



Bilingual Education in Texas: Exploring Best Practices

Final Report

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Executive Summary

In the state of Texas, the number of Limited English Proficient (LEP) students is increasing rapidly, as is the number of bilingual students. Over the past ten years, the LEP population has consistently outgrown the total population in Texas schools. If demographic trends continue, this population will be the majority of students in three decades. Given that Texas provides additional monetary support for each student in bilingual or English as a Second Language (ESL) programs, the total cost of education is expected to rise dramatically as the LEP population increases.

Most of the LEP students in Texas are enrolled in elementary grades. However, all schools are required to provide services if the campus has at least one LEP student enrolled, regardless of the language or age of the student.

Demographic trends over the last decade have shown that there has been a significant growth in the LEP student population in non-border school districts and the concern regarding bilingual education is now largely considered a statewide issue. The number of counties with at least 5 percent LEP students increased from 117 counties in 1996-97 to 160 counties in 2006-07.

The Texas Legislature recently instructed the Texas Education Agency to collect and report information on the specific instructional methods used in bilingual and ESL programs. Existing literature suggests some instructional methods are more effective than others. Some particularly effective strategies, according to the literature, include:

- Use of native language
- A cooperative learning model
- Culturally responsive instruction
- Extensive oral interaction

We used a confidential survey to identify school and program characteristics that contribute to school success. The survey was distributed to principals who forwarded it to teachers with LEP students. The survey was sent to all elementary and middle school campuses with at least 30 LEP students. We received 624 responses from teachers representing 266 campuses and 140 school districts.

Our study linked the survey responses to AEIS data on school performance. Specifically we used the following four indicators to evaluate educational practices:

- Texas Assessment of Knowledge and Skills (TAKS) –Passing Rates
- Texas Assessment of Knowledge and Skills (TAKS) –Average Scores

- Value-Added
- English Language Learners Progress Measure

We interpret the first three indicators as measures of content learning. The last indicator is a measure of English language acquisition.

Based on our research a few clear conclusions can be made regarding current teaching strategies and program application with regards to bilingual/ESL education in the state of Texas:

- Our analysis did not identify any school-level difference in student performance between bilingual and ESL teachers.
- We found no systematic relationship between bilingual/ESL funding per pupil and student performance at the school level.
- Consistent instruction in one language appears most effective for content learning. Instructional levels that are greater than 90 percent English or greater than 90 percent in the students' native language are equally effective for all three content learning indicators. Mixed instructional time is systematically less effective than exclusive instructional time in a single language for the TAKS passing, TAKS scores, and value added analyses.
- While teachers indicated their use of common instructional strategies, most of these strategies did not have a significant influence on student performance at the school level. This may reflect the pervasive nature of these strategies rather than their impact on students.
- Instructional methods identified as particularly effective by the existing bilingual education literature are nearly as common in low performing schools as they are in high performing schools in Texas.
- While our survey used the state's definition for these programs, some teachers appeared to be confused about how their programs matched the state's definitions. Given that new legislation will require school districts to report how many students are enrolled in specific bilingual and ESL programs, the state will probably also encounter this confusion. Data collected during the first year of this mandate should be closely reviewed given that teachers and school districts might have trouble categorizing how many of their LEP students are served through the different programs.

Given the limited timeframe of our analysis and the complexity of bilingual education in a state the size of Texas, this study highlights only a few of the many areas of future research that would enhance the overall knowledge of effective bilingual programs.

Introduction

As the population of Texas has grown, so has the number of Limited English Proficiency (LEP) students across the state. The number of LEP students increased more than twice as fast as the total student population between the 1996-97 and the 2006-07 school years. As more LEP students enroll in bilingual and English as a second language (ESL) programs, the cost of such programs will consume an increasing share of Texas' education budget. Moreover, there is a troubling achievement gap between LEP students and non-LEP students.

One of the challenges facing decision makers in Texas is how to implement effective bilingual education programs. To assist policy-makers in addressing this question, this study focuses on identifying successful schools and best practices in bilingual/ESL programs across the state. Successful schools will be identified based on multiple measures of student achievement including the English Language Learners Progress measure, Texas Assessment of Knowledge and Skills (TAKS), and value added test scores.

To understand school and program characteristics that contribute to the success of these schools, we surveyed 624 teachers who have LEP students in their classroom. Data collected from this teacher survey were used to conduct our analysis of bilingual programs across the state of Texas. Teachers responded from 266 campuses in 140 different districts¹.

¹ It is important to note, however, that some large school districts in our sample had research protocols in place that affected their ability to participate in our study.

Bilingual Education through a Texas Perspective

With the large increase in the number of LEP students, Texas is spending a greater amount of general funds towards the bilingual and ESL services. The following section will provide enrollment, geographic distribution, and the academic context for Texas Bilingual and ESL programs.

Limited Education Proficiency Student Demographics

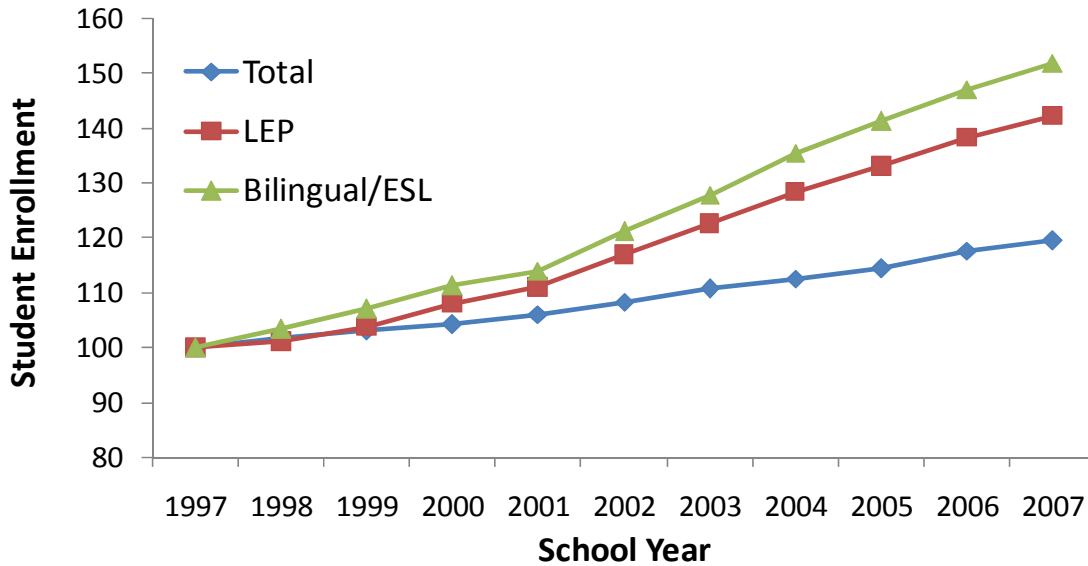
According to the Texas Education Agency (TEA), the number of LEP students increased by 42.2 percent between the 1996-97 and the 2006- 07 academic school years, while the number of students in Bilingual or ESL programs grew by 51.9 percent. These growth rates are more than double that of the total student population, which only grew by 19.5 percent during the same time period (TEA, Academic Excellence Indicator System: 1995-2007). Figure 1 displays the cumulative enrollment growth for Total, LEP and bilingual/ESL populations since the 1996-1997 school year. As the figure illustrates, the LEP and bilingual/ESL populations had similar growth patterns until 2002, when the bilingual/ESL population began growing at a more rapid rate than the LEP population.

One possible explanation in the acceleration in LEP services was the authorization of the *No Child Left Behind Act of 2001 (NCLB)*.² Among other things, NCLB mandated that school and district test scores be reported out by a subgroup if the subgroup population meets minimum enrollment requirements, and unlike previous state law, included LEP students as one of the subgroups. The NCLB mandate may have motivated schools to be more aggressive in providing services to LEP students.

² For further explanation of *No Child Left Behind* and the legislative and judicial impacts on Texas LEP education please see Appendix A.

Figure 1 -Texas Student Enrollment from FY 1997 through FY 2007

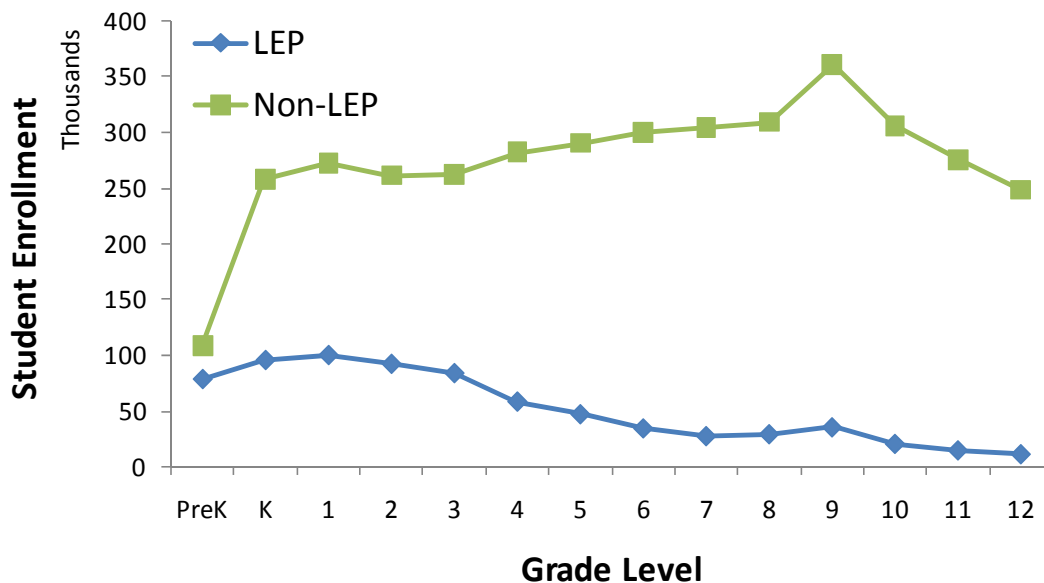
Index 1997=100



Source: Texas Education Agency: Academic Excellence Indicator System, State Report 1996-1997 through 2007

Over the course of the decade ending in 2006-07, the share of LEP students in Texas increased from 13.7 percent of the student population to 15.9 percent. In the fall of 2006, there were 731,304 LEP students in Texas, 93 percent of whom were enrolled in Bilingual or ESL programs. This is a six percentage point increase from the 87 percent participation rate in 1997 (TEA, Academic Excellence Indicator System: 1996-2007).

Figure 2 -LEP Enrollment by Program

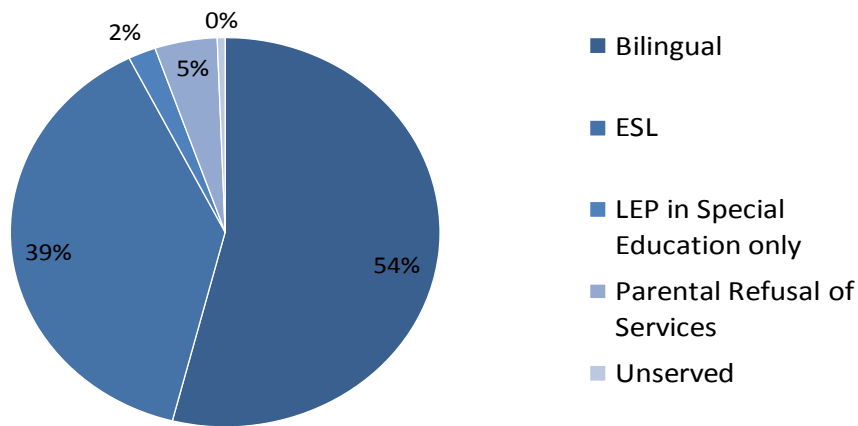


Source: Texas Education Agency: AEIS Data School Year 2007 and PEIMS Data School Year 2007

Figure 2 displays the populations of both non-LEP and LEP students in Texas by grade level for the 2007 school year. Clearly, the LEP population begins to wane considerably starting in third grade³. In fact, roughly 80% percent of the total LEP population is located in grades pre-kindergarten through third grade. The LEP population represents roughly 27 percent of the total population in the first grade, but only represents 4 percent of the twelfth grade total population. The LEP population growth also does not follow the non-LEP population enrollment patterns. This differential suggests that most LEP students enter the school system as younger students and then exit LEP status as they grow older, although it could also indicate that LEP students drop out of school at a higher rate than other students.

According to the Texas Education Code 29.053c, each campus must provide bilingual or special language programs if there are 20 or more LEP students⁴ in one grade level. Additionally, the Texas Administrative Code⁵ stipulates that if a campus is not required to offer bilingual services, they must provide English as a Second Language (ESL) services to LEP students regardless of the students’ native language and regardless of the total number of LEP students on the campus. The Texas Administrative Code mandates that any campus with at least one LEP student must provide programs of ESL, bilingual, or both. For post-secondary grades through eighth grade, campuses have the option of offering either a bilingual, English as a Second Language (ESL), or other transitional language programs. However, for grades nine through twelve the Texas Education Code specifies that campuses must offer English as Second Language (ESL) services.

Figure 3 – LEP Student Enrollment by Program in 2007



Source: Texas Education Agency: PEIMS Data School Year 2007

³ This pattern has been consistent through the past six years.

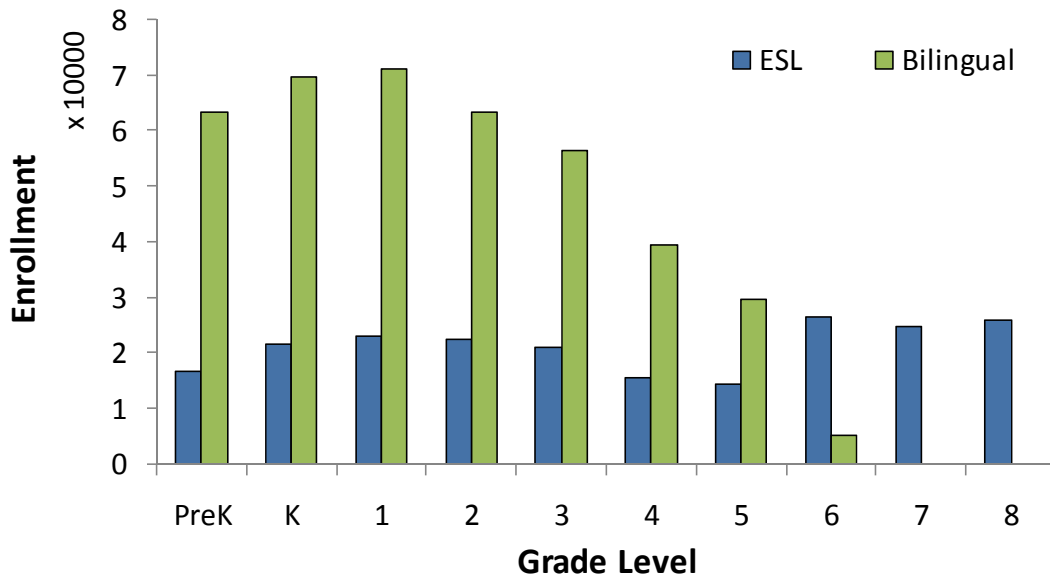
⁴ The 20 LEP student count may be a variety of languages and does not need to be a solitary language.

⁵ (TAC) [§89.1205 (d)]

In Figure 3, the population of LEP students is classified by the programs in which they are served. All programs include special education and non special education LEP students. Nearly 54 percent of LEP students are served through Bilingual instructional programs. ESL serves roughly 39 percent of LEP students. Parents are allowed to opt out of Bilingual/ESL services and in the 2007 academic year, 4.7 percent of families did not participate in services. LEP students who are served strictly through special education classes make up 2 percent of the total population, leaving only a very small fraction of students who were reported as unserved⁶.

The TEA reports 129 different languages⁷ were identified in Texas schools during the 2007 academic year. Of those languages, Spanish was spoken by 655,074 students, representing 92 percent of the LEP population. In addition to Spanish, the most common languages were Vietnamese, Urdu, Arabic, Chinese⁸, Korean, and Filipino.⁹ These languages had at least 1,000 students speaking the language. Twenty-five of the 129 languages were the native language of fewer than 5 students. The considerable number of languages spoken by a small number of children presents a challenge to districts in tailoring bilingual education services to match student needs.

Figure 4 -Bilingual & ESL Student Enrollment in 2007



Source: Texas Education Agency: Bilingual/ESL Updates 5/1/07 p. 8; AEIS Core Report 2007.

⁶ Texas Education Agency classifies 4,349 LEP students as unserved.

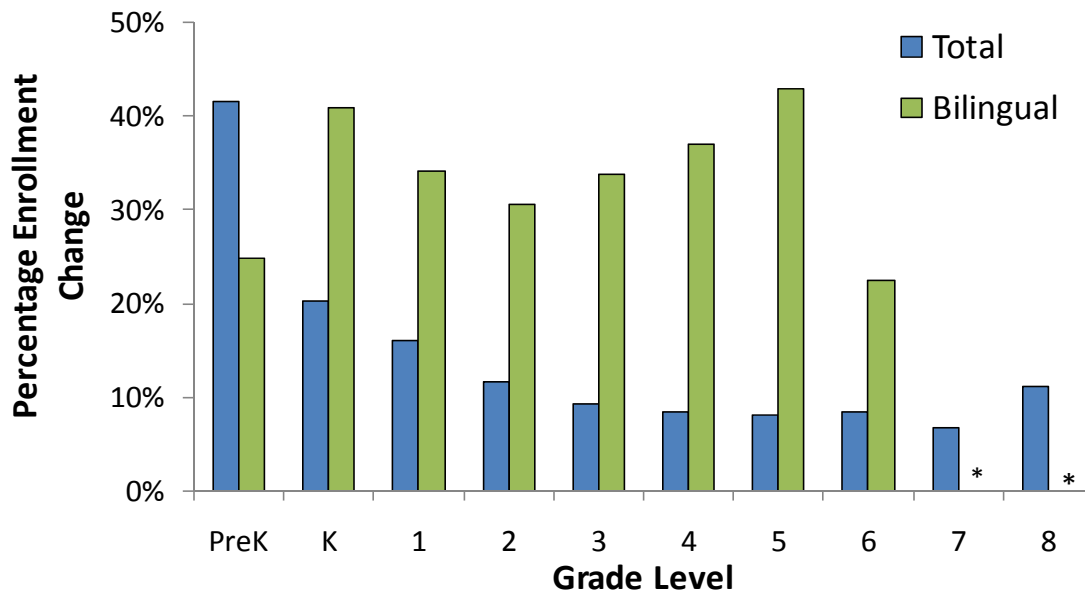
⁷ These are languages in which students consider as their 'home' or native language.

⁸ Both Cantonese and Mandarin

⁹ According to the Texas Successful School Study (Lucido, 2000), this language spectrum has changed since 1997-1998 when Laotian, Cambodian, German and Japanese were common.

As Figure 4 illustrates, first grade houses the most bilingual students and the population numbers begin to trail off through the succeeding grade levels¹⁰. For example, the bilingual population in Pre-K through eighth grade accounts for nearly all of the students enrolled in 2006-07 school year (TEA, Performance Education Indicator Management System: Fall 2007). However in seventh grade there were only 171 bilingual students and only 98 bilingual students in eighth grade. Additionally, since the Texas Administrative Code¹¹ mandates that an ESL program be offered in grades nine through twelve there are less than five students enrolled in bilingual services throughout the state in those grades.

Figure 5 – Total and Bilingual Enrollment Change from 2000-2001 to 2006-2007, by grade level



Source: Texas Education Agency: Bilingual/ESL Updates 5/1/07 p. 8; Texas Education Agency AEIS Data 2000-01 and 2006-07.
 *Data not available for 2000-2001.

Figure 5 shows the rate of growth of the Total general enrollment and bilingual enrollment for grades Pre-K through eighth grade from the 2000-01 through 2006-07 academic years. With the exception of Pre Kindergarten, the growth rate for the Bilingual population was much higher than the total population growth rate. The highest growth for Bilingual students was in kindergarten and the fifth grade. On average over the past six years, bilingual enrollment increased at least 4.5 percent per year in the grades Kindergarten through fifth grade.

¹⁰ Data on bilingual enrollment by grade level is not available past the six grades for 2000-2001.

¹¹ TAC [Sec. 29.053 (d)]

The Geographical Distribution of Limited English Proficient Students

The Texas population has increased by an estimated 2.9 million residents since 2000 (Texas State Library, 2008) and nearly half of the growth is explained through migration from other regions (Murdock, 2007). The growth of the general student population is reflective of this migration. However, the percentage of the LEP students has risen considerably faster than the general student population. The concentration of LEP students is also on the rise throughout the state of Texas. The number of counties with at least 5 percent LEP students increased from 117 counties in 1996-97 to 160 counties in 2006-07.

Figure 6 displays Texas counties by the percent share of LEP students from the total enrollment. The counties with the highest share of LEP students are located along the border with Mexico. However, the LEP shares in the counties which border New Mexico and in the Panhandle region are also relatively large. LEP students are also clustered in the Dallas, Houston, and San Antonio metropolitan areas. Finally, a large number of Texas counties along Interstate 35 and Interstate 45 have at least 5 percent LEP students.

