Regression of Grade 5 Reading and Time of Program Exit*

TAKS Reading	Coefficient	Standard Error	<i>t</i>	<i>p</i> >  <i>t</i>	95% Confidence Interval
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	-3.21	1.16	-2.76	0.006	-5.50, -.92
Gender	-.26	.37	-0.70	0.482	-1.01, .47
Constant	39.36	1.14	34.30	0.000	37.11, 41.62

Table 19

*Linear Regression of Grade 5 Math and Time of Program Exit*

TAKS Math	Coefficient	Standard Error	<i>t</i>	<i>p</i> >  <i>t</i>	95% Confidence Interval
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	-4.88	1.51	-3.22	0.001	-7.85, -1.90
Gender	.72	.49	1.47	0.141	-.24, 1.69
Constant	42.44	1.49	28.41	0.000	39.51, 45.38

Table 20

*Linear Regression of Grade 8 Reading and Time of Program Exit*

TAKS Reading	Coefficient	Standard Error	<i>t</i>	<i>p</i> >  <i>t</i>	95% Confidence Interval
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	-1.18	.64	-1.83	0.069	-2.46, .09
Gender	-.73	.45	-1.62	0.107	-1.63, .15
Constant	45.61	.63	71.42	0.000	44.35, 46.86

Table 21

*Linear Regression of Grade 8 Math and Time of Program Exit*

TAKS Math	Coefficient	Standard Error	<i>t</i>	<i>p</i> >  <i>t</i>	95% Confidence Interval
Late (End of 3 <sup>rd</sup> or 4 <sup>th</sup> Grade)	-1.52	1.17	-1.30	0.193	-3.83, .77
Gender	-.72	.82	-0.88	0.378	-2.34, .89
Constant	44.16	1.15	38.38	0.000	41.89, 46.43

In order to analyze the impact of time of exit on academic achievement, a logistic regression analysis was conducted by the researcher. A logistic regression is a variation of a multiple regression that is appropriate when the dependent variables are categorical (Mertler & Vannatta, 2010). This type of analysis provides a measure of the association between the variables of interest and the outcome. In the present study, the dependent



variable was academic achievement on reading and math TAKS. Field (2009) asserts that the most crucial element in the interpretation of a logistic regression is the value of the odds ratio. Specifically, the odds ratio is determined by dividing the likelihood of an event occurring by the likelihood that the event will not occur. An odds ratio that is less than 1 signifies that as the predictor increases, the odds of the outcome occurring decreases (Field, 2009). Conversely, an odds ratio greater than 1 signifies that as the predictor variable increases, the odds of the outcome occurring increases.

Logistic regressions were conducted to determine if time of exit was a predictor of TAKS reading and math *Commended Performance* in fifth and eighth grade. The results of analysis for fifth and eighth reading and math are included in Table 22. The time of exit was statistically reliable in impacting *Commended Performance* achievement in reading and math in both grades. For fifth grade TAKS reading, the odds ratio of 0.18 for the association of exiting the bilingual education program and *Commended Performance* achievement indicates that students were 82% less likely to score at the *Commended Performance* level if they met exit criteria from the bilingual education program at higher grades (e.g., third or fourth grade). Similarly, the likelihood of scoring at a commended level in eighth grade and in the area of reading followed the same pattern. The odds ratio of 0.50 for eighth grade TAKS reading commended scores suggests that students were 50% less likely to achieve at a commended level on reading if they met exit criteria in third or fourth grade. For math, the odds ratio of 0.07 reveals that fifth grade students were 93% less likely to score at a commended level if they exited from the bilingual program in third or fourth grade as opposed to first or second grade. Data for eighth grade students also showed a similar directional trend of likelihood in the area of math.

The odds ratio of .73 for *Commended Performance* scores on TAKS math for this grade level indicates that students were 27% less likely to score at a commended level if they exited from the bilingual education program in later grade levels. As reported in all logistic regression tables, gender did not change the direction of the overall effect.

Table 22

*Odds Ratios for the Effect of Time of Program Exit on Gender, TAKS Reading, and TAKS Math Commended Performance Achievement*

TAKS	Odds Ratio	Standard	z	Probability	95% Confidence
Commended		Error			Interval
Performance					
Grade 5 Reading	.18	.11	-2.77	0.01	.05, .60
Gender	.78	.16	-1.21	0.22	.52, 1.16
Grade 8 Reading	.50	.20	-1.69	0.09	.22, 1.11
Gender	.58	.15	-2.04	0.04	.34, .97
Grade 5 Math	.07	.07	-2.46	0.01	.01, .59
Gender	1.26	.23	1.28	0.20	.88, 1.82
Grade 8 Math	.73	.27	-0.83	0.40	.35, 1.52
Gender	.85	.22	-0.62	0.53	.51, 1.41

Since more than 95% of the study participants met 2010 TAKS passing standards overall, the *Commended Performance* examination using logistic regression analysis allowed for a deeper examination of the data to determine a relationship between time of exit from the bilingual education program and sustained academic achievement in reading and

math, as measured by standardized test scores.