Figure 6 – LEP Student Share of Total Enrollment 2006 - 2007

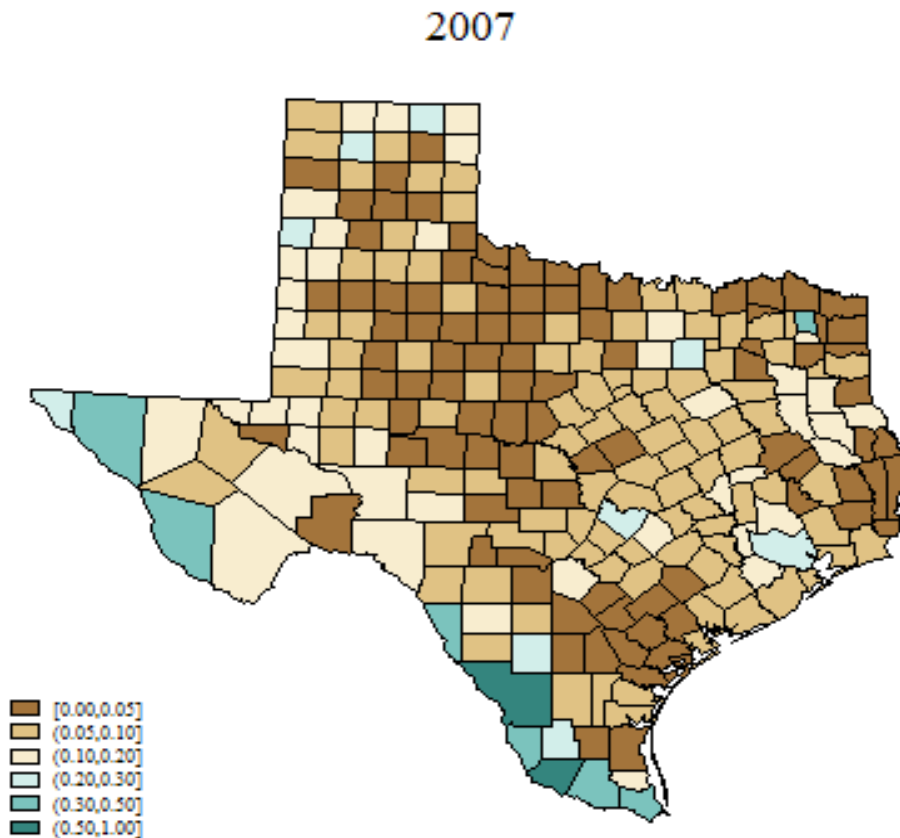
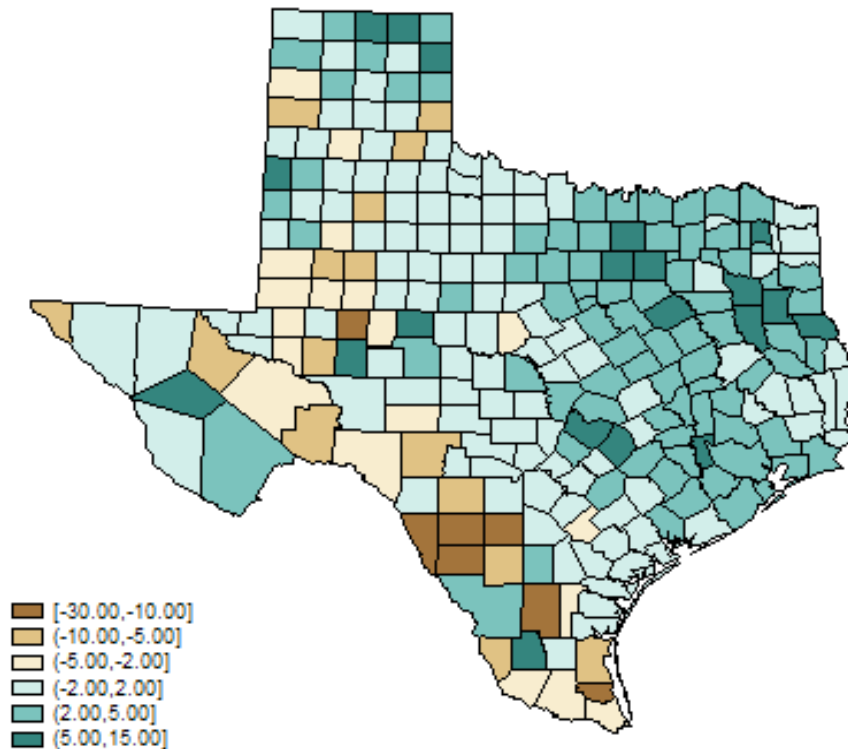


Figure 7 – Change in LEP Student Share of Total Enrollment 1997 - 2007

Change in LEP Student Share Per County from 1997-2007



Source: Texas Education Agency: Texas Education Agency AEIS Data

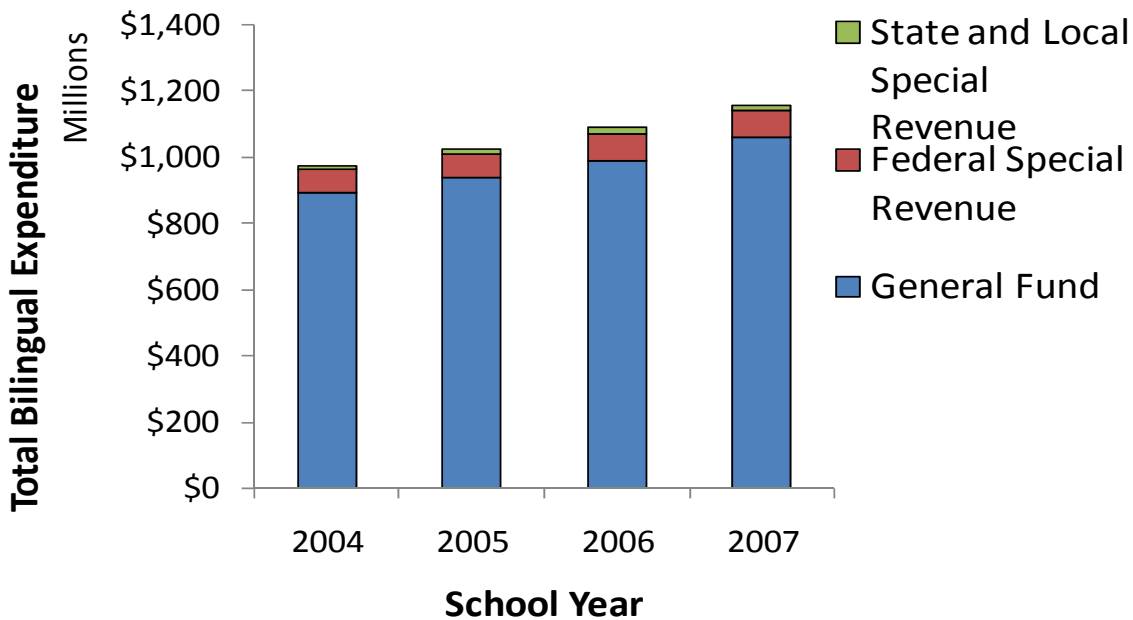
The expansion pattern in the past decade is particularly noteworthy (Figure 7). The LEP population spread east and northeast following both Interstate 35 and Interstate 45 and away from the highly concentrated border counties. Most counties had a zero to ten percentage point increase in the LEP share of the total enrollment. Jim Hogg County witnessed the largest growth with a 13.6 percentage point increase in the LEP proportion of the total population. Zavala County, near the Mexico border, had the largest decrease in the LEP population share. The share of LEP students in Zavala county fell from 42.16 in 1996-97 to 14.19 in 2006-07¹². The two maps clearly indicate there are a number of counties which are being affected by rising LEP student populations. Clearly, LEP growth has evolved into a statewide issue.

¹² The two school districts in Zavala county are Crystal City ISD and La Pryor ISD. According to AEIS, the share of LEP students in Crystal City ISD was 44.9 percent in 1997 and 14.1 percent in 2007, while the share of LEP students in La Pryor was 26.7 percent in 1997 and 14.7 percent in 2007.

Cost of Limited English Proficient Students

Currently, Texas schools are funded by an intricate system which includes both a foundation program and equalization guarantee. The state provides subsidies, in the form of formula weights, for students who have a higher cost of education. These students include children with disabilities, those identified as bilingual/ESL, or students who attend small rural schools. The current weight applied to bilingual/ESL students is 0.10. This means a student who receives bilingual or ESL services, will generate 10 percent more funding for his district than a peer who is not receiving additional educational services. This weight was last updated in 1985 (*West Orange-Cove v. Neeley*, Texas Supreme Court, 2005) and has remained constant over the past twenty years.

Figure 8 – Total Bilingual and ESL Spending by source of funds, in 2007\$



Source: Texas Education Agency: PEIMS Actual Financial Data

As seen on Figure 8, after adjustment for inflation, total spending for bilingual and ESL education from 2004 to 2007 increased dramatically with the rise in LEP enrollment. Spending amounted to \$1.15 billion in 2007¹³. Funding for both programs is generated by three sources: state & local special revenue, federal special revenue, and the general fund. The total expenditure for bilingual/ESL programs had a remarkable revenue increase of nearly 19 percent

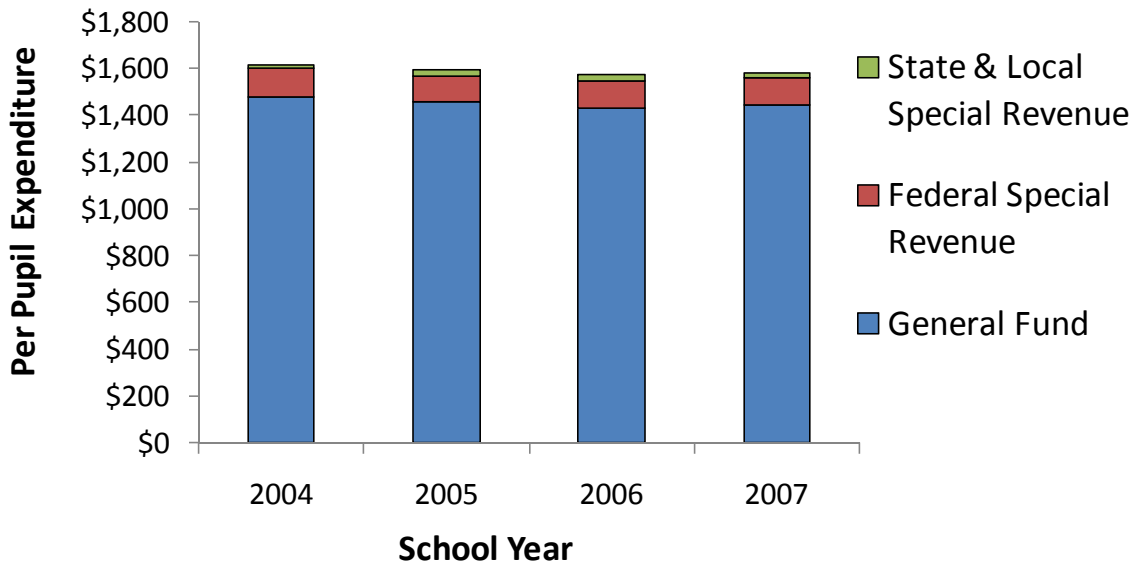
¹³ This figure is adjusted for inflation to 2007 dollars.

since 2004. The largest increase in revenue was located in the general fund which increased by nineteen percent. The federal special revenue only increased by fifteen percent. Although state and local special revenue increased every year since 2004, in 2007 funding from this source slightly decreased.

In 2007, there were 731,304 students identified as LEP with 679,352 classified as bilingual or ESL students. Last year, Texas paid \$1.15 billion for these services. This is more than a 270 percent increase from just ten years ago. The number of teachers providing Bilingual/ESL instruction has grown by over 7,000, with approximately 23,500 currently teaching Bilingual or ESL classes. Demographic projections suggest that enrollment in Texas’ bilingual/ESL programs will continue to rise and nearly double over the next 25 years (Murdock, 20007). Based on current spending levels for Bilingual/ ESL programs, we estimate that Texas will be spending \$1.9 Billion per year on these programs by 2040.

Although state spending for Bilingual and ESL programs has increased between the years of 2004 and 2007, spending per pupil has actually remained relatively stable (Figure 9). This leads to the conclusion that the rise in total bilingual spending is reflective of the increase in the LEP enrollments.

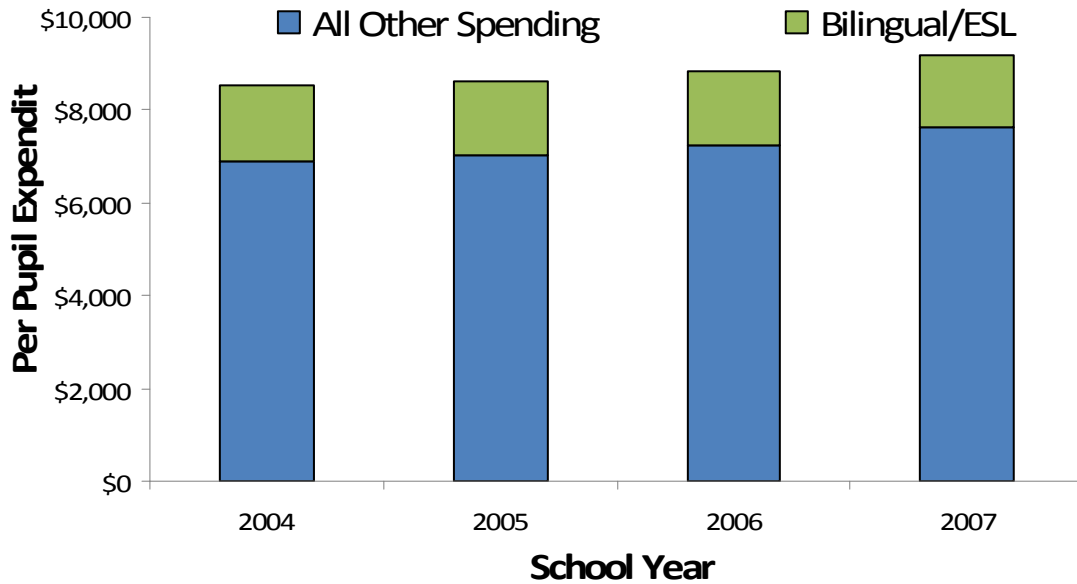
Figure 9 – Real Bilingual Spending Per LEP Student



Source: Texas Education Agency: PEIMS Actual Financial Data

Over the past four years the state has spent substantially more money on non-bilingual education than it has on bilingual education. In 2004 the state spent an additional \$1,617 per bilingual student while in 2007 it spent \$1,579 per bilingual student. This allocation of funds is in addition to the all other spending per pupil expenditure in Texas. This expenditure was an average of \$7,613 in 2007 (Figure 10).

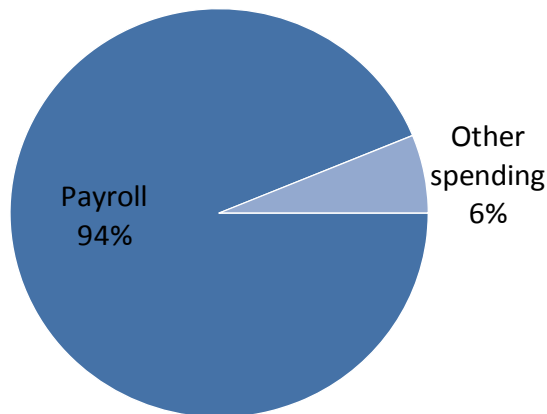
Figure 10 – Typical Spending on LEP Students by Bilingual/ESL and All Other Programs (in 2007 \$)



Source: Texas Education Agency: AEIS Data School Year 2004-2007 and PEIMS Data School Year 2004-2007

Figure 11 shows that of the funds dedicated to bilingual programs the majority of it was used for payroll purposes. Non-payroll spending includes supplies, employee travel, and general operating expenses.

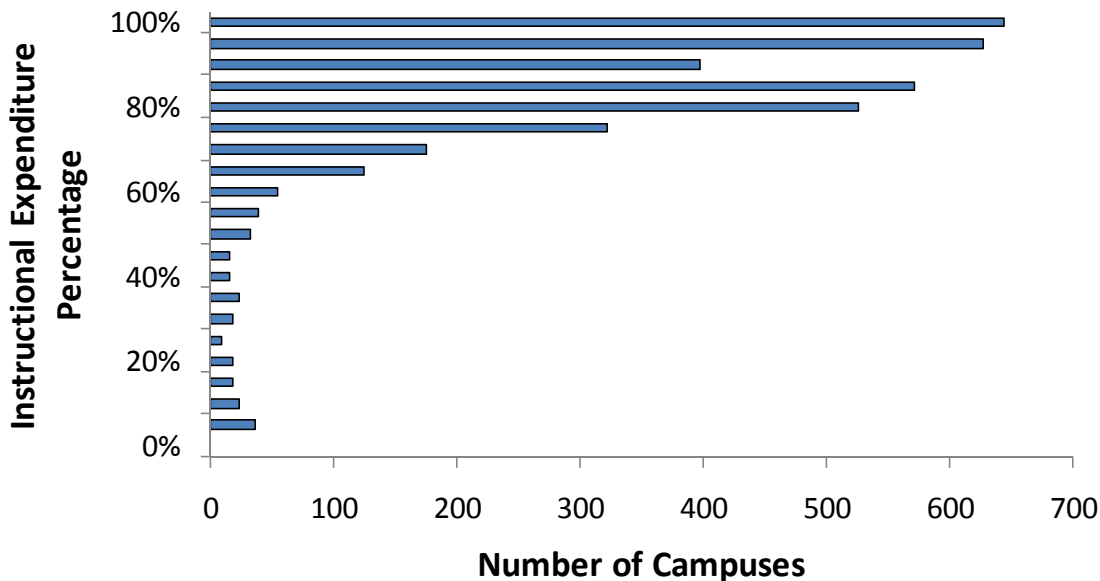
Figure 11 – Program Expenditures in 2007 by Object



Source: Texas Education Agency: AEIS Data School Year 2004-2007 and PEIMS Data School Year 2004-2007

Figure 12 shows that the majority of campuses are spending more than 65% of their bilingual funding for instructional expenses. On average, campuses in Texas spent 81 percent of bilingual funding on instruction in 2007. Of the funds dedicated to bilingual education, the average hides substantial variation at the campus level. More than 100 schools spent less than 30 percent of their bilingual education funds on instruction.

Figure 12 –Share of bilingual funding devoted to Instruction by campus



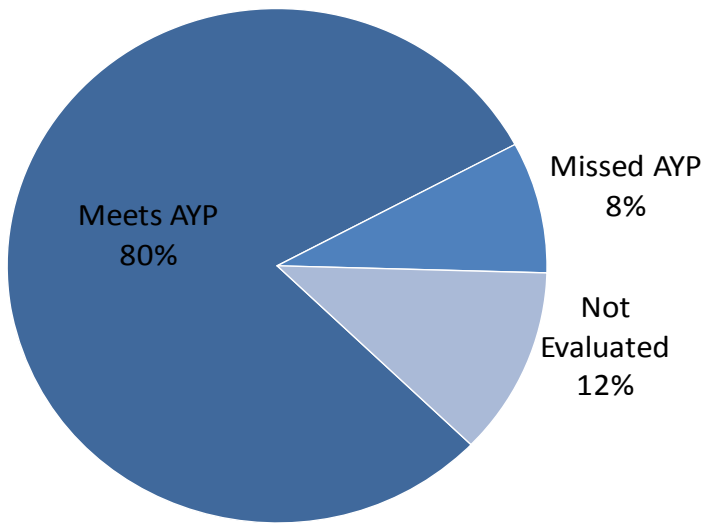
Source: Texas Education Agency: AEIS Data School Year 2004-2007 and PEIMS Data School Year 2004-2007

Academic Assessment of Limited English Proficient Students

The federal government requires the states to establish academic benchmarks and develop comprehensive and effective bilingual programs for LEP students. In 2007, TEA calculated the Adequate Yearly Progress (AYP) for nearly 6,500 campuses in Texas. According to Figure 13, eighty percent of campuses in Texas met the AYP standard. However, 664 campuses missed the AYP requirement. This accounts for approximately eight percent of the campuses measured by AYP. Over nine hundred schools were not evaluated for AYP progress¹⁴.

¹⁴ These campuses did not exist in the previous year.

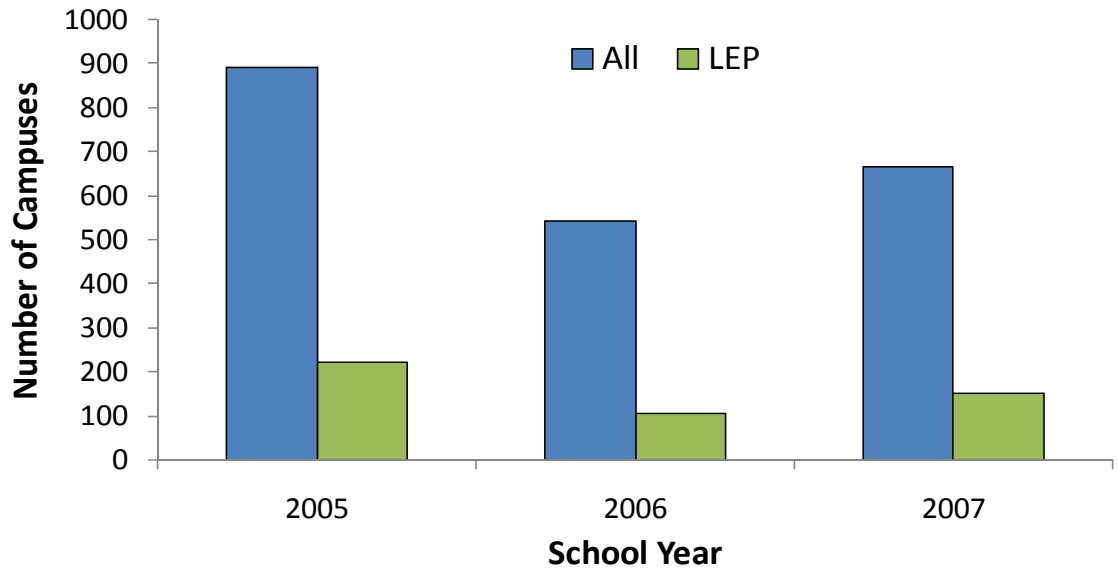
Figure 13 – Percentage of Texas Campuses 2007 AYP Results



Source: Texas Education Agency: Student Assessment Division, TAKS Statewide Performance Results 2003-2007

Figure 14 reinforces the relationship between the performances of LEP students and the campuses' ability to meet AYP. In addition, Figure 14 displays the number of campuses which failed to meet AYP in the years 2005-2007 due to a multitude of reasons (All) or because of reasons associated with their LEP students (LEP). In 2005, 223 campuses failed to meet AYP due to the performance of LEP students. In 2006, the number of campuses which failed to meet AYP decreased. However, this progress was not sustainable, and the number of campuses which failed to meet AYP rebounded in 2007.