### **Data Summary**

The purpose of this research study was to examine the long-term academic success of students formerly served in a bilingual education program in the study district to identify achievement patterns and predict future achievement, as measured by standardized test scores. A summary of the data collected was outlined in the descriptive data tables. The participants included in the data set were 720 students who were enrolled as fifth or eighth grade general education students during 2009-2010 in the study district and previously met exit criteria from the bilingual education program. Students who met exit criteria after completing first or second grade were grouped in the early-exit category while students who met exit criteria after completing third or fourth grade were grouped in the late-exit category. A majority (93.4%) of the 720 students met exit criteria at the end of third and fourth grade. The descriptive data also included participant gender information. The percentage of female students was 53.3%, and the percentage of male students was 46.6%. These results provided the information needed to answer the first question of the research study.

To answer the second question of the research study, it was necessary to conduct more advanced statistical analysis of the data. Thus, two-sample *t*-tests with equal variance, linear regressions, and logistic regressions were conducted by the researcher. The *t*-tests allowed for the comparison of raw score means of both categories of students being studied. The comparison demonstrated a positive directional difference. However, the group of students assessed in fifth grade reading and math was the only group that exhibited a significant mean difference between standardized test scores in both the early-

exit and late-exit categories.

The results of the linear regression analysis were consistent with the study district's data that reports high student achievement during the year after program exit. It further outlined a negative relationship between time of exit and raw reading and math TAKS scores. According to the linear regression data, exiting from the bilingual program at higher grades (i.e., third or fourth grade) resulted in lower TAKS raw scores for the study participants.

Likewise, a probability measure was identified in the logistic regression data and a correlation between date of exit and academic achievement in reading and math, as measured by TAKS, was established. After examining the data, it was determined that the two variables relate to one another. The time of exit was statistically reliable in impacting *Commended Performance* achievement in reading and math in both grades. Students in each of the exit categories assessed in both grade levels were less likely to score at the commended level in reading or math if they met exit criteria from the bilingual education program at higher grades (i.e., third or fourth grade). Possible reasons for these findings are discussed in chapter five.

Data from the *t*-tests and both types of regression analyses conducted indicate that time of exit can be a significant predictor of academic student achievement beyond grade of exit, as measured by assessment data. A more detailed summary of the data, as well as study implications and recommendations, are included in the following chapter.

## **CHAPTER FIVE**

### **DISCUSSION**

The purpose of this research study was to examine the long-term academic success of students formerly served in the study district's bilingual education program in order to identify achievement patterns and predict future achievement, as measured by standardized test scores. The intent was to analyze district data to determine if district program exit practices needed to be revised so that former ELLs who met exit criteria from the bilingual education program were instructed in a manner that was most conducive to their long-term academic success. This chapter presents a concise summary of the data analysis and implications of the findings. Limitations and recommendations pertaining to future research are also outlined in this chapter.

The 2010 TAKS reading and math data of 720 enrolled fifth and eighth grade students in the study district who met exit criteria from the bilingual education program were collected and analyzed. The complete participant data set was abstracted from archived PEIMS files. It included student local identification number, gender, enrolled grade, program exit date, reading raw score, reading met minimum indicator, reading commended performance indicator, math raw score, math met minimum indicator, and math commended performance indicator.

The archival data were compiled and organized by bilingual program exit date. Ultimately, the participants were grouped into two categories according to grade of exit. The data analyses performed categorized students who met exit criteria from the bilingual education program at the end of either first or second grade in the early-exit category while those students who met exit criteria from the bilingual education program at the

end of third or fourth grade were grouped in the late-exit category. These labels of early-exit and late-exit categories, as stipulated in this research study, significantly differ from the meaning attributed to the traditional early and late exit connotation. For lack of a more descriptive term to aid in the conceptualization of the different grades of exit, the early-exit and late-exit labels are unique to the data analyzed and discussed in this research study.

### **Summary of Findings**

Out of the 720 study participants, three met exit criteria at the end of first grade, 44 met exit criteria at the end of second grade, 192 met exit criteria at the end of third grade, and 481 met exit criteria at the end of fourth grade. This accounts for .42% of the participants meeting exit criteria at the end of first grade, 6.11% at the end of second grade, 26.67% at the end of third grade, and 66.80% at the end of fourth grade. The low number of participants who met exit criteria at the end of first grade is the main reason for the formation of the two exit categories. After the combination of grades of exit into the two categories analyzed throughout the research study, the percentage of participants in each category rose slightly to 6.53% meeting early-exit criteria and 93.47% meeting late-exit criteria. The variable of gender was also calculated and included in order to determine if it was a variable with significant impact. The percentages of female and male participants were more equally distributed; there were 53.3% female participants and 46.67% male participants.

The 2010 TAKS reading and math results of the participants grouped into exit categories were analyzed to answer both research questions. The two categories of students that were compared are: 1) students who met early-exit criteria from the

bilingual program at the completion of first or second grade and 2) students who met late-exit criteria from the bilingual program at the completion of third or fourth grade. This research study explored two questions. The first question is whether former ELLs who met exit criteria from the bilingual education program demonstrated sustained academic achievement in reading and math, as measured by standardized test scores. The second research question examined whether grade of exit represented a key predictor of future student academic performance, as measured by standardized test scores, for former ELLs who met exit criteria from the bilingual education program.