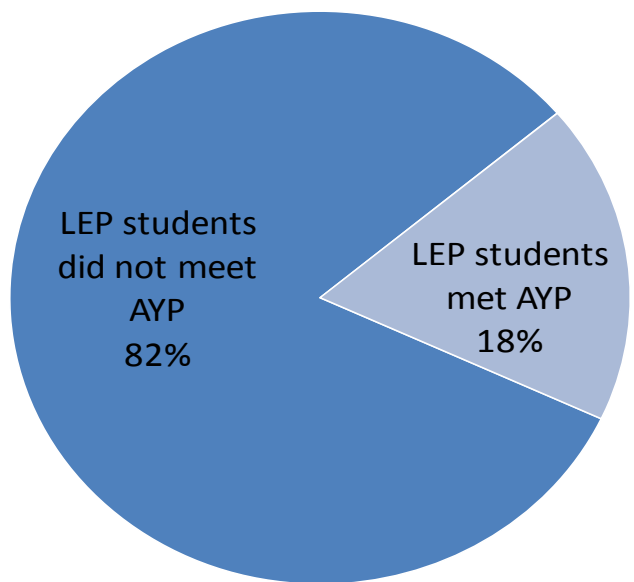
Figure 14– Number of Campuses Who Failed to Meet AYP from 2005-2007



Source: Texas Education Agency: Student Assessment Division, TAKS Statewide Performance Results 2003-2007

Among the 664 school that did not meet AYP in 2007, 198 had a large enough LEP population to be evaluated. The data shows in Figure 15 that 82 percent of those schools failed in relation to the performance of LEP students.

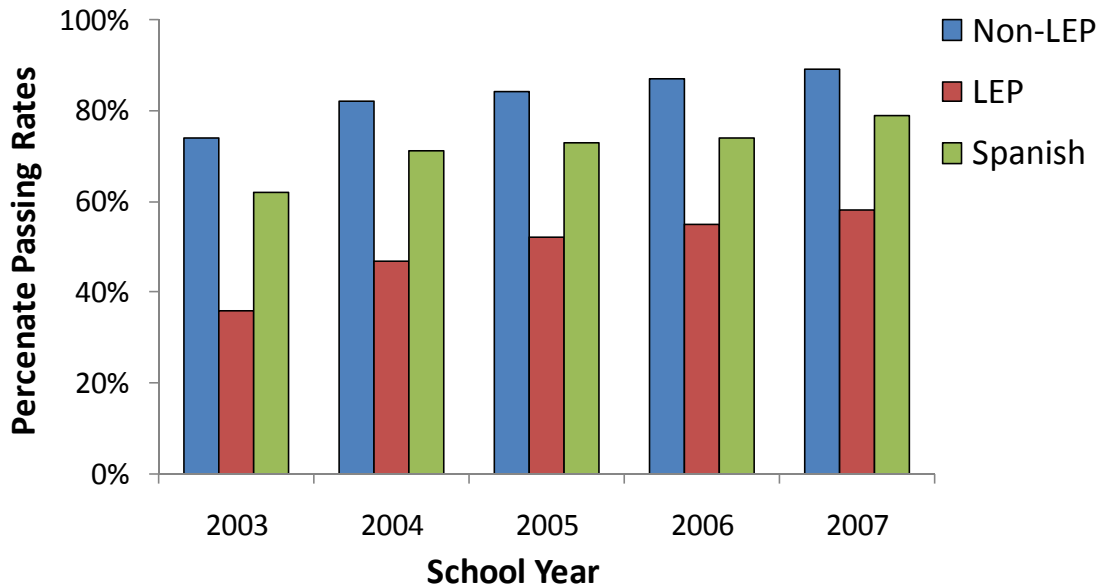
Figure 15 – Percentage of Texas Campuses with Significant LEP Population Who Failed to Meet AYP



Source: Texas Education Agency: Student Assessment Division, TAKS Statewide Performance Results 2003-2007

The other 18 percent failed for reasons unrelated to LEP students. Clearly the performance of LEP students is strongly associated with the overall yearly progress of campuses¹⁵.

Figure 16 – Reading TAKS Passing Rates – Grades 3 through 8

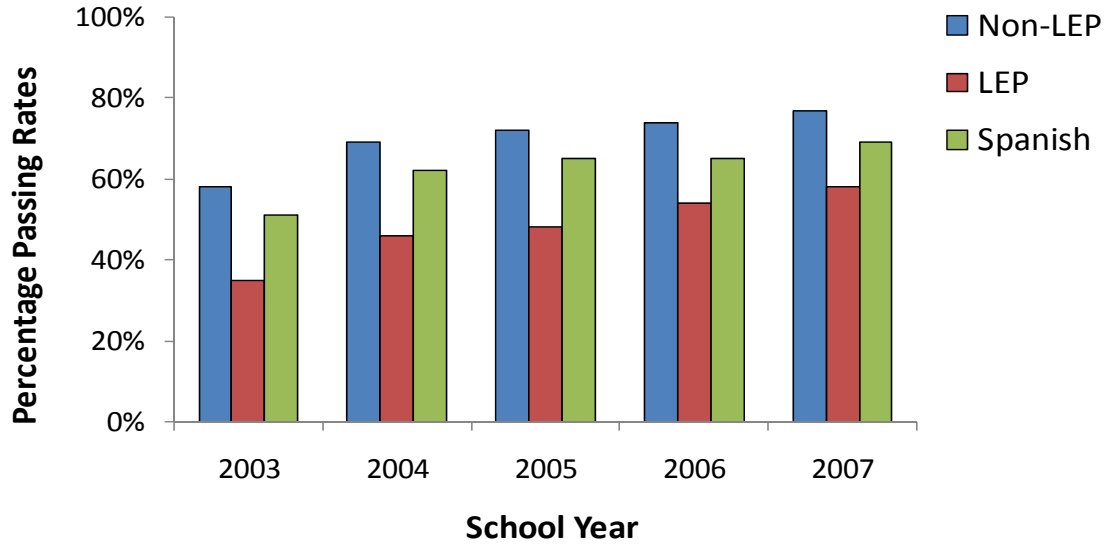


Source: Texas Education Agency: Student Assessment Division, TAKS Statewide Performance Results 2003-2007

As Figures 16 and 17 indicate, there is an academic achievement difference between LEP students and non-LEP students in both reading and math. Furthermore, the gap persists even when Spanish speaking students are tested in their native language. In 2007, there was a 31 percentage point gap between the passing rate for LEP students and non-LEP students in reading in grades 3-8. In math, there was a 19 percentage point difference between LEP students and non-LEP students in grades 3-8. The passing rates for non-LEP and LEP students are increasing over time; however, there is no evidence that the gap is closing.

¹⁵ In Texas schools are required to report TAKS results if they have a minimum of 30 LEP students. According to NCLB AYP measurements, schools have to have a minimum of 50 LEP students or these students have to make up at least 10% of the student population if the school has less than 200 students.

Figure 17 – Math TAKS Passing Rates – Grades 3 through 8



Source: Texas Education Agency: Student Assessment Division, TAKS Statewide Performance Results 2003-2007

The Scholarly Literature on Bilingual Education

Much of the existing bilingual education research has focused on which programs have been effective and what factors most influence student performance. Older studies concentrated on measuring the effectiveness of bilingual education, while more recent work in the field has focused on studying program characteristics. Through the analysis of prominent studies, we have been able to gain a better understanding of what contributes to successful programs. Unfortunately, the literature has gaps. Even where researchers have studied programmatic features, they provide little guidance on how to improve bilingual student performance.

Common Research Methods

Although existing studies have used a variety of research methods, our review of the literature will be based on accepted research practices in the field of bilingual education. Cummins (1999) found that scholars who approve or disapprove of bilingual education in general have come to a consensus of what should be considered as “methodologically acceptable.” Greene (1998), along with Rose and Baker (1996), agreed that acceptable studies had to do the following (Cummins, 1999):

1. Compare students in bilingual programs to a control group with similar student characteristics;
2. Through the design of the study, initial differences between the treatment and control groups should be controlled statistically through random assignment.
3. Student performance should be assessed through standardized test scores in English¹⁶
4. Differences between the scores of the treatment and control groups had to be determined by appropriate statistical tests.

Studies on bilingual education should also be mindful of LEP student mobility. Since a cohort of LEP students is most likely composed of a mixture of students who are new to the US school system (immigrant students), students who are new to a particular school, and students who previously attended the school, researchers should be very critical of comparing grade cohorts. Except where indicated, this review has been limited to articles that have met all of these criteria.

¹⁶ Hopstock (2003) argues that successful student performance can also be measured by assessing language, literary, and coherent knowledge.

Literature on Bilingual Education Programs

The state of Texas has a specific framework to classify Bilingual and ESL instruction models, so we classify the existing research based on this framework. However, we note that the distinction between programs in these studies is not always clear. The most recent bilingual education research pre-dates the state's terminology for bilingual education; therefore, the classification of these studies is not precise. Furthermore, our classifications are based on the bilingual program description in each of the studies. While we are confident in the studies we chose for this literature review, there are studies that were not included. The studies we chose to analyze all had thorough methodology explanations and described the impact of instruction on student performance.

Transitional Bilingual Programs

The state of Texas¹⁷ defines transitional bilingual programs as programs that serve LEP students in both English and Spanish before transferring them to English-only instruction. Table 1 identifies studies which have examined transitional bilingual programs. These studies found that transitional bilingual programs work if they are designed to be long term programs and if they are customized to meet the student needs within the school.

¹⁷ Texas Senate- SB 1871, 80(R) Legislative Session

Table 1 -Recent Research Into Transitional Bilingual Education Programs

Researcher	Major Findings Regarding Transitional Bilingual Programs
Troike (1978)	Implementation of the program more important than the type of program. Generic bilingual programs were no better than non-bilingual programs for LEP students
Ramirez (1992)	Bilingual language helps close the gap between ELL and other students
Greene (1997)	Use of native language has modest positive effects on students outcome
Rossell (2005)*	Statistics on bilingual enrollment overestimate the use of native language instruction
Thomas and Collier (1997)	Long-term bilingual programs attempting to close the achievement gap is more effective than short-tem remedial programs such as ESL.
Calderon (1998)	Reading performance increases as students spend more time in program with the use of cooperative learning model
Cummins(1999)	Instruction in native language doesn't have a negative effect on proficiency in the non-native language
Greshberg, Danenberg, Sanchez (2004)	Educators should better inform parents about choices between instruction methods; once size fit all policies do not serve all students
Rolstad (2005)	Bilingual education programs are better than to all-English approaches such as ESL programs
Wrobel (2005)	More time spent in bilingual programs may have negative effect on test scores
Verdugo and Flores (2007)	Use of native language should be incorporated into LEP instruction
* These Studies clearly fit the Texas (Senate Bill 1871) classification of bilingual education instruction modules.	

A study by Rolstad et al (2005) synthesized the empirical literature since 1985 and found that bilingual education programs are more effective in promoting academic achievement than are all-English approaches such as structured immersion and that some types of bilingual education programs are more effective than others. Moreover developmental bilingual education (DBE) programs which are designed to develop the academic use of a student's native languages along with English are "superior to transitional bilingual education programs" (Rolstad et al. 2005, p.572). In particular, they found that "programs designed to develop children's academic use of both languages are superior to programs that aim to use children's home language to transition them to all English instruction" (Rolstad et al. 2005, p. 590). The use of a students' native language as part of the instructional material was found to be advantageous for students. The study also found that long-tem bilingual education was superior to using short-term native language programs in increasing student performance. Rolstad et al. conclude that bilingual education programs are more valuable in promoting academic achievement in comparison to all-English approaches such as ESL programs.

Additionally, proponents of bilingual education agree that dual education programs aimed at increasing bilingualism and biliteracy are an effective way to develop English academic skills among “both linguistic minority and majority students.” (Cummins (1999), 30) A study by Thomas and Collier (1997) analyzed English language learning programs between 1985 and 2001 and concluded that program features, implementation, breadth of program focus, the quality of the school’s instructional environment, and the quality of available instructional time were important for having an effective program for ELL students.

Dual Immersion Language Programs

Dual immersion programs are defined by the state of Texas¹⁸ as biliteracy programs that either integrate students proficient in English with LEP students or programs that serve only LEP students and then transfers them to English-only instruction. These studies found while there were no clear indicators of what contributed to student outcomes, some bilingual students benefited from group interaction with other students with similar language skills.

Table 2-Recent Research into Dual Language Immersion Programs

Researcher	Major Findings Regarding Dual Language Immersion Programs
Cohen and Lotan (1990)	Bilingual students organized in heterogeneous groups benefit from interaction resulting in improved performance.
Ramirez (1992)	Bilingual language helps close the gap between ELL and other students
Thomas and Collier (1997)	Long-term bilingual programs attempting to close the achievement gap is more effective than short-tem remedial programs such as ESL.
Guerrero, Michael and Kris Sloan (2001)	No clear indication of what contributes to positive student outcomes
Rossell (2005)*	Statistics on bilingual enrollment overestimate the use of native language instruction
* These Studies clearly fit the Texas (Senate Bill 1871) classification of bilingual education instruction modules	

Guerrero and Sloan (2001) described four exemplary K-3 Spanish reading programs in Texas and attempted to identify common characteristics in schools which had high passing percentage at the third grade level in the reading portion of the Spanish TAAS. They found that a number of factors—such as support for Spanish literacy and biliteracy, high expectations of students’ performance, understanding of the Spanish language program and alignment the English programs—contributed to the success of these programs.

Cohen (1990) applied an organizational metaphor to analyze the dynamics of teaching and

¹⁸ Texas Senate- SB 1871, 80(R) Legislative Session

learning in the classroom. In the case of bilingual education, Cohen found that students benefited the most when placed in groups that were heterogeneous in terms of language proficiency and academic skills. Additionally, Cohen found that student performance on reading, math, and science standardized tests improved when the context in which students learned was interesting and meaningful.

English as a Second Language

English as a Second Language Programs are defined by the state of Texas¹⁹ as programs that serve students of limited English proficiency with English-only instruction along with providing a certified full-time teacher for content instruction or a certified part-time teacher for language arts instruction. The literature suggests that ESL is not as effective when teaching students content mastery and language acquisition as long term bilingual programs.

Table 3 -Recent Research Classified by Texas Bilingual Education and Special Language Programs Categories

English as a Second Language	Major Findings Regarding ESL Programs
Thomas and Collier (1997)	Long-term bilingual programs attempting to close the achievement gap is more effective than short-tem remedial programs such as ESL
Rossell (2005)*	Statistics on bilingual enrollment overestimate the use of native language instruction
* These Studies clearly fit the Texas (Senate Bill 1871) classification of bilingual education instruction modules.	

Bilingual education studies, beginning in the 1970s, largely measured students’ performance on standardized tests, particularly in English. Most studies since then have researched elementary Spanish-English bilingual education. While studies have focused on either program characteristics or student performance measures as indicators of effective bilingual education programs, few have taken a comprehensive approach to identify commonalities among successful programs.

Regarding ESL programs, Thomas and Collier (2005) found that the negative effects of a student's socioeconomic status can be overcome to a small extent with the help of a strong dual language program. Their research demonstrated that a well implemented ESL program was able to close about half the performance gap between LEP and non-LEP students. Thomas and Collier also found that "bilingual/ESL program must meet students’ developmental needs.”

¹⁹ Texas Senate- SB 1871, 80(R) Legislative Session

The programs should use cooperative learning and media intensive instruction tools in order to be effective.

Rossell (2005) found that many non-Spanish bilingual programs were actually sheltered immersion programs and did not provide any additional instruction or tools to the LEP students other than having a qualified biliterate teacher. Most of the findings were based on classroom observations and teacher interviews conducted in California schools.

Effective Classroom Strategies

In addition to program evaluations, the literature suggests a number of classroom strategies that might be effective in improving LEP student performance. These strategies include cooperative learning, culturally responsive instruction, and oral interaction.

Verdugo and Flores (2007) find a number of factors that contribute to student achievement including a positive school environment, the use of a student's native language in the instructional process, and the use of cooperative learning for ELL students. A positive school environment is achieved when schools value the linguistic and cultural background of students, have high expectations of their students, and involve students in overall school operations. There is a lack, however, of any clear suggestions or indications of how schools can develop positive school environments. In their research, Waxman and Padron (2007) concluded that "culturally responsive instruction, cooperative learning, instructional conversation, cognitively guided instruction, and technology-enhanced instruction" are among the most effective educational practices to educate Hispanic students. While this research focused on Hispanic student performance in particular, it is still relevant to the discussion of educating the LEP student population.

According to Calderon et al (1992), students whose home language is Spanish and who are taught to read in Spanish have similar or better English reading skills as compared with students who are taught to read in English only. Furthermore, Calderon et al (1992) determined the use of the cooperative learning model has often been suggested for bilingual classrooms. Cooperative learning seems the most appropriate for bilingual education because it improves reading performance in a student's home language. Cooperative learning is even more beneficial for students in transitional programs who are transitioning into English reading. Calderon et al argue that for students to reach a high level of English proficiency, they must participate in a program that encourages a substantial amount of oral interaction, meaning negotiation, and problem solving exercises.

Ramirez (1992) compared the effectiveness of programs for limited-English-proficient (LEP) students, including structured English-immersion strategy, early exit bilingual programs and late-exit bilingual programs. The study used data from two thousand elementary schools over a four year period. The research question attempted to determine which amongst the Structured English-Immersion Strategy, Early-Exit, and Late-Exit Transitional Bilingual programs was the

most effective in closing the performance gap between Spanish speaking LEP students and the English speaking students. The study found that that instruction in their native language does not interfere or delay their acquisition of English language but helps them catch up with other students in English language arts, English reading, and math. On the other hand, by grade six the gap between LEP students and other students is exacerbated by having only English instruction.

After conducting a cross sectional and longitudinal study, Munoz (2006) concluded that learning strategies vary as children develop, implying a bilingual education program for elementary students will have dissimilar outcomes when applied to secondary students. The study also noted that differences in learning strategies were not dependent on entry level proficiency, but rather on age. Additionally, changes in learning strategies increase as students got older.

While a number of previous studies have focused on program characteristics, unfortunately, the literature does not provide any guidance as to the most cost-effective programs or as to which characteristics most contribute to student performance. Furthermore, it is likely that differences in educational context can have a significant impact on program effectiveness. What works in Connecticut may not work in Texas. Therefore, we see the need for Texas-specific research on the impact of ESL and bilingual programs. With our study we hope to expand on existing literature and enhance the understanding of successful bilingual programs.

Previous Best Practices Studies in Texas and California

Given our interest in best practices we paid particular attention to two case studies of bilingual practices—one from California and one from Texas. These studies were not included in our general literature review because they did not meet the requirements of methodologically acceptable research methods. In particular, they did not compare teacher practices in their sample of successful schools to teacher practices of a control group of other schools. These case studies were also limited by the small number of campuses used to analyze bilingual education. However, these studies provided direction on overall bilingual education concepts to be evaluated.

A study of bilingual education in California, titled “Successful Bilingual Schools: Six Effective Programs in California” (Gold, 2006) looked at elementary schools and identified schools based on multiple criteria such as scores on the state’s academic performance, index annual yearly progress, performance on the California Standardized Testing and Reporting (STAR) test, and English Language Development Test (CELDT). The criteria used to identify the successful schools include high proportion of Spanish speaking students, high proportion of ELL students enrolled in bilingual education, gains in the annual performance index for the school as a whole and for Spanish speakers, high number of students from low socioeconomic status, high number of Hispanic students, size of the school, and mobility of students wherein students received a consistent program over the school year.

The schools studied exhibited similar program characteristics including beginning initial instruction in kindergarten and first grade in Spanish. The programs were able to move students to English reading and academic instruction by third grade, others by fourth or fifth grade. The study recommended identifying and implementing effective practices for ensuring student performance.

The TEA Texas Successful School Study (2000) identified seven schools that were successful with their bilingual education programs. The schools were all elementary schools and TAAS was the only measure used for determining school ratings. The seven schools were identified from twenty six schools from the Dana Centre's Title 1 study which identified twenty-six high achieving schools with high poverty rates (with more than 60 percent students receiving free lunches). The campuses had more than 40 percent LEP students, more than 50 percent economically disadvantaged students, zero TAAS exemptions, and had a rating of either "exemplary" or recognized based on the Academic Excellence Indicator System (AEIS).

The Texas Successful School Study found that the district leadership practices that facilitated the "academic and linguistic growth and success" of language minority students included staff development programs focused on language acquisition provided by the district along with efforts to seek experts in the field to help with this staff development and bilingual education methodologies (Texas Successful School Study (2000), 29). Moreover, the Texas Successful School Study found that in all seven successful schools district administrators in charge of bilingual education were involved with the implementation of whichever program their school was providing for their LEP students. According to the Texas Successful Schools Study, one of the most important characteristics of all seven programs was the shared knowledge regarding the education of language minority children among principals and teachers which ensured "appropriate instruction in the classroom regardless of grade level" (Texas Successful School Study (2000)33).

Lessons Learned from Literature Review

While older studies have focused on assessing the effectiveness of bilingual education, more recent research has centered on understanding program and instructional characteristics of bilingual programs. Existing literature highlights the use of some instructional methods to improve student performance. Some particularly effective strategies, according to the literature, include

- Native language instruction
- Cooperative learning model
- Culturally responsive instruction
- Extensive oral interaction

There is no evidence these strategies are being used throughout Texas or if they would be effective in a Texas school setting. Our study analyzed the prevalence and extent to which these strategies are being used.

Identifying Successful Schools

Our best practices study will use methods that are similar to those used by previous studies in the field. However, unlike the Texas Successful Schools Study (2000), this study will include a value-added analysis as well as the new English Language Learners Progress Measure. Success will be measured through English language proficiency, content mastery, and annual student progress on standardized tests.

The literature suggests that the identification of a school as being successful can vary depending on the measure used. To properly identify successful schools we will use data that has been collected and available from the Texas Education Agency (TEA). This study will only consider schools that have at least 30 LEP students. This is the minimum number of students for a specific student group that the TEA will consider in its Accountability Rating System (*2007 Accountability Manual*, p.8).

Only campuses that are coded as either elementary or middle school are considered. This study excludes campuses that are rated by the TEA as secondary (grades 9-12) or elementary/secondary (grades k-12). We focus on elementary and middle school campuses because most LEP students are in elementary grade and our reading of the literature suggests that the characteristics of effective high school programs are different from the characteristics of effective grade-school programs (Munoz 2006), so combining the two types of schools in one analysis could yield misleading results. Furthermore, we are interested in differences between bilingual and ESL programs, and high schools do not offer bilingual education programs.

Table 4 displays the total number of public schools in Texas, the number of elementary and middle schools, and the number of schools used in this study. The sample is less than half of all schools in Texas for each year. Constraining the sample to campuses with at least 30 LEP students has a greater effect on the sample size than restricting the sample to only elementary and middle school campuses.