To answer the first question, the 2010 TAKS reading and math passing percentages of students in each category of students were analyzed. The same was done with the *Commended Performance* data. The category of exit from the bilingual education program was the independent variable in this research study. The data were analyzed to determine if there was evidence of a correlation between time of exit and academic achievement, as demonstrated on the reading and math TAKS scores of students who formerly participated in the bilingual education program in the study district. Thus, the fifth and eighth grade reading and math TAKS results served as the dependent variable.

The first piece of data that was prominent was the overall passing percentages in each of the exit categories and assessed grades. The lowest reported percentage meeting minimum passing standards in both grades assessed and exit categories was 94%. If the same standard used in the state accountability system was applied, this passing rate would be at an *Exemplary* level. These results are aligned with the state 2010 PBMAS report which indicates, under the *LEP Year After Exit* indicator, a 95.2% reading passing rate

and a 95.6% math passing rate for the study district. The passing rate of students grouped in the early-exit category merit special mention. Even though combined totals of a 96% reading passing rate and a 95% math passing rate of all participants were specified, a 100% passing rate was reported only in the early-exit category.

The *Commended Performance* achievement of the study participants was also analyzed to gain a deeper understanding of the effect of time of exit on full mastery of reading and math curriculum. The state standards have specified a gradual increase in the expectations of achievement at the commended level by all sub-groups of students in recent years. The study district's goal, as listed in the district improvement plan, was to have at least 50% of the students in all sub-groups achieving at the commended level. A close analysis of the study data led to the conclusion that the only group of students who were far below that expectation was the fifth grade reading group under the late-exit category. With only 28% at the commended level, this group fared behind the others who either exceeded the 50% commended standard or was one or two percentage points from attaining it. One must bring attention to the fact that all students who met early-exit criteria exceeded the 50% commended achievement expectation.

It can clearly be concluded that there is evidence of a correlation between time of exit and academic achievement, as demonstrated on the reading and math TAKS scores of students who formerly participated in the bilingual education program in the study district. All of the students included in the early-exit study data met reading and math passing standards. The early-exit group was also the one that demonstrated higher commended rates. Nevertheless, at least 95% of all participants were successful in meeting passing standards in both reading and math TAKS in 2010.



The second research question examined whether grade of exit represented a key predictor of future student academic performance, as measured by standardized test scores, for former ELLs who met exit criteria from the bilingual education program. The null hypothesis as it applies to this study is: The time of exit from the bilingual education program is not a key predictor of future student academic performance, as measured by 2010 reading and math TAKS data. The experimental or alternative hypothesis is: The time of exit from the bilingual education program is a key predictor of future student academic performance, as measured by 2010 reading and math TAKS data. The study data supported the rejection of the null hypotheses in favor of accepting the experimental hypothesis.

Two-sample *t*-tests, linear regression, and logistic regression were performed using STATA statistical analysis. Comparisons of raw score means carried out through the *t*-tests demonstrated a positive directional difference between groups. The *t*-tests calculated the means of the reading and math raw scores of students in the early-exit and late-exit categories to determine if there was a significant difference between the means of both exit categories in both assessed grades,

The group of students assessed in fifth grade in reading and math was the only group of students with significant differences in means between the early-exit and late-exit categories. The probability level of 0.0049 for reading and 0.0020 for math for this group of students demonstrated a significant difference between the raw score means of the exit categories. The data indicated that fifth grade students who met late-exit criteria had an average raw score significantly higher than students in the same assessed grade who met early-exit criteria. The mean differences in the eighth grade group also showed

a positive directional difference. However, they are lower and do not demonstrate the same level of significance with probabilities of 0.0733 and 0.1976 in reading and math respectively.

The linear regressions were executed to determine the long-term impact of time of exit on academic achievement. Generally, the coefficient in each linear regression shows that there was some significant negative relationship with the outcome variable. In other words, there was an overall negative impact of a later program exit on TAKS raw scores. This was more evident in the fifth grade group of students. With a reading coefficient of (-3.21) and a math coefficient of (-4.88) and probability levels of 0.006 and 0.001 respectively, the TAKS raw scores of this participant group significantly decreased if exited at later grade levels (i.e., third or fourth grade). Though the reading and math TAKS raw scores of the participants included in the eighth grade group also showed a negative relationship with time of exit, the coefficients obtained were not significant enough to establish that the later exit caused lower raw scores.

Due to the fact that more than 95% of the participants met minimum passing standards on the 2010 reading and math TAKS assessments, a logistic regression analysis was performed to analyze a deeper impact: *Commended Performance* achievement. This was an appropriate analysis to conduct because the dependent variable was categorical (i.e., students either achieved a commended level or they did not). Since the most crucial element in the interpretation of a logistic regression is the value of the odds ratio, it was the focus of this analysis. According to the value of the odds ratios reported for both assessed grades, the time of exit was statistically reliable in impacting *Commended Performance* achievement in reading and math.