Table 4 -Data Analysis Sample Size by academic year²⁰

Academic Year	Number of Public Schools in Texas	Number of Elementary and Middle Schools	Number of Schools with at least 30 LEP students
2006-07	8,061	5,881	3,554

Source: Texas Education Agency: Academic Excellence Indicator System, 2003-2007

The study will focus on four indicators that were developed after considering multiple measures that indicate the success of schools. The indicators include TAKS Passing rates that show how the schools performs with regard to its students passing the TAKS test, the TAKS scores to show how students fare in the test and ELL progress measure which shows gains made on language acquisition. In addition, a value added measure considers the gains made by students' content mastery as indicated by the gains made by a cohort of students in math and reading tests. While these measures are available for all students, this study will focus on the achievement of only LEP students.

English Language Learners Progress Measure

The English Language Learners Progress Measure was first introduced in the 2005-06 academic year. Prior testing measures used by the TEA excluded students who were once considered LEP, but were no longer classified as LEP at the time of testing. As a result, these measures tended to underestimate campus level performance because students who had successfully exited LEP status were excluded. To correct this problem, the English Language Learners Progress Measure includes current and former LEP students in its sample. For the 2006-07 academic year, the English Language Learners Progress Measure included former LEP students in their first or second year after their exit from LEP status²¹.

The measure shows the percent of these students who meet one of the following:

- Meets the passing standard on the TAKS English reading/English Language Arts test,
- Meets the proficiency level on the Reading Proficiency Tests in English (RPTE)²², or
- Shows progress on the RPTE from the prior year.

²⁰ Data is from the TEA's Academic Excellence Indicator System

²¹ The definition of the English Language Learners Progress Measure comes from the 2007 Glossary for the AEIS System.

²² The RPTE is a part of the Texas Language Proficiency Assessment System (TELPAS). The RPTE measures the English proficiency of Limited English Proficient students and is administered to recent immigrants who are exempted from state assessments and to certain students in conjunction with the Spanish and English TAKS.

Table 5 displays summary statistics of the English Language Learners Progress Measure for the 2006-07 academic year. The average percent of LEP and monitored LEP students showing progress were 76.0 percent and 71.5 percent for elementary and middle school campuses, respectively.

Table 5 -English Language Learners Progress Measure Statistics

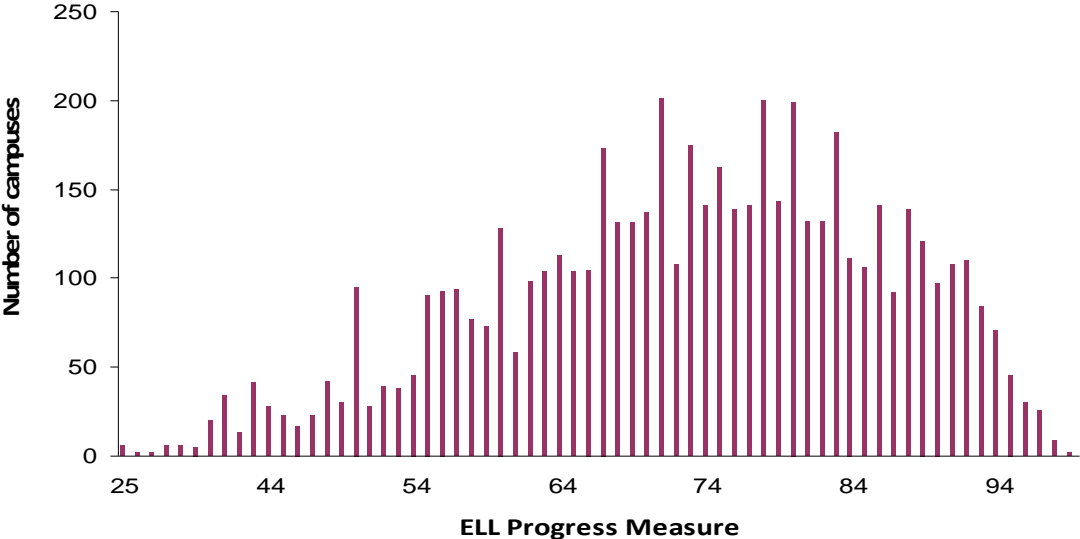
School Type	Campus Count	Average	Median	Range
Elementary (E)	2548	76.0%	77	99 – 25
Middle School (MS)	689	71.5%	72	97 – 25
Both E & MS	3,237	75.1%	76	99 – 25

Source: Texas Education Agency: Academic Excellence Indicator System, 2003-2007

The table above provides aggregate information about the ELL progress measure. To understand how schools perform overall, we look at the frequency distribution of school campuses against the ELL progress measure

Figure 18 below, is a distribution of the English Language Learners Progress Measure for the 2006-07 academic year for schools in our sample. School campuses are ranked by proportion of their LEP student population that has shown progress according to the English Language Learner Progress Measure. Most schools are above the 60 percent mark, indicating that in most schools at least 60 percent of LEP students are making progress on at least one of the three proficiency measures.

Figure 18 -2007 English Language Learner Progress Measure



Source: Texas Education Agency: Academic Excellence Indicator System, 2003-2007

Texas Assessment of Knowledge and Skills (TAKS) Passing Rates

One measure of success for assessing school performance is passing rates for standardized tests. A significant limitation of this indicator is that it does not consider former LEP students who have recently exited LEP status. These students can reasonably be considered as successful. By excluding them from this indicator, the indicator will tend to underestimate the performance of schools in educating LEP students. However, this indicator is used for accountability purposes, so we include it in our analysis of successful schools.

Testing data reviewed from the Texas Education Agency included the English and Spanish TAKS passing rates for every grade from third through eighth. Our survey includes both elementary and middle schools and the TAKS Passing rates are indicative of the performance of the schools. However, these rates may be dependent on grade levels taught in the schools. For instance, TAKS may be more difficult in grade eight compared with grade three. If we were to compare a middle school to an elementary school TAKS passing rates, we would find the elementary school to be more successful.

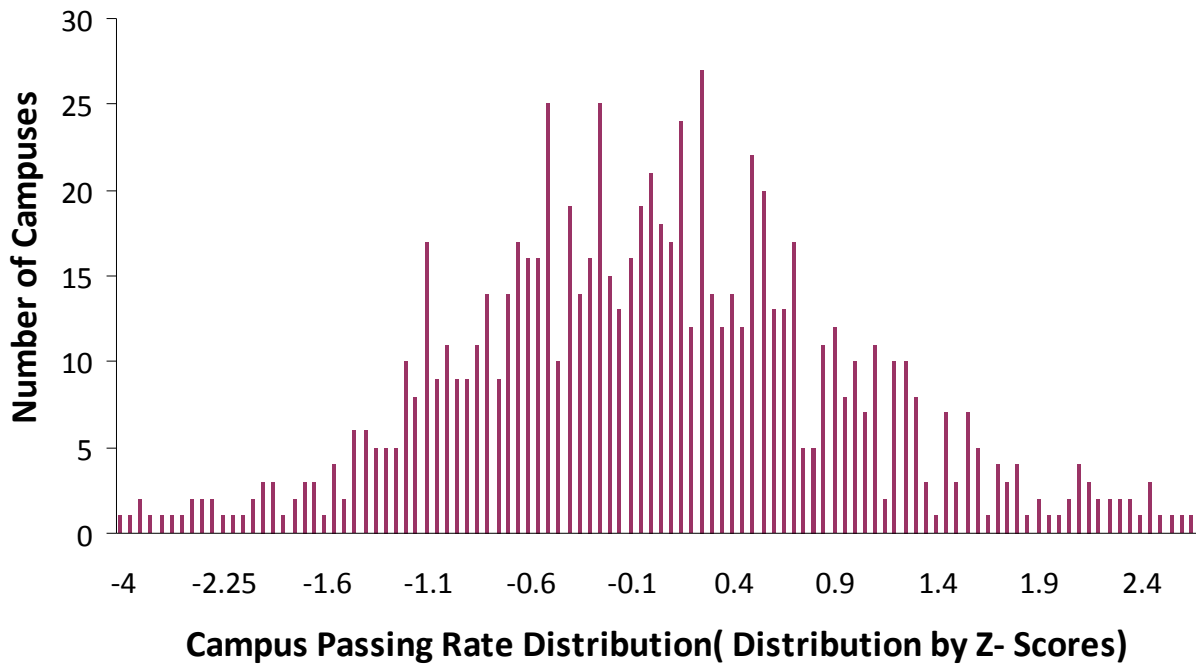
To ensure comparability across campuses that serve different grade levels, we transformed the campus level passing rates by subject matter, language of administration and grade level into Z-scores. The Z-score is a standardized score that assigns a numerical value based on the TAKS passing rate of the campus based on standard deviations from the average passing rate of schools in the survey. Thus, a school with the average passing rate in fifth grade reading would have a Z-score of 0 for fifth grade reading, a school that had a passing rate one standard deviation above the mean would have a Z-score of 1, and a school with a passing rate two standard deviations below the mean would have a Z-score of -2. The higher the Z-score, the higher the share of LEP students passing the TAKS test²³. The conversion of the TAKS passing rates into Z-scores prevents the survey results from being biased (either upward or downward) depending on the number of LEP students.

The Z-scores for the English and Spanish passing rates for grades three through eighth were then averaged for all elementary and middle school campuses with greater than 30 Limited English Proficient Students.

Figure 19 below is a frequency distribution of the number of campuses that have a particular TAKS Passing rates Z-score. We see that this distribution is very similar to a normal distribution with a majority of the campuses being concentrated near the mean Z-score. Campuses that have positive Z-scores perform better than the average of all campuses while those with negative scores fare poorly compared with the average of all the campuses.

²³ Our unit of analysis in this case is the campus, and not the student. As a result, a school with exactly 30 LEP students in one year is therefore weighted equally to a campus with 500 LEP students. We do not weight the z-scores to account for differences in the number of students across campuses.

Figure 19 -2007 LEP TAKS Passing Rates: Distribution of Average Passing Rates (by Z-Score) for the 2006-07 academic year



Source: Texas Education Agency: Academic Excellence Indicator System, 2003-2007

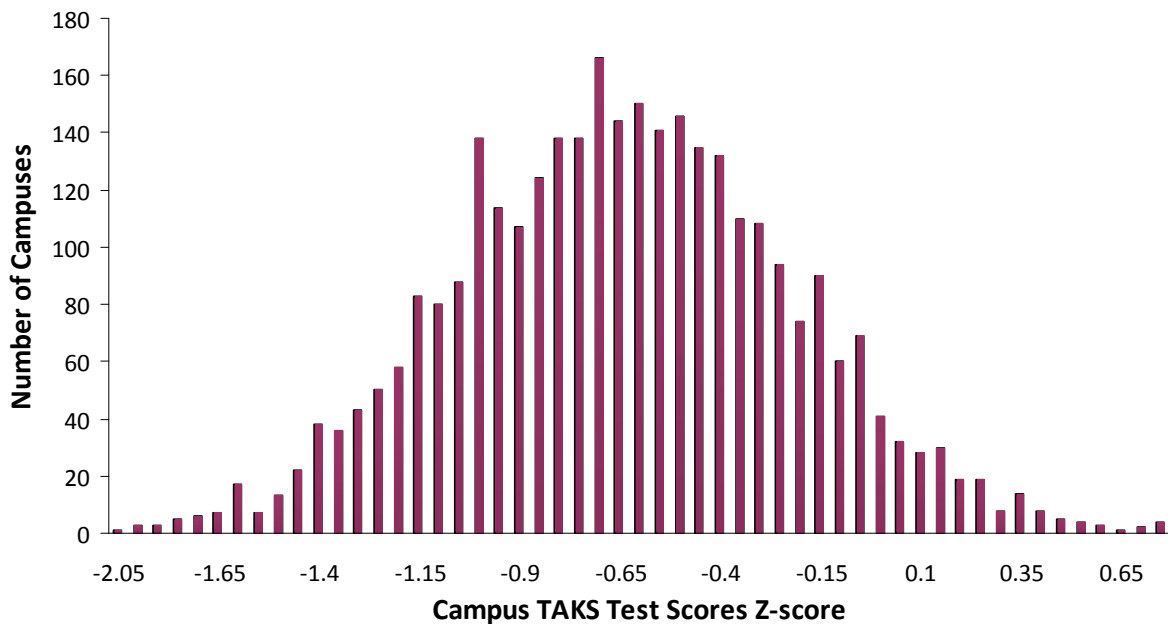
Texas Assessment of Knowledge and Skills (TAKS) Scores

School performance can be assessed on the basis of student scores on standardized tests. The TAKS passing rates shows us the number of students that passed the TAKS test but does not show how the students actually performed on the TAKS test. Based on the distribution of the TAKS scores, we are able to compare schools. While passing rates exhibit how many students met the minimum threshold for passing the TAKS test, the scores help us identify how well the students did on the test. Considering both these measures help us understand of the performance of the schools better. For example, some schools might have 90 percent students passing with the minimum scores, while another school might have 90 percent with very high individual scores, and 10% failing. By looking at the TAKS scores in relation to the TAKS passing rates, we can observe the variation in student scores on the campus level. Either of these schools is a successful school depending on what measure is used. Ignoring performance on either of these measures would entail ignoring a successful school.

The individual scores of all the students were converted into a Z-score based on the mean score achieved by students at each grade level and subject. The student level scores were converted for grades three through eight. These Z- scores at each grade level were then aggregated for all

grade levels at the campus levels. The Z-score thus obtained allows us to compare different campus with different grade levels. The grade level Z-score was calculated using the PEIMS student level data. Again, a Z-score of zero means that the school had average TAKS scores compared to the other schools in the sample. The Z-score is not centered on zero because non-LEP students were considered while constructing the Z-score for each grade. The Z-Scores for TAKS tests scores centered at -0.65 for our sample shows that LEP scores are generally 0.65 standard deviations below non-LEP scores.

Figure 20 - 2007 LEP TAKS Scores: Distribution of TAKS Scores (by Z-Score) for the 2006-07 academic years



Source: Texas Education Agency: Academic Excellence Indicator System, 2003-2007

As Table 6 illustrates, elementary schools are much better than the middle schools on both the TAKS passing rates and TAKS passing scores. We also see that the ranges of values on the Z-scores are more widely distributed for the elementary schools compared to middle schools.

Table 6. Distribution of Z-Passing Rate and Z-TAKS Test Scores.

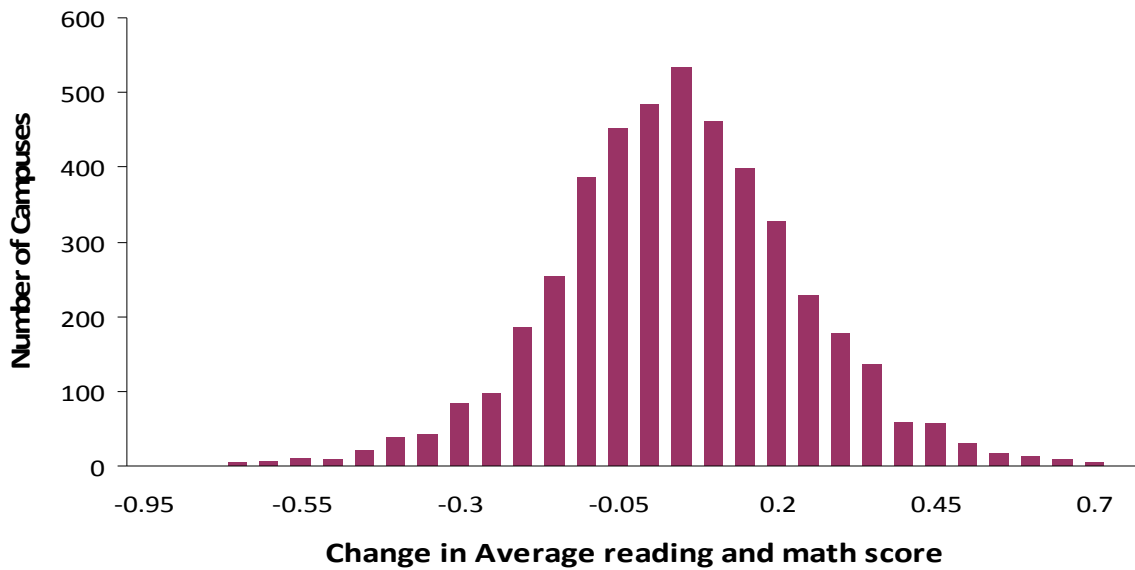
Statistic	Z-Passing Rate Elementary Schools	Z-Passing Rate Middle Schools	TAKS Test Scores Elementary Schools	TAKS Test Scores Middle Schools
Mean	-.0022528	-.009384	-.5165162	-.9497364
Median	-.0024788	-.0414991	-.5181212	-.9611965
Minimum	-1.912276	-2.152667	-2.032698	-1.870613
Maximum	8.990477	2.183605	.8193782	.2299309
Standard Deviation	.5114727	.705119	.3927374	.318075

Value-Added Analysis

Another measure used in this study to identify successful schools is a value added analysis. A value-added analysis controls for prior test scores to measure the impact of specific educational programs on the education of LEP students. To construct this measure, we compared the TAKS scores for a cohort of students who were identified as LEP in grades three through 8 at some point since 2003²⁴. The changes in scores were considered for a matched cohort of LEP students in the third, fourth, fifth and sixth grades. The indicator is constructed at the campus level and reflects gains made on the TAKS scores in math and reading by the cohort. It does not control for any systematic variation arising out of variations in incomes for individual LEP students or the difficulty of the TAKS at different grade levels.

²⁴ For calculating the gain on the TAKS test for reading and math, the scores for LEP students for current years were first converted to Z-scores based. The TAKS scores for previous year were also converted to Z-scores. The gains were calculated based on the change for the Z-score from previous year to the current year. This process was repeated for all students who were ever LEP from 2003-2007.

Figure 21 - Change in LEP TAKS Scores from 2003-04 to 2006-07 for the Math and Reading TAKS²⁵



Source: Texas Education Agency: Academic Excellence Indicator System, 2003-2007

Correlation Across Indicators

As a further check to ensure that the indicators created were not highly correlated we checked for correlation among four indicators. Table 7 summarizes the results of the correlation. We see that Z score of TAKS Passing rate and Z scores of the TAKS scores are moderately correlated at 54.52%. There is low correlation of TAKS Scores with the value added and the ELL Progress measures (34.41% and 20.6 % respectively). We see that Z Scores of the TAKS Passing rates have low correlation with the value-added (16.3%) and the ELL progress measures. The Value added measure and the ELL progress measures also exhibit low correlation (9.1%).

²⁵ This chart is compiled by averaging the change on the math and reading passing rates for a cohort of students who started the third grade together during the 2002-03 academic year.

Table 7 - Correlation amongst indicators used for the study

	Z TAKS Scores	Value added (Reading & Math gain)	Z TAKS Passing rates	ELL progress Measure
Z TAKS Scores	1.00			
Value added (Reading & Math gain)	0.3441	1.00		
Z TAKS Passing rates	0.5452	0.1632	1.00	
ELL progress Measure	0.2059	0.0912	0.2918	1.00

The low correlation shows that these indicators are indeed very different from each other and can be expected to represent different measures of outcomes in the schools.

The results of the correlation above supports our assumption that having only one measure would have biased our results substantially since indicators measure different aspects of campus performance. We considered multiple indicators to fully explore the campus' performance.

Given the low correlation across indicators, it is not surprising that only a handful of schools are high performing in all four dimensions.

Methodology

We used our four measures of student performance to assess the performance of schools. Since a few schools were successful in all the outcome measures, it was challenging to broadly identify successful and unsuccessful schools. Thus, additional data on the types of programs being offered to LEP students and various school characteristics are needed to determine the commonalities among successful schools.

Survey Methodology and Data Collection

To identify best practices in the state of Texas it is necessary to understand the specific characteristics of these schools and their bilingual programs. The research team had the option of either adopting a case study approach or conducting a survey of teachers in schools currently administering bilingual programs.

Given the time and resources at our disposal, the case study approach would pose a number of limitations. The case study approach would allow us to only analyze a small number of programs and schools. Drawing conclusions for the entire state of Texas based on such a small sample might seem questionable. On the other hand, we had the option of reaching out to many more schools through a web-based survey. The data collected through the survey are more reliable given the size of the sample. Given the reliability, robustness, and larger sample size, the research team decided to conduct a web-based survey to collect information about successful bilingual programs in Texas.

With the use of the survey instrument, it is possible to either conduct an anonymous or confidential survey. In an anonymous survey, participants do not disclose any data that would identify them including their personal or school name. In a confidential survey, participants are asked to provide some data that helps the research team identify the participant (in this case the school name). After considering both survey methodologies, the research team decided to use confidential surveys instead of anonymous surveys to collect data regarding bilingual education programs in Texas. The survey was completed on-line by bilingual teachers throughout Texas.

Also, with a confidential survey, the research team factored demographic and financial information to gather more insight into the characteristics of a successful program. Furthermore, since we were able to trace successful programs to their district, we analyzed district characteristics that might be contributing to successful programs. Since the research team guaranteed complete confidentiality to all survey respondents, we don't expect the response rate to have been significantly different between an anonymous and confidential survey.

In this confidential survey teachers were asked to identify their school name; however, the school name will not be used as part of this final report. The research team realized that response rates may have been larger with an anonymous survey and that knowledge on the part of the respondent that their school might be identified could have influenced survey responses. However, a confidential survey provided a higher quality of data with the reduction of omitted variable bias and the ability to check the data distribution. With the information of school names, we were able to know the specific categories into which each school fell and thus be able to identify common characteristics of successful bilingual schools. More importantly, data from confidential survey will be connected to TEA's AEIS information.

Bilingual Education Survey

To create our survey population, the team constrained the general campus population to include only campuses that had at least 30 LEP students. This is the number used by the TEA to determine whether the individual campus will have to report accountability information for the LEP subgroup. The list of emails and addresses was obtained through TEA's online database; our survey sample included 3,562 campuses. Once a sample was created of elementary and middle school campuses with at least 30 LEP students, an email and a letter was sent to the school principals asking them to forward the information to their staff teaching LEP students .

The research team referenced existing surveys from the Texas Successful School Study (2000) and a study of "School Effectiveness for Language Minority Students" conducted by Thomas (2007) along with insight from the bilingual education research to identify and modify applicable questions for bilingual programs across the state. The research team also conducted a pilot survey to seek feedback from a small sample of teachers and administrators before finalizing the survey questions. These teachers and administrators were not be part of the sample population. The survey collected information regarding bilingual education programs based on the following categories:

- Teacher characteristics
- Class characteristics,
- Program characteristics
- Instructional strategies²⁶.