For fifth grade reading, the odds ratio of 0.18 for the association of exiting the bilingual education program and *Commended Performance* achievement indicated that students were 82% (1-.18) less likely to score at the *Commended Performance* level if they met exit criteria from the bilingual education program at third or fourth grade. The likelihood of scoring at a commended level in eighth grade reading followed the same pattern. An odds ratio of 0.50 for eighth grade TAKS reading commended scores suggested that students were 50% (1-.50) less likely to achieve at a commended level on TAKS reading if they met exit criteria in third or fourth grade. For math, the odds ratio of 0.07 revealed that fifth grade students were 93% (1-.07) less likely to score at a commended level if they exited from the bilingual education program in third or fourth grade as opposed to first and second grade. Data for eighth grade students also showed a similar likelihood in the area of math. The odds ratio of .73 for *Commended Performance* scores on TAKS math for this grade level indicated that students were 27% (1-.73) less likely to score at a commended level if they exited from the bilingual education program in later grade levels. As reported earlier in the logistic regression tables, gender did not change the direction of the overall effect.

### **Implications**

The Hispanic population increase of 41.8% over the last decade has resulted in a total of 37.6% Hispanics residing in the state of Texas (U.S. Census, 2010). Similarly, the number of students from non-English speaking backgrounds enrolled in our public schools continues to rise. They represent the fastest growing segment of the student population by a wide margin, with an increase of 51% since 1997 (National Clearinghouse for English Language Acquisition and Language Instruction Educational

Programs, 2011). The growth in the number of ELLs expands the need for educators to research and provide quality special language instruction to ensure that these students have access to the core curriculum and acquire academic knowledge as well as English language skills. Nearly every district faces the challenge of helping this growing segment of students become proficient in the English language while also providing them with a high-quality and rigorous education. Due to the different levels of English proficiency demonstrated by these students and the wide range of academic skills, the “balanced” education of ELLs is a daunting responsibility. This duty is non-negotiable, especially in the midst of federal and state accountability mandates.

Due to mandates of the NCLB Act of 2001 (U.S. Department of Education, 2002), local school districts are held accountable to develop standards and put systems in place so that all enrolled students are able to meet or exceed educational standards. English language learners are also included in this accountability, and they must also demonstrate academic and linguistic growth on an annual basis. However, while providing pertinent information about the performance and academic growth of limited English proficient students, the current accountability system does not describe what happens to ELLs once they have been placed in a mainstream classroom on a full-time basis after having met the specified exit criteria (de Jong, 2004). This research study focused on the academic achievement of former ELLs, particularly those who were served through a bilingual education program.

Through an analysis of the 2010 fifth and eighth grade math and reading TAKS results of former ELLs who met exit criteria from the bilingual education program, it was determined that an overwhelming 94%-100% of the students in question did continue to

succeed academically, as measured by standardized test scores, in the general education setting. In addition, the high percentage of students achieving a level of commended performance corroborates available state data reporting that more than 90% of the district's former ELLs consistently meet at least the minimum passing standards on the TAKS.

Former ELLs did demonstrate patterns of high academic achievement after meeting exit criteria from the bilingual education program. The underlying issue lies in the role of time of exit. This was the focus of this research study and continues to be a topic of discussion in different arenas. The intent of this study was to establish a grade of exit that would be most conducive to high academic achievement of former ELLs in the general education setting. If one only focused on the extremely high level of achievement demonstrated by those students who met early-exit criteria, emphasis would be placed on exiting from the bilingual education program after first or second grade. However, the actual numbers of students who met early-exit criteria were also a critical factor in this research study. There were only a total of 47 such students, and they accounted for 6.53% of the study participants. The explanation for the high achievement of these students could be a result of a high level of intellect, resulting in rapid acquisition of a second language while learning content area concepts. The reported results of the early-exit participant group were not aligned with most research on bilingual education.

Reviewing the educational research on bilingual education and second language acquisition suggests that English language proficiency can take as long as seven years to achieve, depending on whether oral proficiency or academic language proficiency and

achievement are being considered (Hakuta, Butler, & Witt, 2000). The students in the late-exit category would more likely adhere to this research, especially if they were enrolled in the bilingual program since pre-kindergarten or kindergarten. Their academic success on reading and math TAKS mastery, as supported by the study data, did adhere to this time frame. It makes sense that, as they learned English, they continued to excel academically in content areas taught in their native language. This does not, on the other hand, explain the high academic success experienced by the early-exit group in this study.

Other research implies that the more quickly students exit the program, the better the program (Gandara & Merino, 1993; Linquanti, 2001). Following this rationale, the bilingual education program in the study district would be considered a strong program. Nevertheless, the assumption that a direct relationship exists between exit rates and program success ignores research on the influence of individual student variables, program quality, and school variables on the rate of student progress through a bilingual program (Gandara & Merino, 1993; Thomas & Collier, 2002). If exit rates are used as the measure of effectiveness, specific contextual variables need to be included. This is precisely where the explanation of the high reading and math TAKS of the early-exit group may lie. There may be other factors contributing to their success that were not included in this study. They are referenced in the limitations outlined later in this chapter.

In its massive 2006 research review, the National Literacy Panel on Language Minority Children and Youth concluded that oral proficiency and literacy in a student's native language can facilitate literacy development in English, and inclusion of first-

language instruction in ELL programs can have long-term benefits (August & Shanahan, 2006). The native language instruction that students who met exit criteria from the bilingual education program received early in their student career, anywhere from two to six academic years, may be the factor that contributed to the overall academic achievement as demonstrated by high percentage of students who met reading and math passing standards. This is a valid conclusion supported by five recent meta-analyses that compared bilingual and English-only programs (Genesee, Lindholm-Leary, Saunders, & Christian, 2006; Krashen & McField, 2005; Rolstad, Mahoney, & Glass, 2005; Slavin & Cheung, 2003; Thomas & Collier, 2002). Yet, one cannot dismiss the high overall achievement demonstrated by the early-exit group as an outlier.

The implication for the study school district that may be generalized to similar districts is that students who are able to meet the set bilingual education program exit criteria are not only able to pass standardized tests in a general education setting, but at least a fourth of them will score at the commended level. Furthermore, the earlier students are able to meet the set criteria, the higher chance they have of attaining a high level of mastery of on-grade level curriculum as demonstrated by the likelihood of them achieving a commended level on reading and math TAKS. This finding supports the conclusion reached by Scott Allen Bounds in his 2003 research study that focused on students who met exit criteria from bilingual education (Bounds, 2004). He reported that the participants in his study performed well academically during their first and second year after exiting the bilingual education program.

Thus, the practice that is recommended for school districts with similar demographics and needs as the study district is to balance instruction so that ELLs

participating in a bilingual education program benefit from content taught in their native language. At the same time, they will also develop their English proficiency so that they are able to succeed in the general education setting. Problems may arise when students are not successful in meeting the rigorous exit criteria, and they continue being classified as ELLs past the point when bilingual education is no longer an option for them. A specific problem that the entire state of Texas is currently facing is the high percentage of ELL high school drop outs and low ELL graduation rate. According to the 2011 PBMAS state report, 4.7% bilingual and ESL students dropped out of high school in grades 9-12. The same document reports that only 54.8% of bilingual and ESL students graduated from high school (TEA, 2010). For the study school district, the dropout rate reported in the 2010 PBMAS document is 9.2% while the graduation rate is a dismal 39%. In order for school districts to claim equal provision of educational opportunities for this group of students, educators must plan for and apply the needed instructional balance.

Regardless of the total number enrolled in a district, specific personnel must be held accountable for monitoring the academic and linguistic progress of ELLs. In most school districts and campuses, the LPAC is responsible for appropriate placement, instructional services, assessment, and progress monitoring of ELLs. However, this responsibility is too massive and important to be left to a few individuals. Administrative and district support are needed so that the provision of required services and best instructional practices positively impact this student population.

NCLB has already identified these students as a significant population of students that must show growth each year. Individual campuses and districts must respond by ensuring that each member of this subgroup meets the expected standards each year.



This research study has concluded that students who meet exit criteria demonstrate sustained academic achievement. Hence, it is vital that each student is given the opportunity to meet this standard through quality content area and language instruction.

### **Limitations**

This research study only targeted former ELLs who had met exit criteria from the bilingual education program at the end of first, second, third, or fourth grade and were assessed in the areas of reading and math in fifth and eighth grade. The requirements for study participation greatly narrowed the number of students who met the data criteria and resulted in a small early-exit category group. The results of other former ELLs are also not included in the data set. Those students who met exit criteria from an ESL program, former ELLs whose parents may have refused services, and former ELLs who may have met specialized exit criteria due to an identified disability were excluded from the research study data set.

The study examined only reading and math TAKS passing rates. It did not focus on science, social studies, or writing student TAKS performance. Though student achievement in the areas of reading and math is a valid descriptor of academic success, it is not the only component of overall student attainment. A complete picture of student achievement would include an analysis of mastery across all content areas. Although it can be argued that an analysis of academic performance in these two main content areas is beneficial to the exploration of long-term student achievement of former bilingual education students.

The assessed grades included in the data set also placed a limitation on the research study. It is important to note that former bilingual students assessed in other

grade levels may be either more or less successful academically than the students whose data was studied. Though the passing rates and commended levels of the participants included in the study were quite solid, academic success in other assessed grades may prove to be more indicative of long-term achievement.

Additionally, the students included in this study were limited to those who were enrolled in the study district at the time of the 2010 TAKS administration and are still enrolled in the district. Though most were served in the bilingual education program in the study district, there was a possibility that a small number of students may have met exit criteria in other districts before enrolling in the study district. Hence, the academic success demonstrated by students who were included in this study may either be a result of successful preparation of the district's bilingual education program, followed by a continuation of quality instruction in general education classes, or it could possibly be the successful maintenance of the academic preparation obtained in other school districts. In the case of students who participated in the bilingual education program in the study district, met exit criteria while enrolled in the district, and have been continuously enrolled in the general education program after meeting exit criteria, the academic performance of these students was a result of the district's curriculum and instruction alignment and rigor. To ascertain what percentage of the study participants fall into this category, it is necessary to include district enrollment history as a data filter so that students who have been exclusively served in the district's bilingual education program are identified and their data is analyzed.

Perhaps the most significant limitation of this research study is the lack of comparison to students assessed in the same grades and in the same content areas who

receive instruction in the general education setting but have never been labeled as an ELL. This would be the ultimate data comparison that would be decisive in isolating bilingual education program services as the main variance between the groups. Though comparison to the *All Student* category of the study district 2010 TAKS reports was originally part of this study, it would have provided little information since the students who were included in the study data would also have been included in the *All Student* category. The only way to have excluded them from the *All Student* category would have been to manually extract their data from the *All Student* data set.