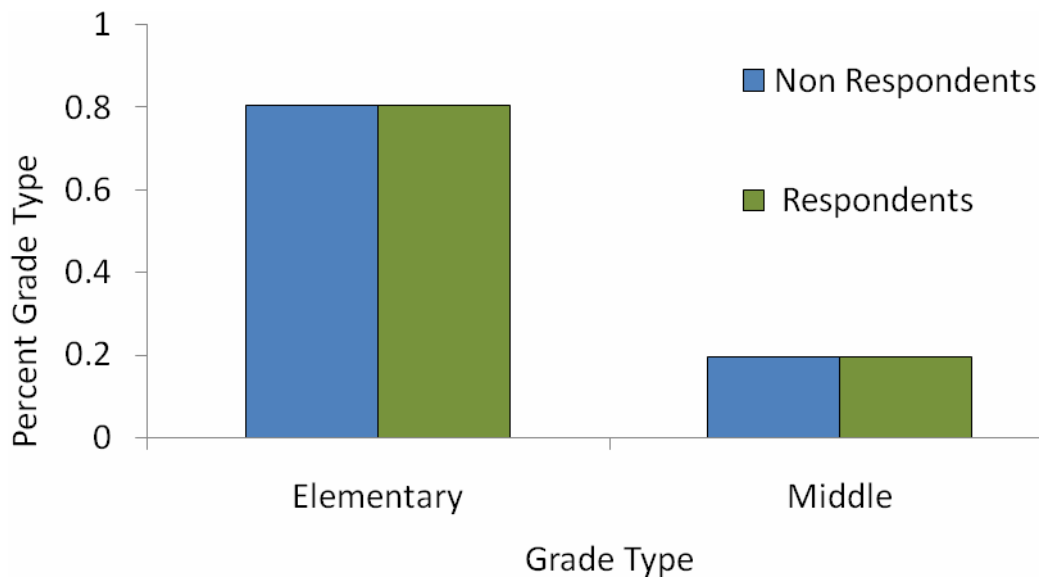
A copy of our survey is located in Appendix D. From our survey population, 624 teachers from 266 campuses in 140 school districts responded. The response frequencies for the survey questions can also be located in Appendix D.

²⁶ The survey questionnaire is included in Appendix B

Validity of Survey Responses

The response population included 624 teachers from 266 campuses in 140 different districts²⁷. A validity check was applied to the data gathered from responses to demonstrate that survey responses are representative of the survey population. We compared schools from which teachers responded to the survey with schools from which teachers did not respond. The responding schools rates were compared with the non-responding schools in the categories of financial characteristics, classroom characteristics, and indicators provided for measuring school success. We found modest differences, but no reason to believe that the respondents teach in schools that are unusual or unrepresentative. For example, the distribution among elementary and middle schools is nearly identical for both the survey respondents and the non-respondents²⁸.

Figure 22 – Comparing Respondents and Non-Respondents for Elementary and Middle School Campuses



Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

²⁷ It is important to note, however, that some large school districts in our sample had research protocols in place that affected their ability to participate in our study.

²⁸ Grade type is not significant at the 5% confidence level.

Student Characteristics

The average school size for survey respondents was slightly larger than the non-respondent schools, but within three percentage points of the survey population. According to Figures 23 and 24, the average LEP student proportion in the respondent population was only three percentage points more than the average LEP student proportion of the non-respondents' campuses²⁹. Additionally, the average number of enrolled LEP students for the respondent campuses was only nineteen more students than on the non-respondent campuses³⁰.

Figure 23 – Comparing Respondents and Non-Respondents for Proportion of LEP Students

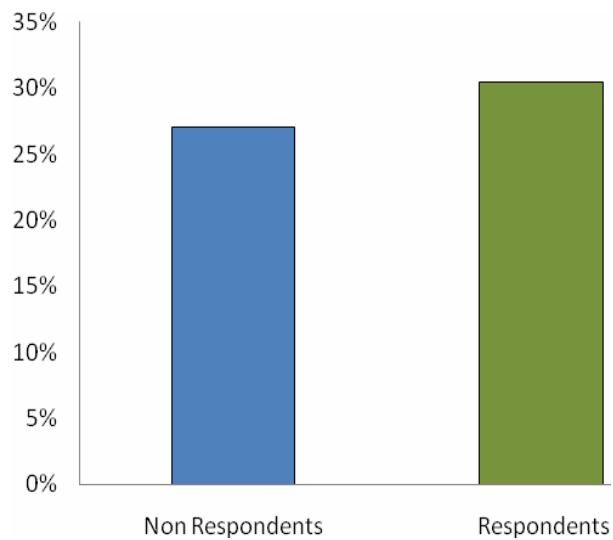
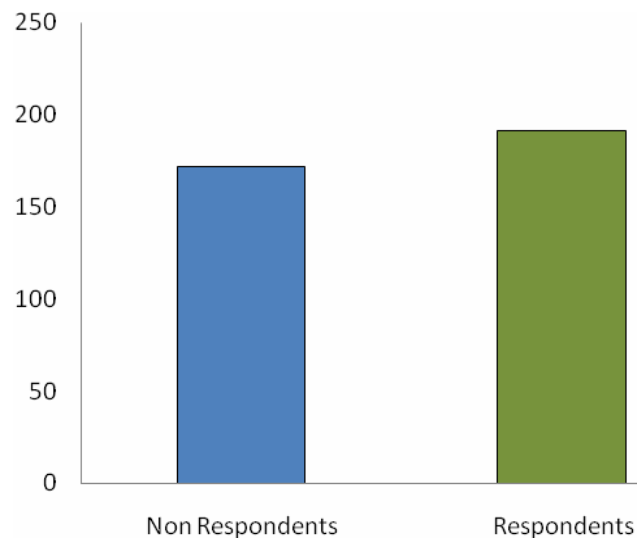


Figure 24 – Comparing Respondents and Non-Respondents for Average Number of LEP Students



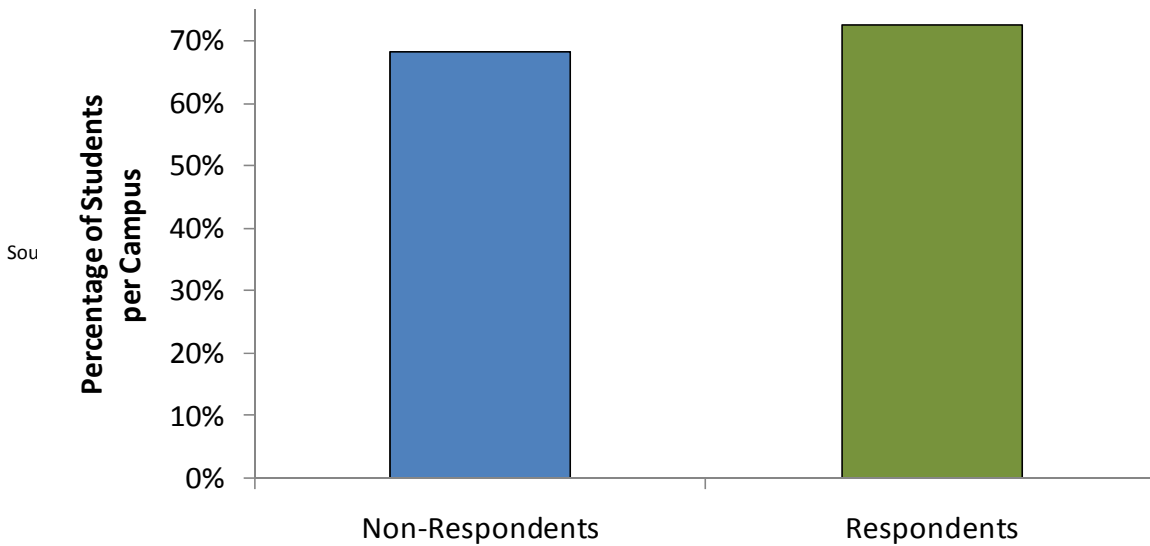
Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

²⁹ Average percent LEP population per campus is significant at the 5% level.

³⁰ The average number of LEP students per campus is significant at the 5% level.

To control for student characteristics, the survey team examined the levels of students who qualify for free or reduced lunch. As Figure 25, the survey respondents have slightly more students (a four percentage point difference) who qualify under this program than the non-respondent population³¹.

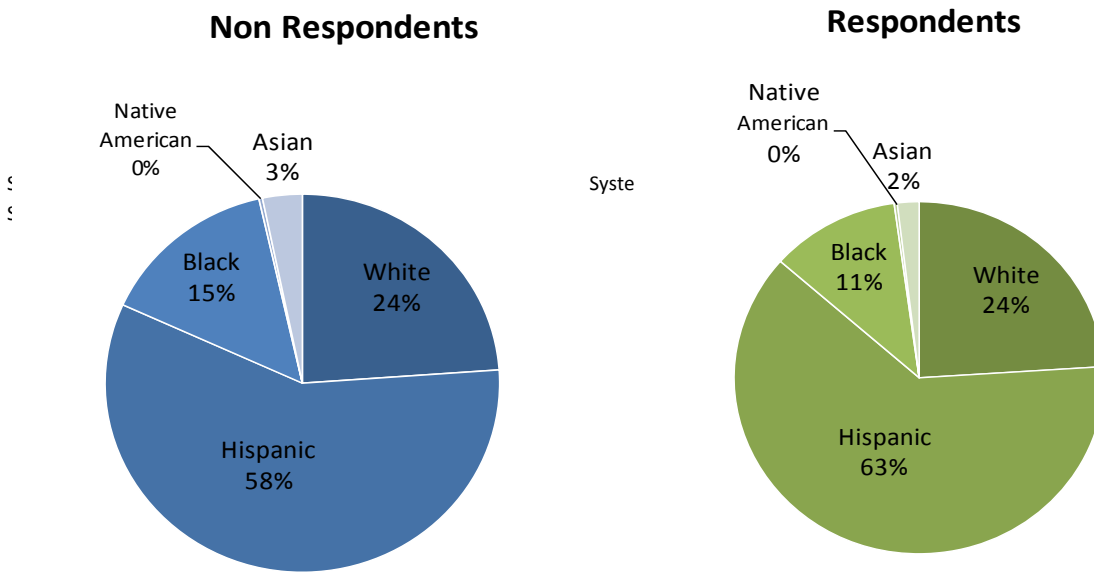
Figure 25 - Comparing Respondents and Non-Respondents for Number of Students Eligible for the Free Meal Program



³¹ The number of students who qualify under Free and Reduced Meal program is significant at the 5% level.

The survey team verified the ethnicity and reported mobility status were comparable for the survey and the respondent populations. The ethnicity distribution was relatively similar for the Anglo population³². Conversely, the Hispanic, African American, and Asian students were slightly higher for the non-respondent group than the respondent group³³.

Figure 26 – Comparing Respondents and Non-Respondents for Student Ethnicity Distribution

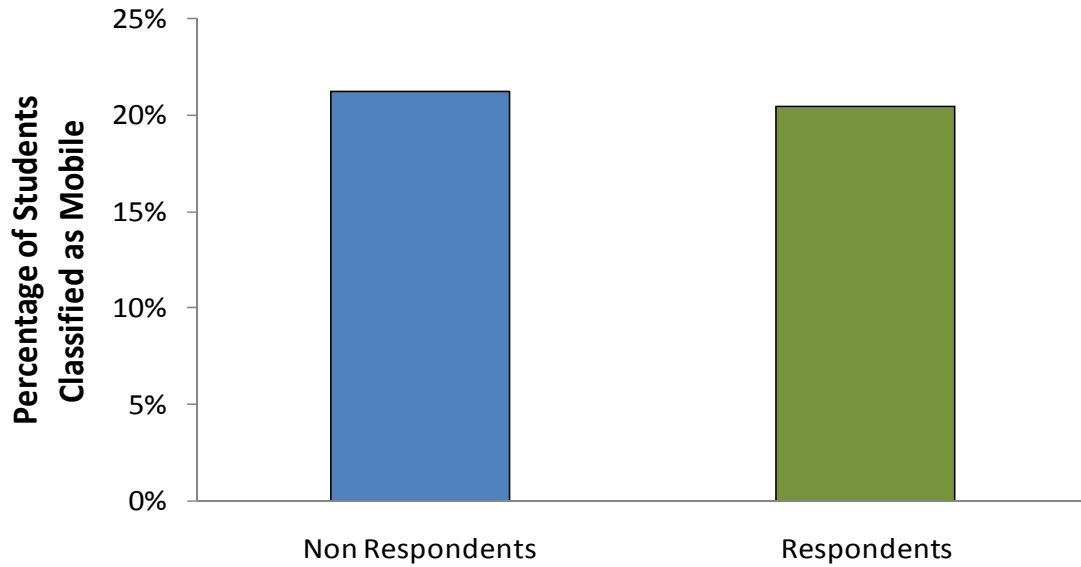


³² The Anglo population was not significant at the 5% level.

³³ These demographics differences are statistically significant at the 5% level.

The mobility status is nearly identical for both the survey population and the survey respondents³⁴. TEA defines mobility as a student who has been absent for a cumulative period of six weeks or more, which is eighty three percent of the year (AEIS, 2007).

Figure 27 – Comparing Respondents and Non-Respondents for Student Mobility

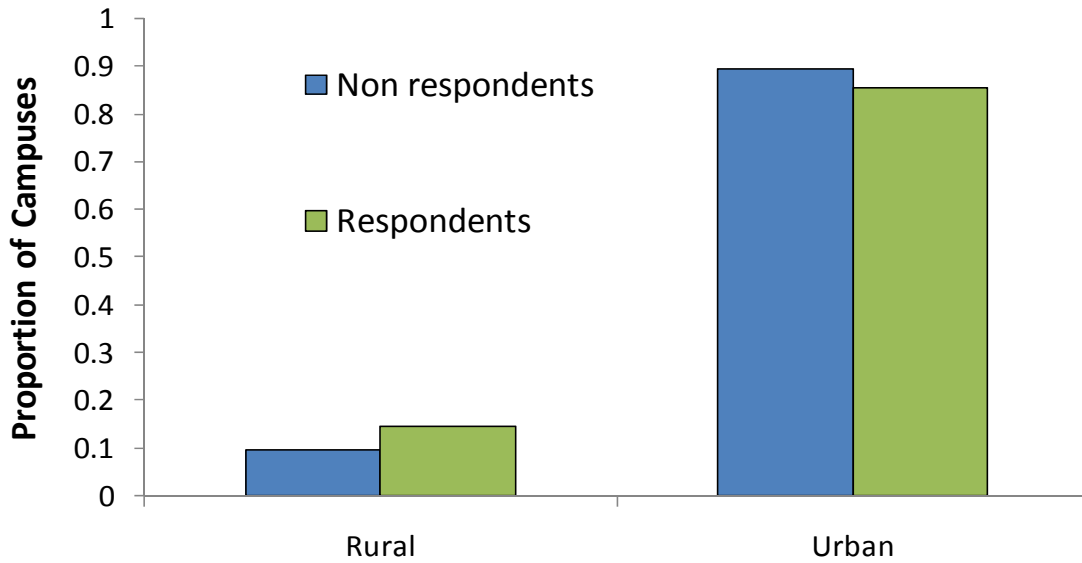


Source: Texas Education Agency: Academic Excellence Indicator System, Bilingual Education in Texas: Exploring Best Practices Survey, 2008

³⁴ The mobility population is not significant at the 5% level.

The survey team analyzed the differences between rural and urban schools in the respondent and the non-respondent populations. The respondent population had a higher percentage of rural campuses than the non-respondent populations. Equivalently, the respondents had a lower percentage of urban campuses than the non-respondents³⁵.

Figure 28 – Comparing Respondents and Non-Respondents for Urban and Rural Campuses



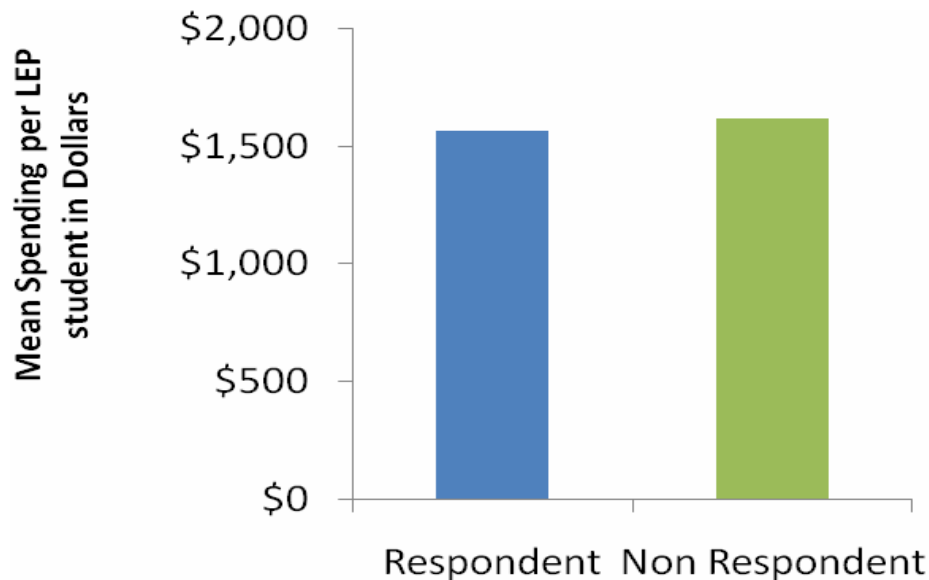
Source: Texas Education Agency: Academic Excellence Indicator System, Bilingual Education in Texas: Exploring Best Practices Survey, 2008

³⁵ The difference between rural and urban campuses is significant at the 5% level.

Financial Characteristics

As shown in Figure 29, on average, bilingual/ESL program spending per LEP student was slightly lower for survey respondents when compared to survey non-respondents. The difference amounts to roughly \$55 per LEP student, and is not statistically significant.

Figure 29 – Comparing Survey Respondents and Survey Non-Respondents for Average Expenditure towards Bilingual



Source: Texas Education Agency: Academic Excellence Indicator System, Bilingual Education in Texas: Exploring Best Practices Survey, 2008

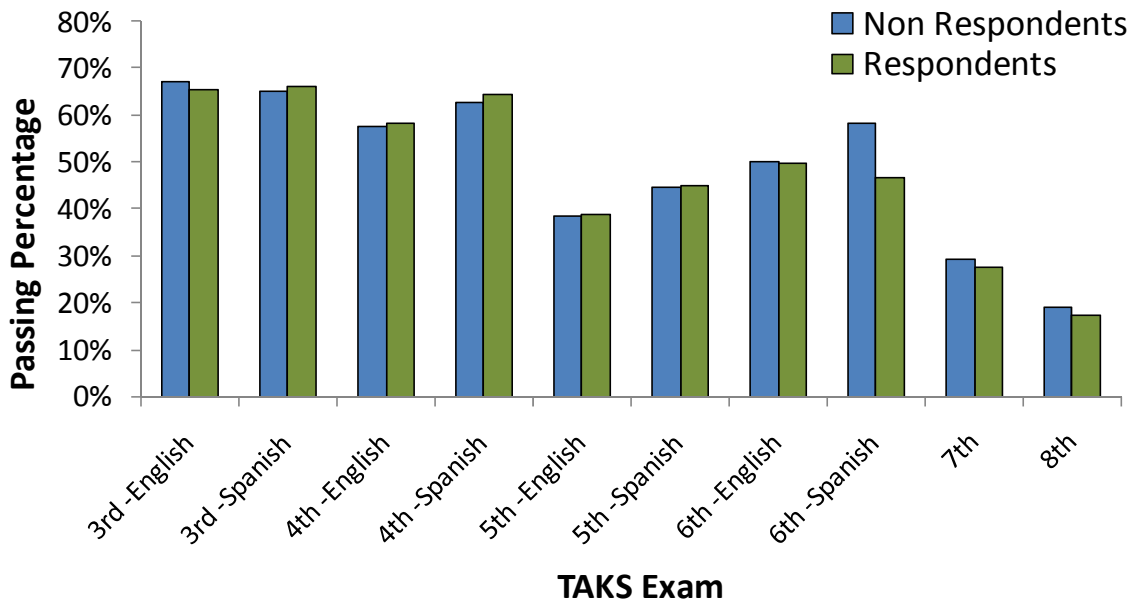
Outcome Measures

It was important for the team to verify whether the campus level data matched the survey population in relation to the indicator categories used to measure success. The tests scores for the respondents needed to be representative of the survey population to prevent biases in the data analysis. To check for validity the team looked at the TAKS passing rates, TAKS scores, ELL Progress measure and the Value Added for respondent and non-respondent populations. All four indicators appear to be comparable for the two populations.

For the TAKS passing rate indicator the survey respondents come from schools that are no significance different from non-respondent schools. Non-respondent campuses had slightly

higher test scores for the 3rd grade English test, 6th grade Spanish test, and for the 7th and 8th grade tests than the survey respondents. Contrary, the survey respondents had higher or equal TAKS passing rates for the remaining tests³⁶. However, across all grade levels, the differences were not jointly significant.

Figure 30 – Comparing Survey Population and Survey Respondents for TAKS Passing Rate



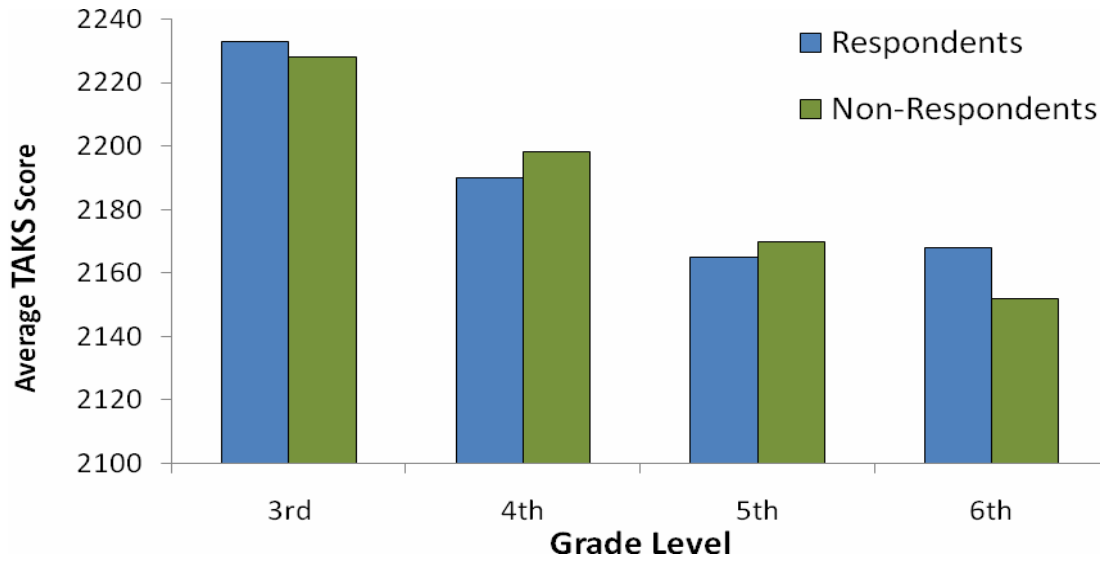
Source: Texas Education Agency: Academic Excellence Indicator System

The TAKS scores had slight variation between the survey respondents and non-respondents, but the average scores were less than a percentage point difference. Both populations have an average score decrease from third grade until fifth. In the sixth grade, the average TAKS score continues to fall, while non-respondent campuses have an average score increase³⁷.

³⁶ The difference in the TAKS passing rate is not significant at the 5% level

³⁷ The difference in the TAKS scores is not significant at the 5% level

Figure 31 – Comparing Survey Population and Survey Respondents for TAKS Scores

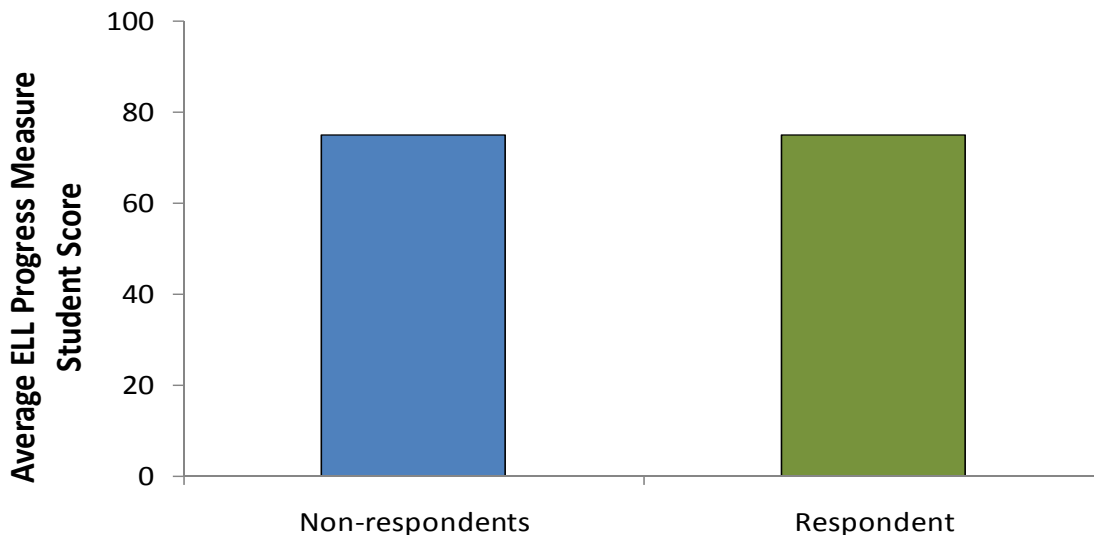


Source: Texas Education Agency: Academic Excellence Indicator System

According to Figure 31 the ELL progress measure for the survey respondents was parallel to the survey population with a difference of less than a percentage point. This implies, on average, the LEP students in the survey population and in the response population appear to measure at the same level in the rate of fluency progression. Both populations have an average indicator of nearly seventy percent. The performance on the ELL progress measure by survey respondents was not significantly different from ELL performance by survey non-respondents³⁸.

³⁸ The difference in ELL performance is not significant at the 5% level

Figure 32 – Comparing Survey Population and Survey Respondents for English Language Learners Progress Measure



Source: Texas Education Agency: Academic Excellence Indicator System, Bilingual Education in Texas: Exploring Best Practices Survey, 2008

Most differences between survey respondents and survey non-respondents are not statistically significant. However, differences between the percentage of economically disadvantaged students, percentage of rural campuses, percentage of Hispanic students, and the percentage of LEP students are statistically significant.

Analysis Strategy

Our strategy for analyzing the survey data groups teacher responses by district and four control variables: economic status, grade type, the number of LEP students in each campus, and respondent characteristics. We used appropriate statistical techniques to ensure that multiple responses from a single campus did not bias our findings

Cluster Analysis

The survey was sent to campuses having more than 30 LEP students. However, given district level policies regarding bilingual and ESL programs most campuses might be mandated to implement certain instructional strategies. Since most campuses have less discretion, teacher responses from the same school district might have more in common with one another than

with teacher responses from different school districts. Our analysis takes this clustering into account.³⁹

Controls

To have an unbiased estimator it is necessary to exclude those factors that might systematically contribute to differences in outcome measures.

Economic status

To have an unbiased analysis, it is necessary to control for economic status of the students. Controlling for economic status helps us strengthen our analysis by minimizing omitted variable bias. Depending on a student's economic status, there might be external factors outside the scope of the classroom that directly affect a student's performance. By controlling for economic status, it is less likely that we discount the effective practices of some schools whose performance is negatively affected by economic characteristics.

Grade type

To control for systematic between elementary and middle schools that affect scores and passing rates we control for the type of campus. In our analysis this variable is called "Elementary." Without this control, the results would illustrate that only elementary schools performed well when compared with campuses that were a mixture of both elementary and middle school grades.

Teacher Characteristics

To control for variations in teacher characteristics, our analysis also controls for teacher certification and for teachers with advanced degrees. This control is necessary because program implementation can be dependent on individual teacher experience and characteristics.

LEP Count

The last control variable in our analysis is the count of LEP students⁴⁰ (in logs) in each campus. This control is necessary because the number of LEP students might have various implications of size and available resources. Schools with a larger number of LEP students might be able to exploit economies of scale. Additionally, these differences might contribute to the variation in student performance.

³⁹ To allow for correlation among residuals we rely on the huber white standard errors, clustered by district.

⁴⁰ We also explored LEP percent as a control variable, but LEP percent was more highly correlated with the ESL and Bilingual program type in the schools, compared to LEP count.

Findings

Our analysis of best practices focused on four issues: programmatic costs, bilingual versus ESL programmatic performance, English language instruction in the classroom, and specific instructional strategies. We focused on these four issues because they can be, to some degree, set by policy. There are therefore highly relevant to the debate over bilingual education in Texas. Furthermore, we focused on bilingual and ESL programmatic differences because of their saliency in the literature and among policymakers. We focused on the percentage of instructional time in English and on specific instructional strategies, because the survey responses indicated considerable variation in the implementation of bilingual and ESL programs.

Bilingual Spending per Pupil and Student Performance Indicators

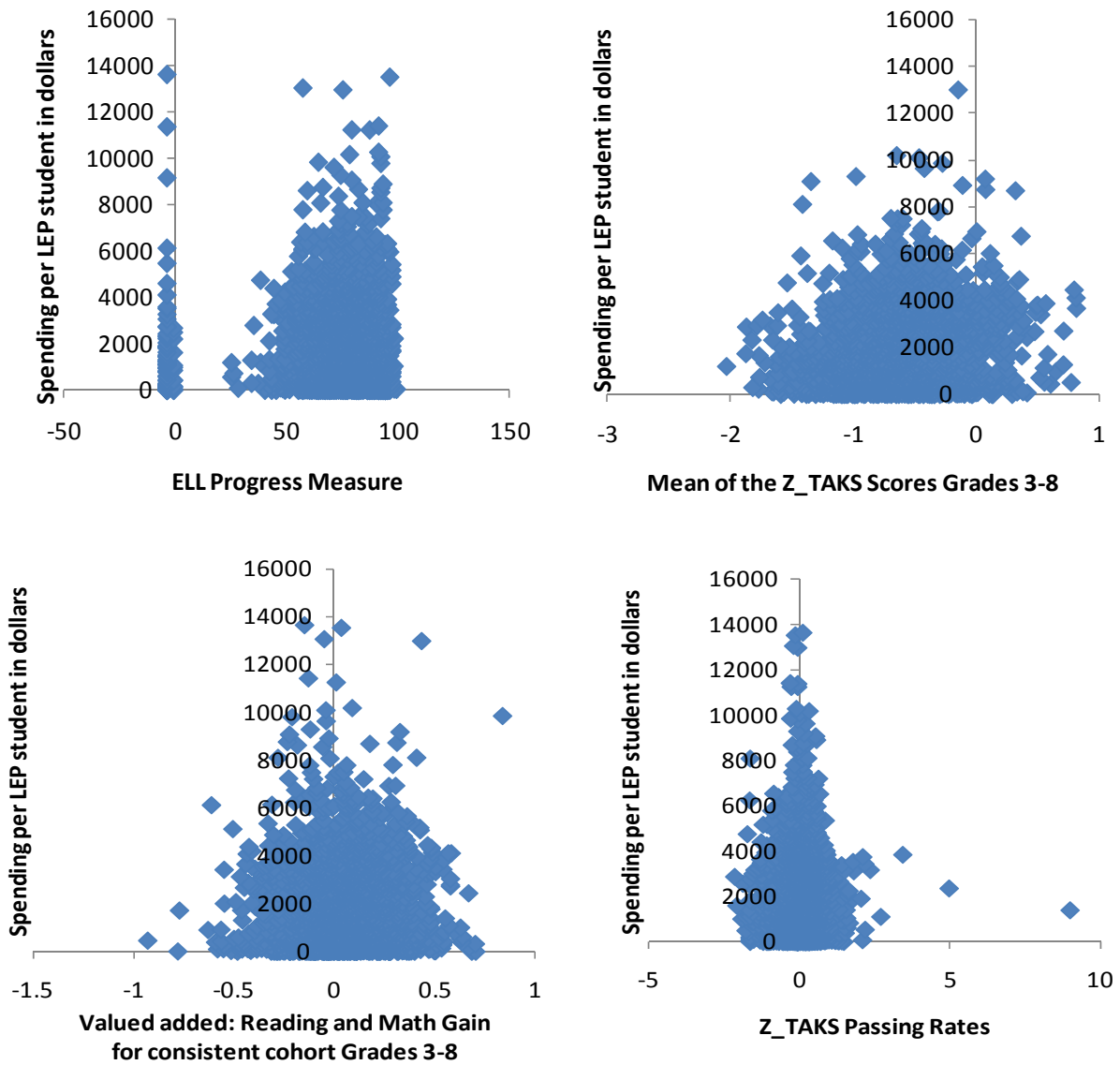
Bilingual spending is a potential predictor of student performance. If this relationship is true, we would expect to see that performance would systematically increase with real spending on LEP students.⁴¹ However, there is no significant relationship between real per pupil spending and the four performance indicators used to identify successful schools. As figure 40 demonstrates, real per pupil expenditures are no different for high performing schools than they are for low performing schools. Thus, for example, an increase in LEP student expenditure will not necessarily to lead to an increase in the ELL progress measure.

The correlation is low between per LEP pupil spending and all of the indicators. The highest correlation is .1728 for the TAKS scores indicator. This indicates that variations in real per pupil expenditures explain only 3 percent of the variation across campuses in the TAKS score indicator.⁴² The other three performance indicators are even less well correlated than the TAKS score. The ELL progress measure has a correlation of .0036. The TAKS passing indicator has a correlation of .0720 and the value added indicator has a correlation of .0194.

Figure 33 –Scatter plot of Spending per LEP student against Performance Indicators

⁴¹ Real per pupil bilingual spending was calculated as total Bilingual/ESL program spending divided by the total number of LEP students in the school. Per pupil spending was further adjusted for regional variations in labor costs using the National Center for Education Statistics' comparable wage index.

⁴² The explained variation (r-square) is the square of the correlation coefficient



Bilingual and ESL Programmatic Performance

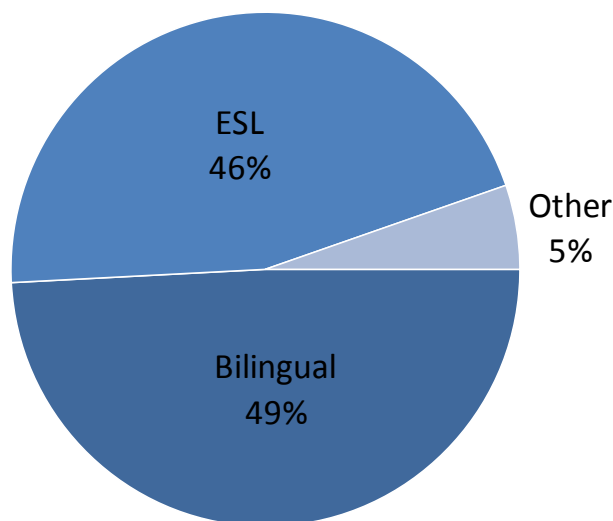
Our review of the literature points to significant differences between bilingual and ESL programs. Furthermore, the Texas Education Code makes a distinction among the two programs. Current Texas educational policy stipulates that schools with greater than 20 LEP students in a single elementary grade are required to offer bilingual instruction, indicating an assumption that bilingual education is more effective than ESL in elementary grades. State

financial support for LEP students, however, does not distinguish between ESL and bilingual programs. Given these characteristics, it is important to examine the differences in student performance between these two programs. Our analysis found that programmatic distinctions between Bilingual and ESL programs are not informative.

Bilingual and ESL Usage Rates

Our analysis of bilingual programs shows that survey respondents were evenly split among ESL and bilingual programs. 46 percent of respondents teach an ESL program and 49 percent of respondents teach a Bilingual program. Furthermore, our evidence showed that some schools teach a combination of the two programs depending on the grade level.

Figure 34 –Percentage of LEP Students by Program Type as Reported by Respondents



Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

Bilingual and ESL programs can be more finely classified by their programmatic characteristics. Table 8, below, shows the number and percentage of survey respondents by programmatic characteristics. As the table illustrates, 73% of the teachers responding that they taught in a bilingual program, described their program as early exit. Of the 262 teachers who responded they taught in an ESL program, 65% indicated they taught in a content based program. Respondents who describe themselves as participating in pull-out ESL programs may be either mainstreamed teachers who have ESL students in their classroom or teachers who pull students out of the mainstream classrooms for ESL instruction.

Table 8 -Bilingual and ESL Programmatic Characteristics

Bilingual		
Transitional bilingual/ Early exit	199	73%
Transitional bilingual/ Late exit	28	10%
Dual Language immersion/ Twoway	14	5%
Dual Language immersion/ Oneway	14	5%
Dual Language	6	2%
Other	10	4%
ESL		
English as a second language/content-based	169	65%
English as a second language/pull-out	68	26%
Other	25	9%

Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

There is evidence, however, that some teachers were confused by the description of their programs. In the “other” text box of the questions, some teachers wrote in programs that were available as options. This indicates that the program descriptions on the survey may have not been clear. Since those program descriptions were taken directly from the legislation, this confusion signals that districts may have difficulty complying with the reporting requirements of Senate Bill 1871. (See Appendix B.)

Bilingual and ESL Performance

Our strategy for evaluating the relationship between the student performance and programmatic characteristics is regression analysis. For each of the indicators, we regressed student performance on programmatic characteristics and a set of variables designed to control for the influence of student characteristics.

For each of the performance indicators we ran three sets of regressions. (See Appendix E.) The first set is for all teachers who responded to our survey. The second includes only kindergarten through second grade teachers (K-2) and the third includes third through eighth grade teachers (3-8). This was done because the performance indicators only include students in grades three through eight. Because we don’t have performance information for K-2 LEP students, we must assume either that current instructional practices in grades K-2 are representative of practices when current third graders were in kindergarten or that the performance of current third through eighth graders is representative of the performance of LEP students currently in grades

Kindergarten through two. We divided the sample between K-2 and 3-8 teachers to test the validity of these assumptions.

Our analysis of the relationship between bilingual and ESL instructional programs and campus performance indicators shows that programmatic distinctions between ESL and bilingual programs are not informative. Specifically, a test of the differences in performance between ESL and bilingual programs is only statistically significant for the TAKS scores indicator for teachers in grades 3-8. Because neither program is statistically different from one another for any of the other performance measures for K-2, 3-8, and all teachers, we cannot conclusively say which program is more closely related to student performance.

Texas schools are required to provide a bilingual program for certain grades if the LEP student population reaches twenty students for that grade level. Therefore, some schools offer both bilingual and ESL programs. This complicates our analysis because our indicators of performance are campus level, and not grade level. Where ever schools use both programs, it is not possible to tell the difference using campus level data. Furthermore, In the elementary grades, bilingual educational programs are more closely associated with larger classes. Thus, any analysis of bilingual programs at the elementary level may result in class size effects masking the effects of programmatic differences.

English Language Instruction

Bilingual research regarding bilingual students indicates that teaching in the native language is effective in English language acquisition, therefore, we asked survey respondents to report how much of their instructional time is in English in a typical week. Specifically, we asked teachers to rank the amount of instruction time in English from “Exclusively English” to 0-10 percent English instruction. Over one third of respondents indicated that they teach exclusively in English and the majority of survey respondents indicated that they teach primarily in English. Table 9 shows a breakdown of survey respondents by the percentage of instructional time spent in English in a typical week. Half of all respondents mentioned that they spend 91-100 percent of instructional time in English.

Table 9 -Percentage of Instructional Time in English

Percentage of Instructional time in English	Percentage of Respondents
Exclusively in English	35.76%
91-99%	13.59%
81-90%	8.41%
71-80%	5.18%
61-70%	3.07%
51-60%	7.44%
41-50%	7.12%
31-40%	5.99%
21-30%	5.83%
11-20%	2.59%
0-10%	5.02%

Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

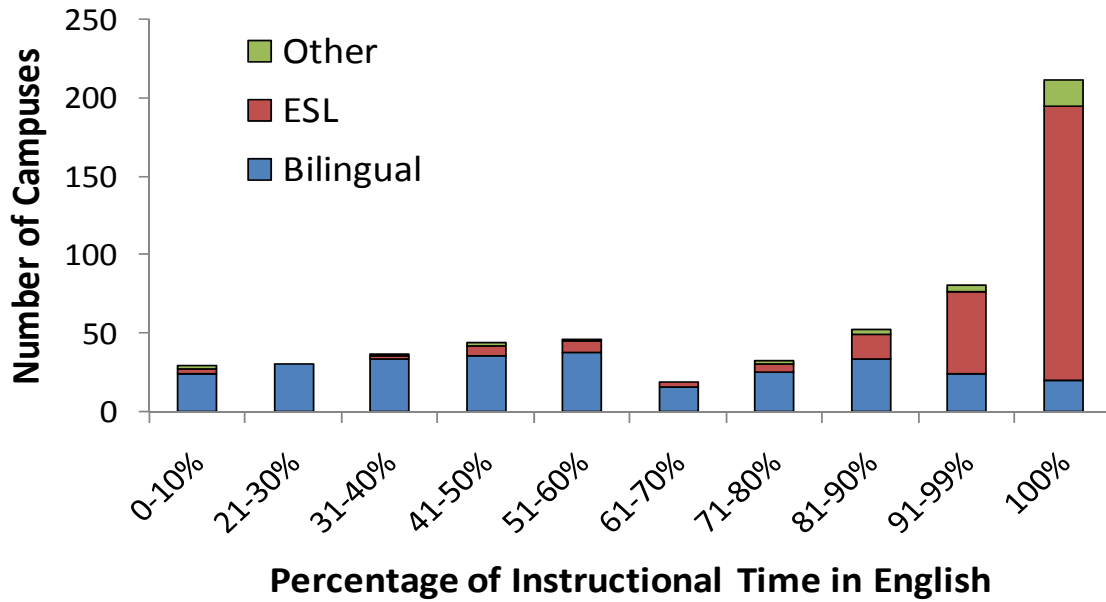
Respondents who indicated that they teach ESL programs were more likely to spend 91-100 percent of instructional time in English than respondents who teach bilingual programs. Figure 34 shows a breakdown of instructional time spent in English by program type. Bilingual programs are more diverse in the amount of instructional time spent in English than ESL programs. ESL teachers spent substantially more instruction time in English than bilingual teachers. This difference between bilingual and ESL programs is statistically significant.⁴³

Students Use of Native Language

Some programs serving LEP students do not allow the students to use their native language as needed. Eighty six percent of survey respondents indicate that they allow students to use their native language as needed. Figure 36 shows the number of respondents broken down by their student’s language use policy and percentage of instructional time spent in English. Teachers who taught exclusively in English were more likely to prohibit the students’ use of native language. However, three quarters of those teachers did allow students to communicate with their native language.