Finally, since the research exclusively focused on data obtained from the study district, the results of this research study were exclusive to the study district and may or may not fully generalize to the academic performance of former bilingual education students who are enrolled in other public school districts. This limitation justifies further studies on a broader scope.

### **Recommendations**

The purpose of this research study was to examine the long-term academic success of students formerly served in a bilingual education program in the study district in order to identify achievement patterns and predict future achievement, as measured by standardized test scores. The data obtained and analyzed accomplished this intent. However, as pointed out in the limitations of the study, additional studies on the same topic that incorporates more variables would be able to shed light on some of the posed issues. The following are specific recommendations for further research:

1. Longitudinal research study of former bilingual education students for at least three years after program exit, documenting standardized assessment data, report card grades, and parent, teacher, and student surveys.
2. Academic achievement comparison of former ELLs with students who have never qualified for or received special language services. Separate studies can include a) exited bilingual students and never before served non-ELLs and b) exited ESL students and never before served non-ELLs.
3. Exited bilingual student academic performance in all content areas three years after meeting program exit criteria.
4. Academic achievement comparison of former ELLs who have exited from the bilingual education program and former ELLs who have exited from the ESL program.
5. Two year data analysis of academic achievement after exit grade of former bilingual students who met exit criteria at the end of first, second, third, fourth, and fifth grade.

Although this research study had numerous limitations, it did provide useful information to consider as bilingual education programs are initialized or restructured. The key point is that the analysis of this type of data is the first step to ensure that all ELLs and those who have met exit criteria from bilingual and ESL programs receive an equitable education, regardless of language program status.

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APPENDIX A  
UNIVERSITY OF HOUSTON  
CONSENT TO PARTICIPATE IN RESEARCH

## Appendix A

## University of Houston Consent to Participate in Research

**UNIVERSITY of HOUSTON**  
DIVISION OF RESEARCH

January 27, 2012

Attagracia Guerrero  
c/o Dr. Steven Busch  
Curriculum and Instruction

Dear Attagracia Guerrero,


Based upon your request for exempt status, an administrative review of your research proposal entitled, "ACADEMIC ACHIEVEMENT PATTERNS OF FORMER ENGLISH LANGUAGE LEARNERS SERVED IN A BILINGUAL EDUCATION PROGRAM" was conducted on January 26, 2012.

In accordance with institutional guidelines, your project is exempt under **Category 4**.

As long as you continue using procedures described in this project, you do not have to reapply for review.\* Any modification of this approved protocol will require review and approval by the Committee.

If you have any questions, please contact Alicia Vargas at (713) 743-9215.

Sincerely yours,



Kirstin M. Rochford, MPH, CIP, CPIA  
Director, Research Compliance

\*Approvals for exempt protocols will be valid for 5 years beyond the approval date. Approval for this project will expire **December 1, 2016**. If the project is completed prior to this date, a final report should be filed to close the protocol. If the project will continue after this date, you will need to reapply for approval if you wish to avoid an interruption of your data collection.

Protocol Number: 12234-EX

316 E. Cullen Building Houston, TX 77204-2015 (713) 743-9204 Fax: (713) 743-9577

COMMITTEES FOR THE PROTECTION OF HUMAN SUBJECTS

APPENDIX B

ALDINE INDEPENDENT SCHOOL DISTRICT

PERMISSION TO APPLY FOR RESEARCH STUDY

## Appendix B

## Aldine Independent School District

## Permission to Apply for Research Study

## Aldine Independent School District

## Permission to Apply for Research Study

You must first obtain the approval of the appropriate district level administrator prior to beginning a master or doctoral research project. Complete this form, attach all RESEARCH STUDY REQUIREMENTS, and submit it to the Assistant Superintendent of Curriculum and Instruction.

## 1. Applicant/s

a. Name/s & Title/s Gracie Guerrero, Director of Multilingual Services Date 2/22/2011

b. School/Building (if employee) Resource Center

c. Telephone number (281) 985-7370

## 2. Description of proposed research

a. Title of project ACADEMIC ACHIEVEMENT PATTERNS OF FORMER ENGLISH LANGUAGE LEARNERS SERVED IN A BILINGUAL EDUCATION PROGRAM

b. Duration of project (e.g., 6 months, 3 years) 1 1/2 years From: 1/2011 To: 5/2012

c. Description of people participating in the project: Archived TAKS Data

(1) Number \_\_\_\_\_ (2) Age(s) \_\_\_\_\_ (3) Grade Level(s) 5<sup>th</sup> & 8<sup>th</sup> Grade

d. Name/s of school/s \_\_\_\_\_

e. Does this research require hiring additional employees? Yes ☐ No ☒

How many? \_\_\_\_\_ Position/s and Number \_\_\_\_\_

3. Who is your subject area program director if you are an Aldine employee? Multilingual Services Department

Have you discussed this project with him/her? Yes ☒ No ☐

4. How will the proposed research benefit Aldine students? The findings will assist the district in the implementation of Bilingual program existing practices that are conducive to higher sustained academic achievement.

5. Attach Research Study Requirements as stated on the following page.

Approved <input checked="" type="checkbox"/>	Disapproved <input type="checkbox"/>	FOR OFFICIAL USE ONLY
Campus Administrator(s)		Date
Cabinet Level Administrator		Date
<u>Priscilla Redgum</u>		<u>12-15-11</u>
Assistant Superintendent of Curriculum/Instruction		Date



## RESEARCH STUDY REQUIREMENTS

### Aldine Independent School District

1. Participants - specific employee(s) or student(s) that will be involved in the project selection. Please include selection criteria for participants.

2010 archived 5<sup>th</sup> and 8<sup>th</sup> grade TAKS data of former Bilingual students by exit grade.

2. Supervising school and professor.

University of Houston, Dr. Steve Busch

3. Method of obtaining data for study including the eligibility criteria for participants.

SMS reports of 5<sup>th</sup> and 8<sup>th</sup> grade TAKS achievement of students exited from the Bilingual program, analyzed by year of exit.

4. How the researcher will use the data obtained in the study.

The TAKS passing rates of 5<sup>th</sup> and 8<sup>th</sup> grade students will be categorized by year of exit from the Bilingual program and compared to determine what group of students had higher Reading and Math passing rates.

5. Copy of any survey or interview questions and a copy of all pertinent attachments including, but not limited to:

questionnaire instrument None needed

informed consent(s) None needed

letters of approval from cooperating institutions

copy of external support proposal if applicable etc.

6. A brief description of proposed research: include hypotheses and research design.

This research will involve only quantitative data. The TAKS 2010 results of 5<sup>th</sup> and 8<sup>th</sup> former Bilingual students will be analyzed. The different TAKS reports will be compiled and organized by bilingual program exit date. Depending on the actual number of students that is still enrolled in Aldine ISD, the study is targeted to include those students who met exit criteria after 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> grade.

7. A statement that describes the anticipated benefits to subjects, and the importance of the study to Aldine ISD.

One of the underlying goals of education is long-term academic achievement. Since the number of LEP students has gradually increased in Aldine ISD to surpass the 20,000 mark, the Bilingual program plays a major part in students' academic career. By actually analyzing the achievement, as measured by the TAKS test, of students who previously participated in the program, I will be able to support either a continuation of the early exit transitional Bilingual program or the adopting of a late exit Bilingual program. This will allow for more consistency in the application of the program across the district. This consistency has proven to be difficult to establish in Aldine ISD, considering the 31 elementary campuses that are currently in existence.

8. A statement from the university indicating that any human subjects involved in any project in Aldine will not be exposed to any physical, psychological, or social injury. No human subjects are involved

APPENDIX C

TEXAS ASSESSMENT OF KNOWLEDGE AND SKILLS

RAW SCORE CONVERSION TABLES

GRADES 5 AND 8: MATHEMATICS AND READING

## Appendix C

## Texas Assessment of Knowledge and Skills

## Raw Score Conversion Tables

## Grades 5 and 8: Mathematics and Reading

Texas Assessment of Knowledge and Skills Raw Score Conversion Table Mathematics - April 2010 Administration Grade 5		
Raw Score	Scale Score	Quantile Measure
0	E- 222	EM
1	E- 290	60Q
2	E- 339	155Q
3	E- 369	215Q
4	E- 391	255Q
5	E- 409	290Q
6	E- 423	320Q
7	E- 436	345Q
8	E- 448	370Q
9	E- 458	390Q
10	E- 468	410Q
11	E- 477	425Q
12	E- 486	445Q
13	E- 494	460Q
14	E- 502	475Q
15	E- 509	490Q
16	E- 516	500Q
17	E- 524	515Q
18	E- 531	530Q
19	E- 537	545Q
20	E- 544	555Q
21	E- 551	570Q
22	E- 558	585Q
23	E- 564	595Q
24	E- 571	610Q
25	E- 578	625Q
26	E- 585	635Q
27	E- 592	650Q
28	E- 603 *	670Q
29	E- 606	680Q
30	E- 613	690Q
31	E- 621	705Q
32	E- 629	725Q
33	E- 638	740Q
34	E- 647	760Q
35	E- 657	775Q
36	E- 667	795Q
37	E- 678	820Q
38	E- 691	845Q
39	E- 706	875Q
40	E- 738 **	935Q
41	E- 745	950Q
42	E- 775	980Q
43	E- 825	980Q
44	E- 893	980Q

\* Met Standard level

\*\* Commended Performance level

EM = Emerging Mathematician

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Texas Assessment of Knowledge and Skills  
Raw Score Conversion Table  
Reading - April 2010 Administration  
Grade 5

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<u>Raw Score</u>	<u>Scale Score</u>	<u>Lexile Measure</u>
0	E- 175	320L
1	E- 250	320L
2	E- 304	320L
3	E- 337	320L
4	E- 361	320L
5	E- 381	320L
6	E- 398	320L
7	E- 412	325L
8	E- 425	355L
9	E- 437	380L
10	E- 448	405L
11	E- 459	430L
12	E- 469	455L
13	E- 478	475L
14	E- 487	495L
15	E- 496	515L
16	E- 504	535L
17	E- 513	555L
18	E- 521	575L
19	E- 529	590L
20	E- 537	610L
21	E- 545	630L
22	E- 553	645L
23	E- 561	665L
24	E- 569	685L
25	E- 577	700L
26	E- 585	720L
27	E- 593	735L
28	E- 602	760L
29	E- 611	780L
30	E- 620 *	800L
31	E- 630	820L
32	E- 640	845L
33	E- 651	870L
34	E- 662	895L
35	E- 675	925L
36	E- 689	955L
37	E- 706	995L
38	E- 725	1040L
39	E- 763 **	1125L
40	E- 781	1165L
41	E- 835	1285L
42	E- 910	1285L