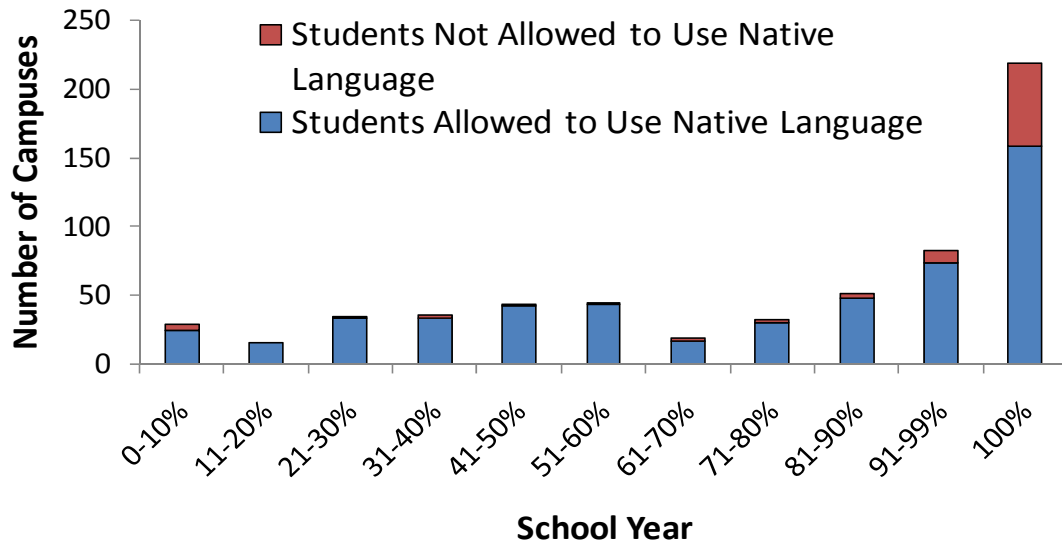
⁴³ Pearson chi2(10) = 276.3801 Pr = 0.000

Figure 35 -Percentage of Instructional Time Spent in English by Program



Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

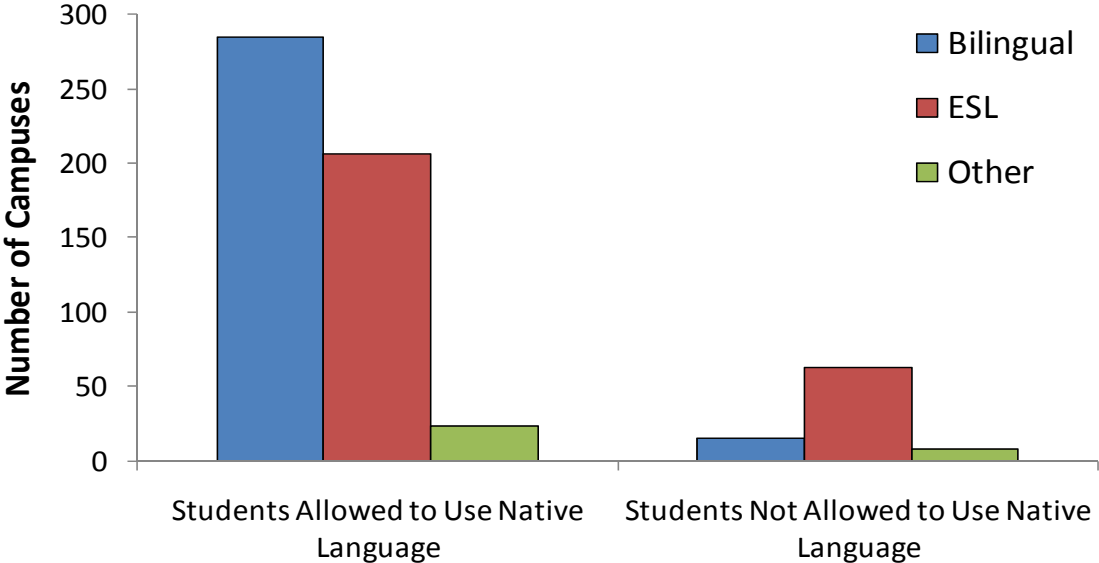
Figure 36 -Student Language Policy by Percentage of Instructional Time Spent in English



Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

As figure 37 indicates, survey respondents who taught ESL programs were less likely to allow students to use their native language than respondents who taught bilingual programs. Surprisingly, 15 teachers who described their program as bilingual did not allow students to use their native language. Additionally, 63 teachers who described their program as ESL also did not allow their students to use their native language.

Figure 37 -Student Language Policy by Program Type



Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

English Intensity’s Impact on Student Performance Measures

One approach to measuring the impact of English instructional time on performance indicators is to compare their performance with the average performance of all campuses in the survey population.

Table 10 shows a chi square test from a cross tabulation of the English language instruction time categories and the performance quartiles. The test shows that the relationship is statistically significant for the TAKS passing rate, TAKS scores, and the ELL progress measure. The value added indicator, however, is not statistically significant.

Table 10 -Chi Test for English Language Instruction and Performance Quartiles

The Probability of a Greater Chi-squared Statistic			
TAKS Passing Rate	TAKS Score	ELL Progress Measure	Value Added
0.07	0	0.004	0.397

The cross tabulations indicated that campuses with teachers who reported instructing primarily in the student’s native language were more likely to be in the bottom quartile in terms of the ELL progress measure and the TAKS passing, but no more likely to be in the bottom quartile for the TAKS scores. Additionally, schools with teachers who responded that they teach from 31 to 50 percent of the time in English were more likely to be in the top quartile for the TAKS passing and TAKS scores indicators. Teaching from 31 to 50 percent of the time in English was more common in the bottom quartile for the ELL progress measure. Finally, schools with teachers who reported teaching exclusively in English were more likely to be in the bottom quartile for the TAKS score, but were more common in the top quartile for the ELL progress measure.

While this approach is informative, it does not control for exogenous variables, such as percentage of students who are economically disadvantaged. The remainder of our analysis, therefore, uses regression analysis to control for these possible exogenous variables. (See Appendix F). As with the bilingual and ESL analysis, we broke the survey sample down into three groups. These teacher groups were for grades K-2, 3-8, and for all teachers.

For all of the teacher groups we found that the amount of instructional time in English is a significant factor in explaining the TAKS passing, TAKS scores, and value added indicators. We interpret these three measures as indicators of content learning.

For all three teacher groups, the evidence suggests that consistent instruction in one language is most effective for content learning. Instructional levels that are greater than 90 percent English or greater than 90 percent in the students’ native language are equally effective for all three content learning indicators. Mixed instructional time is systematically less effective than exclusive instructional time in a single language for TAKS passing, TAKS scores, and value added analysis.

Additionally, the amount of instructional time in English is also significant for the ELL progress measure for grades 3-8 teachers. Within that group, there is no difference in the ELL progress measure between teachers who reported spending greater than 90 percent of instructional time in English and those who reported spending greater than 90 percent of instructional time in the student’s native language.

One possible explanation for these results is that campuses that implement exclusive instruction in English or the student’s native language as their strategy do so consistently across all of their grades, while schools that implement a mixture of English and the student’s native language vary their English instructional ratio across grades. If true, this would introduce more error into our model for campuses that implement a mixture strategy as opposed to campuses that teach exclusively in English. Our model, therefore, would tend to overemphasize the benefits of exclusive instruction in English or in the student’s native language.

Further research should be conducted on how the amount of instructional time in English varies across a student’s tenure at a specific campus. Additionally, future research should focus on why the amount of instructional time in English varies across schools. Setting the amount of instructional time in English appears to be a school or school district decision. It would, therefore, be useful to know why schools or school districts would choose one approach over another.

Instructional Strategies

To measure the impact that instructional strategies have on performance, this analysis identified 11 common instructional strategies on student performance. Additionally, this analysis also analyzed the difference in mean student performance between campuses with teachers that reported using these instructional strategies “frequently” or “always,” and those that did not.

To assess the usage of these instructional strategies, the survey asked teachers to rate the frequency with which they use each instructional strategy. This measure, therefore, is an intensity measure. It does not attempt to assess any variance in the quality with which teachers implement the instructional strategy.

Figure 38 shows the frequency with which respondents used various instructional methods. The blue bar shows the number of respondents who rated using a particular instructional method always or frequently. The red bar is the number of respondents who rated using a particular instructional method sometimes, rarely, or never. We assumed that all missing responses indicate that the respondent never uses that particular instructional method.

Figure 38 -Teachers Use of Various Instructional Methods

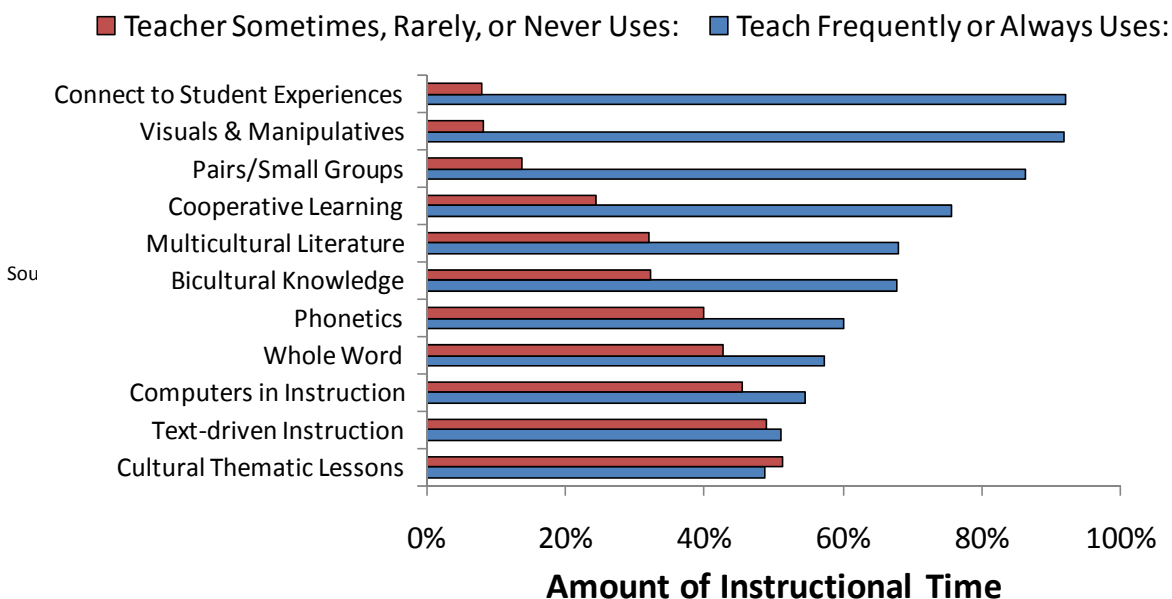


Table 11 shows the differences in the means for respondents who rated their usage of an instructional strategy as “always” or “frequently,” and respondents who rated their usage as “sometimes,” “rarely,” or “never.”⁴⁴ Positive numbers indicate that respondents who frequently used that instructional strategy taught in campuses that had higher performance than schools with teachers who infrequently use an instructional strategy. Negative numbers indicate that teachers who use the instructional strategy were associated with campuses that had lower performance. As the table indicates, almost all of the instructional strategies are positively associated with TAKS scores. Most, however, are not associated with value added or passing rates.

These differences, however, do not control for exogenous variables, such as percentage of students economically disadvantaged in a campus. If these exogenous variables influence the decision by a teacher, school, or school district to use a certain instructional strategy, than looking at the difference of the means is misleading. Strategies that are positively associated with performance, for example, may have only been adopted by schools that spend more per pupil on bilingual and ESL education. Our analysis, therefore, uses regression analysis to control for these possible exogenous variables.

⁴⁴ Respondents who did not answer the question were interpreted as never implementing the instructional strategy

Table 11 –Differences in the Means between Groups Which Frequently or Infrequently Use Various Instructional Strategies⁴⁵

Instructional Strategy	TAKS Passing Rates	TAKS Test Scores	English Language Learners Progress Measure	Value Added Measure
Pairs and Small Groups	-.071	.096*	.010	-.008
Cooperative Learning	.002	.101**	-2.771**	-.026
Computers	.064	.123***	-1.619	-.004
Whole Word	.056	.135***	1.303	.028*
Phonetics	.048	.163***	-.278	.012
Multicultural Learning	.091**	.199***	2.690**	.021
Connect to Student Experience	.121*	.195***	1.587	.001
Cultural Thematic Lessons	.039	.072*	1.224	.010
Visuals and Manipulatives	-.044	.08	-1.269	-.032
Bicultural Knowledge	.066	.121***	-.200	.013
Text-Based Instruction	.017	.045	-2.102*	.006

Source: Bilingual Education in Texas: Exploring Best Practices Survey, 2008

As before, we analyzed behavior across three teacher groups. These teacher groups were for grades K-2, 3-8, and for all teachers. This is the same grouping used for the bilingual and ESL analysis.

Our analysis found that only one instructional strategy is systematically significant. (See Appendix G). Frequent use of visuals and manipulatives are systematically associated with lower performance for all performance indicators for the all teachers group. For the 3-8 teachers, visuals and manipulatives were associated with lower performance for TAKS passing, TAKS scores, and the value added indicators, but not for the ELL progress measure. While there are other instructional strategies that are statistically significant for certain performance indicators, there are not any other instructional strategies that are systematically significant across all indicators.

Some particularly effective strategies, according to the literature, are cooperative learning and culturally responsive instruction. Most survey respondents report using at least one of these strategies frequently. Our analysis however, indicates that their relationship to student performance is weak. Cooperative learning, for example, is negative for the ELL progress measure for the all teacher group and insignificant at the five percent level for all other outcomes and teacher groups. Three quarters of survey respondents use cooperative learning

⁴⁵ *Significant at the 10 percent level; **significant at the 5 percent level

strategies frequently or always. These results, therefore, may reflect a lack of variation among survey respondents.

Suggestions for Further Research

Given the timeframe of our analysis and the complexity of Bilingual education in a state the size of Texas, our study highlights only a few of the many areas of future research that would enhance the overall knowledge of effective Bilingual programs.

The majority of studies that have used case studies to evaluate Bilingual programs have focused on instructional methods which improve student performance, using a case study method would also provide valuable information regarding why some Bilingual programs are not working. Along with research concerning methods used in successful programs, information in relation to which methods to avoid using would also be helpful for school administrators.

Based on data from our survey, most teachers are using all of the common instruction methods to teach the LEP students in their classrooms. However, since our survey sample included only elementary and middle school campuses, we do not have any indication of what methods teachers at the higher grade levels are using for Bilingual and ESL students. Future research is necessary to identify what instructional methods are used in the high school level grades; perhaps teachers are using more content based instruction along with a greater emphasis on the TAKS test.

Since school districts have the option in post-elementary grades through 8th grade to implement either a Bilingual or ESL program⁴⁶ it would be interesting to explore why Texas school districts opted for one program over the other. While some reasons for switching programs might include the fluctuation of LEP students and teacher turnover, future research could provide insight about the longevity of these programs in schools and their school districts. Additionally, this information could be helpful for school districts trying to identify which programs have historically been more successful.

We have a better understanding of what instructional strategies are used in the earlier grade levels. However, future research of bilingual education in Texas should be broken down even further to understand not only what elementary, middle, and high schools across the state are doing, but more specifically what teaching strategies are being implemented on each grade level to teach LEP students. Due to the large number of the student population, the K-2nd LEP

⁴⁶ Sec. 29.053, Subchapter B. Bilingual Education and Special Language Programs

students should be incorporated into the accountability system using an instructionally appropriate measurement tool.

Finally, more research is necessary to understand the extent and influence of parental and community communication in regards to the education of LEP students. While parental involvement is noted as having positive effects on bilingual student performance in some of the bilingual education studies, there is little guidance about what types of activities should be promoted or how communities with LEP students can affect their performance in school.

Conclusion and Policy Implications

Demographic trends over the last decade have shown that there has been a significant growth in the LEP student population in non-border school districts and the concern regarding bilingual education is now largely considered a statewide issue. These changes will continue to challenge both district level administrators and state policy makers; making it very important to have an understanding of what programs are being implemented throughout the state.

With new legislation requiring school districts which offer bilingual education and special language programs to report to TEA the number of LEP students in each program, policy makers will soon have more information about bilingual education in Texas. As the LEP student population grows across Texas, spending levels for bilingual education will certainly be expected to rise.

The study used four indicators that were developed by considering performance information that is already collected by the TEA. The indicators include TAKS passing rates that show how the schools perform with regard to its students passing the TAKS test, the TAKS scores to show how students scored in the test and ELL progress measure which shows gains made on language acquisition. In addition, the value added measure considers the gains made by students' content mastery as indicated by the gains made by a cohort of students in math and reading tests. Thus these indicators allowed us to measure both content mastery and language acquisition of LEP students.

After analysis of the survey data, a few clear conclusions can be made about current teaching strategies and program application with regards to bilingual education in Texas. First, bilingual teachers use native language in their instruction more frequently than ESL teachers. Second, there are no systematic cost differences between bilingual and ESL programs in Texas. Third, there is no evidence that bilingual instruction is systematically more effective than ESL. Thus

there is little or no support for systematic changes in Bilingual and ESL programs in the state of Texas.

The evidence does suggest that consistent instruction in one language is most effective for content learning. However, no difference between English and the students' native language was found. Schools where teachers rely on intensive English instruction do not show greater progress on the ELL progress measure. While there are performance differences between levels of instructional time in English, the policy implications of these instructional differences are unclear.

While teachers indicated their use of common instructional strategies, most of these strategies did not have a significant influence on student performance. This may reflect the pervasive nature of these strategies rather than their impact on students. Furthermore, it remains unclear what some of these teaching strategies specifically entail. For example, "culturally thematic lessons" could entail a variety of classroom practices; the content of these lessons remains unclear. Some standardization of instructional terms could be particularly useful for future research.

Part of our analysis was focused on understanding how instructional methods identified by existing bilingual education research were being used in bilingual programs in Texas. Contrary most of these studies including previous research on bilingual best practices, our analysis found that both high performing as well as low performing bilingual programs were using instructional methods which have been identified as characteristic of effective bilingual programs. This suggests that the difference between effective and non effective programs is beyond the use of specific methods to teach LEP students.

Our analysis shows that most of the instructional strategies, identified by the literature as best practices, were not systematically related to student performance. The exception is visuals and manipulatives, which is negatively related to English language acquisition when used by teachers in grades three through eight.

Moreover the instructional methods identified by bilingual education research as being most effective were nearly as common in low performing schools as they were in low performing schools. This suggests that while the use of native language, a cooperative learning model, culturally responsive instruction, and extensive oral interaction are necessary methods for teaching LEP students they do not explain the difference between effective and non-effective bilingual and ESL programs in Texas.

The variance and volume of answers by survey respondents about what program was being implemented on their campus seems to indicate some confusion regarding Bilingual and ESL program definitions. While our survey used the state's definition for these programs, most

teachers appeared to be confused about how their programs matched the state's definitions. Given that forthcoming legislation will require school districts to report how many students are enrolled in specific Bilingual and ESL programs, the state will probably also encounter this confusion. Data collected during the first year of this mandate should be closely reviewed given that teachers and school districts might have trouble categorizing how many of their LEP students are served through the different programs.

Works Cited

Brisk, M. E. (1999). *Quality Bilingual Education: Defining Success*. Bar Ilan University, Israel : Symposium on Language Policy.

Calderon, M., Hertz-Lazarowitz, R., & Slavin, R. (1998). Effects of Bilingual Cooperative Integrated Reading and Composition on Students Making the Transition from Spanish to English Reading. *The Elementary School Journal* , 99 (2), 153-165.

Cohen, E. G. (1990). Teacher as Supervisor of Complex Technology. *Theory into Practice* , 78-84.

Cummins, J. (1999). Alternative Paradigms in Bilingual Education Research: Does Theory Have a Place? *Educational Researcher* , 26-42 + 41.

Cziko, G. A., (1992). The Evaluation of Bilingual Education: From Necessity and Probability to Possibility. *Educational Researcher*, 21, (2), 10-15.

Digest of Education Statistics: 2005; Appropriations for Title I, No Child Left Behind Act of 2001, by type of appropriation and state or jurisdiction: Fiscal years 2004 and 2005 . (2005). Retrieved January 21, 2007, from National Center for Education Statistics: http://nces.ed.gov/programs/digest/d05/tables/dt05_362.asp?referrer=list

Greene, J. (1997). A meta-analysis of the Rossell and Baker review of bilingual education research. *Bilingual Research Journal* , 21 (2&3).

Guerrero M., S. M. (2001). When Exemplary Gets Blurry: A Descriptive Analysis of Four Exemplary K-3 Spanish Reading Programs in Texas. *Bilingual Research Journal* .

Hopstock, P. (2003). *Descriptive Study of Services to LEP Students and LEP Students with Disabilities: Issues in Studying Learning Outcomes for LEP Students*. U.S. Department of Education, Office of English Language Acquisition.

Lucido, F. e. (2000). *Texas Successful Schools Study*. Texas Education Agency .

Munoz, Carmen, Ed. (2006). *Age and Rate of Foreign Language Learning*. Cleveland, England: Multilingual Matters.

Murdock, S. (2006). *Populations and Projections Program, Texas State Data Center – Office of the State Demographer*. The University of Texas at San Antonio, Institute for Demographic Research. http://txsdc.utsa.edu/download/pdf/estimates/2006_txpopost_county.pdf

Murdock, S. (2007). *The Population of Texas: Historical Patterns and Future Trends Affecting Education*. The University of Texas at San Antonio, Institute for Demographic Research. <http://txsdc.utsa.edu/>

No Child Left Behind Act of 2001. U.S. Public Law 107-110. 107th Congress, 8 January 2002.

Office of English Language Acquisition, L. E. (2003). *Non-Regulatory Guidance on the Title III State Formula Grant Program -Part II: Standards, Assessments, and Accountability*.

Padron, Y.N., Waxman, H.C. (2007). Educational Issues and Effective Practices for Hispanic Students. Springer US, 131-151

Ramirez, J. (1992). Executive Summary. *Bilingual Research Journal* , 16, 1-62.

Rolstad, K. M. (2005). The Big Picture: A Meta Analysis of Program Effectiveness Research on English Language Learners. *Educational Policy* , 572-594.

Texas Education Agency (TEA). State Profile Reports: 1995-1996, 1996-1997, 1997-1998, 1998-1999, 1999-2000, 2000-2001, 2005-2006, 2006-2007. Retrieved September 17, 2007 from <http://www.tea.state.tx.us/perfreport/aeis/>

Texas Education Agency. (2004). 2004 Adequate Yearly Progress (AYP) Guide.

Texas Education Agency. (2005). 2005 Adequate Yearly Progress (AYP) Guide.

Texas Education Agency. (2005). *Glossary for the Academic Excellence Indicator System 2004-05 Report*.

Texas Education Agency. (2006). 2006 Adequate Yearly Progress (AYP) Guide.

Texas Education Agency. (2007). 2007 Adequate Yearly Progress (AYP) Guide.

Texas Education Agency. (2007). *Glossary for the Academic Excellence Indicator System 2006-07 Report*.

Texas Education Agency. (2007). Public Education Indicator Management Systems: 2007.

Texas Administrative Code. Statues at Large. [§89.1205 (d)]

Texas Education Code. Statues at Large. Section 29.053c

Senate Bill 1871. (2007). Texas Public Law. 80th Congress, 1st session, 15 June 2007.

Texas State Library and Archives Commission. (2007). *United States and Texas Populations: 1850-2006*. Retrieved January 21, 2007: <http://www.tsl.state.tx.us/ref/abouttx/census.html>

Thomas, W. P., & Collier, V. (1997). *School Effectiveness for Language Minority Students*. Retrieved January 21, 2007, from National Clearinghouse for Bilingual Education: http://www.crede.ucsc.edu/research/llaa/1.1_final.html

Troike, R. (1978). Research Evidence for the Effectiveness of Bilingual Education. *National Association of Bilingual Education* , 13-24.

Verdugo, R. F. (2007). English Language Learners: Key Issues. *Education and Urban Society* , 167-193.

West Orange-Cove Consolidated ISD *et al.* v. Neeley. 2004. No. GV-100528 (District Court of Texas).