\* Met Standard level

\*\* Commended Performance level

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Texas Assessment of Knowledge and Skills  
Raw Score Conversion Table  
Mathematics - April 2010 Administration  
Grade 8

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<u>Raw Score</u>	<u>Scale Score</u>	<u>Quantile Measure</u>
0	E- 320	120Q
1	E- 388	250Q
2	E- 438	350Q
3	E- 468	410Q
4	E- 490	450Q
5	E- 507	485Q
6	E- 522	515Q
7	E- 535	540Q
8	E- 547	560Q
9	E- 557	580Q
10	E- 567	600Q
11	E- 576	620Q
12	E- 584	635Q
13	E- 592	650Q
14	E- 600	665Q
15	E- 607	680Q
16	E- 615	695Q
17	E- 622	710Q
18	E- 628	720Q
19	E- 635	735Q
20	E- 641	745Q
21	E- 648	760Q
22	E- 654	770Q
23	E- 660	785Q
24	E- 666	795Q
25	E- 673	810Q
26	E- 679	820Q
27	E- 685	830Q
28	E- 691	845Q
29	E- 700 *	860Q
30	E- 704	870Q
31	E- 710	880Q
32	E- 717	895Q
33	E- 724	910Q
34	E- 730	920Q
35	E- 738	935Q
36	E- 745	950Q
37	E- 753	965Q
38	E- 761	980Q
39	E- 769	995Q
40	E- 778	1015Q
41	E- 788	1035Q
42	E- 798	1055Q
43	E- 810	1075Q
44	E- 822	1100Q
45	E- 850 **	1155Q
46	E- 855	1165Q
47	E- 877	1205Q
48	E- 907	1215Q
49	E- 956	1215Q
50	E-1025	1215Q

\* Met Standard level

\*\* Commended Performance level

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Texas Assessment of Knowledge and Skills  
Raw Score Conversion Table  
Reading - April 2010 Administration  
Grade 8

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<u>Raw Score</u>	<u>Scale Score</u>	<u>Lexile Measure</u>
0	E- 237	460L
1	E- 311	460L
2	E- 365	460L
3	E- 398	460L
4	E- 422	460L
5	E- 442	460L
6	E- 458	460L
7	E- 472	460L
8	E- 485	490L
9	E- 496	515L
10	E- 507	540L
11	E- 517	565L
12	E- 527	585L
13	E- 536	605L
14	E- 544	625L
15	E- 552	645L
16	E- 560	660L
17	E- 568	680L
18	E- 575	695L
19	E- 583	715L
20	E- 590	730L
21	E- 597	745L
22	E- 604	760L
23	E- 611	780L
24	E- 618	795L
25	E- 625	810L
26	E- 632	825L
27	E- 639	840L
28	E- 646	860L
29	E- 654	875L
30	E- 661	890L
31	E- 668	910L
32	E- 676	925L
33	E- 684	945L
34	E- 692	965L
35	E- 700 *	980L
36	E- 709	1000L
37	E- 718	1020L
38	E- 728	1045L
39	E- 739	1070L
40	E- 750	1095L
41	E- 763	1125L
42	E- 776	1155L
43	E- 793	1195L
44	E- 812	1235L
45	E- 850 **	1325L
46	E- 868	1365L
47	E- 921	1465L
48	E- 996	1465L

\* Met Standard level

\*\* Commended Performance level

## **VITA**

### **ALTAGRACIA GUERRERO**

16515 Nightingale Falls, Cypress, Texas 77429 | 281-382-4536 |  
aguerrero@aldine.k12.tx.us

### **EDUCATION**

University of Houston	Houston, TX
Doctor of Education in Educational Leadership	2012
Thesis: Academic Achievement Patterns of Former English Language Learners Served in a Bilingual Education Program	
Superintendent Certification	

Sam Houston State University	Huntsville, TX
Master of Education in Administration	1999
Principal Certification	

University of Houston	Houston, TX
Bachelor of Science	1994
Area of Concentration: Political science	
Minor: Psychology	

### **PROFESSIONAL EXPERIENCE**

Aldine Independent School District	Houston, TX
Director of Multilingual Services	Present
Principal, Carmichael Elementary	2004-2008
Assistant Principal, Ermel Elementary	1999-2004
Bilingual Teacher, Sammons Elementary	1998-1999
Bilingual Teacher, Oleson Elementary	1994-1998

### **LANGUAGES**

English-Second Language  
Spanish-Native Language

### **PROFESSIONAL AFFILIATIONS**

ALAS-Association of Latino Administrators and Superintendents  
AMME-Alliance for Multilingual and Multicultural Education  
NABE-National Association for Bilingual Education  
TABE-Texas Association for Bilingual Education  
SHABE-Suburban Houston Area Association for Bilingual Education