West Orange-Cove Consolidated ISD *et al.* v. Neeley. 2005. No. 04-1144 consolidated with No. 05-0145. (Supreme Court of Texas).

Wrobel, S. L. (2005). *The Effectiveness of Language Minority Programs in a Large Texas School District: A longitudinal Case Study*. PhD Thesis, University of Texas at Dallas.

Appendix A: The Legislative and Judicial Impact on Limited English Proficient Education

National Legislation

The No Child Left Behind Act of 2001 (NCLB) requires the states to develop academic benchmarks for all English Language Learners (ELL). States are mandated to use standardized examinations in grades 3-8 to evaluate reading, math, and writing competency. Recently, NCLB was revised to allow LEP students the opportunity to be tested in the native language in certain circumstances. This new policy is to ensure that the standardized assessments are evaluating the knowledge of students, not the ability to read and write English. In 2005, Texas received nearly \$1.3 billion in federal grants linked to NCLB (NCES, 2005). To continue the receipt of funds, LEP students must continually meet academic benchmarks and progress from one year to the next. As stipulated by No Child Left Behind, 95 percent of all LEP students must be included in the states' adequate yearly progress (AYP) measures. This recent modification to the legislation has placed an emphasis on bilingual education program evaluation. According to the Department of Education (2007) and the Texas Supreme Court (2005), the increased expectation of academic achievement has resulted in a higher cost of education, especially at the state level.

Judicial Impact on Texas Education

With the rise of achievement standards set by both national and state legislation, the cost of education is on the rise, particularly for the Limited English Proficient populations. There is a controversy regarding whether the current Texas funding scheme is inequitable or inadequate in terms of providing sufficient funds to meet these academic goals. At this time, the Texas Supreme Court acknowledges the difficulty in determining the cost of an adequate education (*West Orange-Cove v. Neeley*, 2005). The current Texas education finance formula (the Foundation School Program) has resulted from years of litigation and constricted resources (*West Orange-Cove v. Neeley*, Texas District Court, 2004). Most recently, Texas was ordered to eliminate the local property tax cap which was instituted to provide equity from district to

district⁴⁷. With that ruling, the Texas Supreme Court did not feel the plaintiffs presented viable proof that the finance formula was inequitable or inadequate because most Texas schools are meeting accreditation standards on current funding schemes (*West Orange-Cove v. Neeley*, 2005).

Legislative Initiatives in Texas

During the 80th Legislative Session policy makers passed Senate Bill 1871 requiring that every school district offering bilingual education or special language programs include data about the instruction method used for their bilingual students in their Public Education Information Management System (PEIMS) (Senate Bill 1871, 2007). This bill also mandates that the education commissioner develop a system to evaluate academic progress for students in the different bilingual education programs. Beginning in the 2008-09 school year, schools will be required to provide the Texas Education Agency with the following information⁴⁸:

- (1) Demographic information about the students enrolled in district bilingual education or special language programs
- (2) The number and percentage of students enrolled in each instructional model of a bilingual education or special language program offered by the district

If a student is enrolled in a bilingual education program, the program must be classified in the (PEIMS) report under one of the following categories:

- (A) Transitional bilingual (early exit)
- (B) Transitional bilingual (late exit)
- (C) Dual language immersion (two-way)
- (D) Dual language immersion (one-way)

Alternatively, if the program is a special language program, the program must be classified in the (PEIMS) report under one of the following categories:

- (A) English as a second language (self-contained)
- (B) English as a second language (pull-out)

⁴⁷ The Texas Supreme Court (2005) declared the property tax rate cap of \$1.50 per \$100 property value was actually an ad valorem tax. The tax rate cap was found to be in violation of Article VIII, section 1-e of the Texas Constitution which prohibited state property tax rates.

⁴⁸ Bill Text, SB 1871

Appendix B: Senate Bill 1871

Sec. 29.066. PEIMS REPORTING REQUIREMENTS. (a) A school district that is required to offer bilingual education or special language programs shall include the following information in the district's Public Education Information Management System (PEIMS) report:

(1) demographic information, as determined by the commissioner, on students enrolled in district bilingual education or special language programs;

(2) the number and percentage of students enrolled in each instructional model of a bilingual education or special language program offered by the district; and

(3) the number and percentage of students identified as students of limited English proficiency who do not receive specialized instruction.

(b) For purposes of this section, the commissioner shall adopt rules to classify programs under this section as follows:

(1) if the program is a bilingual education program, the program must be classified under the Public Education Information Management System (PEIMS) report as:

(A) transitional bilingual/early exit: 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 the student enrolls in school;

(B) transitional bilingual/late exit: 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 six or later than seven years after the student enrolls in school;

(C) dual language immersion/two-way: a biliteracy program that integrates students proficient in English and students identified as students of limited English proficiency in both English and Spanish and transfers a student identified as a student of limited English proficiency to English-only instruction not earlier than six or later than seven years after the student enrolls in school; or

(D) dual language immersion/one-way: a biliteracy program that serves only students identified as students of limited English proficiency in both English and Spanish and transfers a student to English-only instruction not earlier than six or later than seven years after the student enrolls in school; and

(2) if the program is a special language program, the program must be classified under the Public Education Information Management System (PEIMS) report as:

(A) English as a second language/content-based: an English program that serves students identified as students of limited English proficiency in English only by providing a full-time teacher certified under Section 29.061(c) to provide supplementary instruction for all content area instruction; or

(B) English as a second language/pull-out: an English program that serves students identified as students of limited English proficiency in English only by providing a part-

time teacher certified under Section 29.061(c) to provide English language arts instruction exclusively, while the student remains in a mainstream instructional arrangement in the remaining content areas.

(c) If the school district has received a waiver and is not required to offer a bilingual education or special language program in a student's native language or if the student's parents have refused to approve the student's entry into a program as provided by Section 29.056, the program must be classified under the Public Education Information Management System (PEIMS) report as: no bilingual education or special language services provided.

SECTION 3. Section 29.161, Education Code, is amended by amending Subsection (c) and adding Subsections (d), (e), and (f) to read as follows:

(c) The system must:

(1) be reflective of research in the field of early childhood care and education;

(2) be well-grounded in the cognitive, social, and emotional development of young children; ~~and~~

(3) apply a common set of criteria to each program provider seeking certification, regardless of the type of program or source of program funding; and

(4) be capable of fulfilling the reporting and notice requirements of Sections 28.006(d) and (g).

(d) The agency shall collect each student's raw score results on the reading instrument administered under Section 28.006 from each school district using the system created under

Subsection (a) and shall contract with the State Center for Early Childhood Development for purposes of this section.

(e) The State Center for Early Childhood Development shall, using funds appropriated for the school readiness certification system, provide the system created under Subsection (a) to each school district to report each student's raw score results on the reading instrument administered under Section 28.006.

(f) The agency shall:

(1) provide assistance to the State Center for Early Childhood Development in developing and adopting the school readiness certification system under this section, including providing access to data for the purpose of locating the teacher and campus of record for students; and

(2) require confidentiality and other security measures for student data provided to the State Center for Early Childhood Development as the agency's agent, consistent with the Family Educational Rights and Privacy Act of 1974 (20 U.S.C. Section 1232g).

SECTION 4. Subsection (e), Section 39.027, Education Code, is amended to read as follows:

(e) The commissioner shall develop an assessment system that shall be used for evaluating the academic progress, including reading proficiency in English, of all students of limited English proficiency, as defined by Section 29.052. A student who is exempt from the administration of an assessment instrument under Subsection (a)(3) or (4) who achieves

reading proficiency in English as determined by the assessment system developed under this subsection shall be administered the assessment instruments described by Sections 39.023(a) and (c). The performance under the assessment system developed under this subsection of students to whom Subsection (a)(3) or (4) applies shall be included in the academic excellence indicator system under Section 39.051, the performance report under Section 39.053, and the comprehensive annual report under Section 39.182. This information shall be provided in a manner that is disaggregated by the bilingual education or special language program, if any, in which the student is enrolled.

Appendix C: Comparative Spending for AYP Schools

Table 1 - Spending per LEP between Respondent and Non-Respondent Groups

Group	Mean Spending per LEP (\$)	Observations	Difference (\$)	P value
Response	1383	3288		
Non Response	1149	266	234	0.02

Table 2 - Spending per LEP Pupil between Missed AYP Campuses and Met AYP campuses in Respondent Group

Group	Mean Spending per LEP (\$)	Observations	Difference (\$)	P value
Missed AYP	234	2		
Met AYP	1101	213	867	0.36

Table 3 - Spending per LEP between Missed AYP Campuses and Met AYP campuses in Non Response Group

Group	Mean Spending per LEP (\$)	Observations	Difference (\$)	P value
Missed AYP	925	79		
Met AYP	1351	2554	426	0.02

Table 4 - Spending per LEP between Missed AYP Campuses and Met AYP campuses in Total Sample Group

Group	Mean Spending per LEP (\$)	Observations	Difference (\$)	P value
Missed AYP	907	81		
Met AYP	1332	2267	424	0.02

Appendix D: Survey Questionnaire

Dear Teacher:

Thank you for participating in this survey of bilingual education practices. This survey is part of our analysis of the best practices among bilingual education programs in Texas. Your participation is valuable to us, please complete and submit the survey by March 16th. This survey is confidential. Please be assured that your survey responses will not be made available to any other parties outside of this research group.

Participation in this survey is voluntary. You may decide not to participate or to withdraw at any time without penalty. This study is confidential and responses will not be made available to other researchers or our client and will not be distributed to any other parties outside of the research group. The records of this study will be kept private. No identifiers linking you to this study will be included in any sort of report that might be published. Research records will be stored securely and only the research team will have access to the records. Upon completion of the study, all survey responses will be permanently destroyed.

This research study has been reviewed by the Human Subjects' Protection Program and/or the Institutional Review Board at Texas A&M University. For research-related problems or questions regarding your rights as a research participant, you can contact these offices at (979)458-4067 or irb@tamu.edu.

About the Research Team

All of the research necessary to complete this project will be conducted by a Capstone group from the Bush School of Government and Public Service and will be supervised by Dr. Lori Taylor. The Capstone Seminar is a culminating Bush School experience that seeks to integrate what students have learned in their other classes in the context of an applied, team project. The capstone is an analysis of a management or policy issue (or some combination of the two) faced by a real-world client. For information on prior capstone reports, please visit <http://bush.tamu.edu/research/capstones/>

For Additional Information

If you have questions regarding this study, you may contact Zachary Hunt, 979-845-6332, zhunt@bushschool.tamu.edu or Miriam Magdaleno, 979-845-6330, mmagdaleno@bushschool.tamu.edu.

Regards,

Lori Taylor, Ph.D.

George Bush School of Government and Public Service, Texas A&M University

Please complete this Best Practices Study Survey to the best of your ability. Specific instructions are included with each question.

ID Code (required): _____

School Name (required): _____

Teacher Characteristics

1. My highest educational level is best described as: (Mark only one selection)

- non-degreed
- Associate
- Bachelor
- Masters
- Masters Plus Additional Hours
- Doctorate

2. I teach the following grade level(s):

- Kindergarten
- 1st
- 2nd
- 3rd
- 4th
- 5th
- 6th
- 7th
- 8th
- 9th

3. I possess the following certifications (please check all that apply):

- Bilingual Education Supplemental
- Bilingual Generalist
- English as a Second Language Supplemental
- English as a Second Language (ESL) Generalist
- Generalist (Early Childhood through 4 or 4-8)
- None of the above

4. I have taught a total of:

- 0 to 2 years
- 2 to 5 years
- 5 to 10 years
- 10 or more years

5. I have taught at this school a total of:

- 0 to 2 years
- 2 to 5 years
- 5 to 10 years
- 10 or more years

6. I have taught Limited English Proficient students for:

- 0 to 2 years
- 2 to 5 years
- 5 to 10 years
- 10 or more years

7. Please rate your level of proficiency in the following languages:

- English
- Spanish
- Vietnamese
- Urdu
- Arabic
- Korean
- Mandarin Chinese
- Other (please describe) _____
- Other (please describe) _____

8. My ethnic background is:

- Hispanic or Latino
- Caucasian (Non-Hispanic)
- Black or African American
- American Indian and Alaska Native
- Asian
- Native Hawaiian and Other Pacific Islander
- Other (please describe) _____

Class Characteristics

9. Please list the total number of LEP students in all subjects that you teach in a typical day.

10. Please list the total number of non-LEP students that you teach in a typical day.

11. What subjects do you teach? Please list the number of classes you teach per subject.

<u>Subject</u>	<u>Number of Classes Taught</u>
Reading/Language Arts	___
Math	___
Science	___
Social Studies	___
Self-Contained	___
Other: _____	___

12. The native languages of LEP students in my classroom include (please check all that apply):

- Spanish
- Vietnamese
- Urdu
- Arabic
- Korean
- Chinese
- Other (please describe) _____
- Other (please describe) _____
- Other (please describe) _____
- Other (please describe) _____

Program Characteristics

13a. The instructional program I use to teach Limited English Proficient Students is:

- A. Bilingual (Please answer question 13b)
- B. English as Second Language (ESL) (Please answer question 13c)
- C. Other (Please Describe):

13b. If your program is bilingual, Please select the option that most closely describes your instructional program for Limited English Proficient students (please circle the appropriate answer).

- A. My program 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 the student enrolls in school.
- B. My program 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 six or later than seven years after the student enrolls in school.
- C. My program integrates students proficient in English and students identified as students of limited English proficiency in both English and Spanish and transfers a student identified as a student of limited English proficiency to English-only instruction not earlier than six or later than seven years after the student enrolls in school.
- D. My program serves only students identified as students of limited English proficiency in both English and Spanish and transfers a student to English-only instruction not earlier than six or later than seven years after the student enrolls in school.
- E. Other (please specify):

13c. If your program is an English as a Second Language, please select the option that most closely describes your instructional program for Limited English Proficient students (please circle the appropriate answer)

- A. My program serves students identified as students of limited English proficiency in English only by providing a full-time teacher certified to provide supplementary instruction for all content area instruction.
- B. My program serves students identified as students of limited English proficiency in English only by providing a part-time teacher certified under English language arts instruction exclusively, while the student remains in a mainstream instructional arrangement in the remaining content areas.
- C. Other (please specify):

14. What percentage of your class is LEP Students?

- ___ 0% - 25%
- ___ 26% - 50%
- ___ 51% - 75%
- ___ 76% - 99%
- ___ My entire class is LEP.

15. In a typical week, how much of your instructional time is in English?

0% - 10

11% -20%

21% -30%

31% - 40%

41% - 50%

51% - 60%

61% - 70%

71% - 80%

81% - 90%

91% - 99%

I teach exclusively in English.

16. My instructional method includes translating for the LEP students in their native language (Yes or No).

17. The students are allowed to use both languages as needed. (Yes or No)

18 Have you used a different instructional method at your current school in the last 3 years? If so what program were you previously using and why did you change?

No

Yes (Please describe by typing below)

19. Which instructional teaching strategies do you commonly use in your classroom in a typical week? (Check all that apply)

	Please tell us how often each strategy is used by answering: 1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always. If you are not familiar with a concept please answer "Never"
I use pairs and small-group learning	
I use the Cooperative Learning Model	
I use computers in instruction	
I use whole word (with phonics included) approach	
I use phonetics	
I use multicultural literature	
I connect curriculum to students' experience	
I use cultural thematic lessons	
I use visuals, manipulatives, posters, timelines, maps, etc.	
I incorporate bicultural knowledge into the curriculum	
I use text driven instruction	
Other:	

20. Types of Interactions between LEP students and native-English speakers (NES)

(Please tell us how often each strategy is used for the following)

	Please tell us how often each strategy is used by answering: 1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always
LEPs and NESs interact at only recess and lunch	
LEPs and NESs interact in mainstream classes taught in English	
If yes, for how many hours per day? _____	
LEPs and NESs interact at recess, lunch and specials (i.e. P.E., Art, Music, Computer Lab)	
If yes, for how many hours per day? _____	

21. I attend Bilingual/ESL mastery and materials training:

	1=never, 2=once every 1-2 years, 3=once a year, 4=once a semester, 5=once a month or more often
Onsite In-service/Staff Development Workshops	
Offsite training at Regional Center	
Offsite training at District Office	
State Conferences	
National Conferences	

22. Please rate the availability of the following resources available to you in instructing LEP students:

	Please rate examples 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree	If you disagree and strongly disagree to the any of the options in question number 22 please use , this scale will follow: 1 = District lacks resources 2 = Lack of product in the market 3 = Both 4 = Other
I have enough non-English books		
I have enough books in English		
I have enough computers or access to computers		
I have enough Non-English workbooks (For any subject)		
I have enough Non-English Visual Aids		
I have enough English Visual Aids		
Other – please specify		

For the questions 24-28, please use the following scale:
1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always

24. _____ My principal communicates effectively with me.

25. _____ My principal is the main decision maker regarding school programs and initiatives.

26. _____ A sub-committee (composed of faculty and/or staff) is the main decision making body.

27. _____ My principal seeks feedback regarding the classroom program.

28. _____ My principal is open to me suggesting new initiatives.

29. Please describe how often your principle uses the following communication methods?
(Please rate each option)

Please rate examples 1=Never, 2= Rarely, 3=Sometimes, 4=Frequently, 5=Always

_____ Face to face contact

_____ Email

_____ Staff meetings

_____ Teacher evaluations

_____ Personal Letter/Notes

_____ School Memos

_____ Other – please specify

30. I communicate with parents regarding the students' progress. (Please use the following scale to answer this question)

_____ 1=Never,

_____ 2=Rarely,

_____ 3=Sometimes,

_____ 4=Frequently

_____ 5=Always

31. How do teachers communicate with parents? (Please rate each option)

_____ Teacher/Parent Conference

_____ Email

_____ Personal Letter/Notes

_____ School Memos

_____ Phone Calls

_____ PTA Meetings

_____ Volunteer opportunities at school

_____ Other (please explain): _____

32. My school interacts with the surrounding community regarding the education of our Limited English Proficient Students. Please use the following scale to answer this question:

_____ 1=Never,

_____ 2=Rarely,

_____ 3=Sometimes,

_____ 4=Frequently

_____ 5=Always

33. How do teachers and the school interact with the community regarding the education of Limited English Proficient Students? (Please rate each option)

____ School Board meetings

____ Volunteer Board meetings

____ Community Events

____ Community Publications

____ Other (Please Explain): _____

34a. I am able to communicate with parents in their native language? (Yes or No)

34b. If not, then is a translator provided by the school or district? (Yes or No)

35. In addition to RPTE and TAKS, what other assessment tools does the teacher use to determine the student's proficiency level? (Please provide examples) Please rate examples 1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always

36a. I use assessment data to identify students who need remedial assistance or are successful.

1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always

36b. I use assessment data to assign or reassign students to groups

1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always

36c. I use assessment data to tailor instruction strategies to individual student needs

1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always

36d. In what ways have you modified the instruction? (Please check all that apply)

_____ Switched from English to Native Language

_____ Other (Please specify)_____

_____ Other (Please specify)_____

_____ Other (Please specify)_____

_____ Other (Please specify)_____

Frequency of Responses

Highest Education Level

0%	Non-Degreed
0.2%	Associate
72%	Bachelor
18%	Masters
8.8%	Masters Plus Additional Hours
1%	Doctorate

Grades Taught

27.4%	Kindergarten
17%	1st
18%	2nd
18.3%	3rd
14.6%	4th
12.8%	5th
13.6%	6th
11.9%	7th
10.42%	8th
0.3%	9th

Teacher Certifications

10.1%	Bilingual Education Supplemental
46.2%	Bilingual Generalist
18.4%	English as a Second language supplement
26%	English as a Second Language (ESL) Generalist
35.3%	Generalist (Early Childhood through 4 or 4-8)
9.6%	None of the above

Years of Teaching Experience

12.6%	0 to 2 years
20.4%	2 to 5 years
22.9%	5 to 10 years
44.1%	10 or more years

Years of Teaching at Current School

30%	0 to 2 years
29%	2 to 5 years
20.6%	5 to 10 years
20.4%	10 or more years

Years of Teaching Limited English Proficient Students

17.7%	0 to 2 years
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26.9%	2 to 5 years
23.7%	5 to 10 years
31.8%	10 or more years

Level of Proficiency in the Following Languages

	Very Fluent	Fluent	Average	Below Average	No Fluency
English	88.2%	10.5%	1.3%	0%	0%
Spanish	29.8%	18.4%	10.0%	18.0%	23.8%
Vietnamese	0.4%	0%	0%	0.4%	99.2%
Urdu	0%	0%	0%	0%	100%
Arabic	0.2%	0%	0%	0.6%	99.2%
Korean	0%	0.2%	0%	0%	99.8%
Mandarin Chinese	0.2%	0.2%	0%	0.4%	99.2%
Other 1	4.1%	3.6%	9.5%	18.3%	64.5%
Other 2	2.6%	0%	1.7%	6.0%	89.7%

Ethnic Background

59.1%	Hispanic or Latino
36.5%	Caucasian (Non-Hispanic)
2.1%	Black or African American
0.5%	American Indian and Alaska Native
1.3%	Asian
0%	Native Hawaiian and Other Pacific Islander
1%	Other

Total Number of LEP Students in a Typical Teaching Day

Mean	Standard Deviation	Minimum	Maximum
20	17.36	0	151

Total Non-LEP Students in a Typical Teaching Day:

Mean	Standard Deviation	Minimum	Maximum
20	41.22	0	600

The Number of Classes for Following Subjects:

	Mean	Standard Deviation	Minimum	Maximum
Reading/Language Arts	3.2	6.76	0	70
Math	2.3	5.77	0	80
Science	2.2	4.74	0	40
Social Studies	2.19	4.19	0	36
Self-Contained	1.8	4.32	0	40

The Native Languages of LEP Students in Classroom:

97.8%	Spanish
4.7%	Vietnamese
2.7%	Urdu
3.5%	Arabic
2.2%	Korean
2.6%	Chinese
7.1%	Other 1
1.8%	Other 2
1%	Other 3
0.6%	Other 4

Instructional Program Used to Teach LEP Students:

46.2%	Bilingual
45.4%	English as a Second Language
8.4%	Other

Description of Bilingual Program for LEP Students

73.4%	The program 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 the student enrolls in school.
10.3%	The program 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 six or later than seven years after the student enrolls in school.
5.2%	The program integrates students proficient in English and students identified as students of limited English proficiency in both English and Spanish and transfers a student identified as a student of limited English proficiency to English-only instruction not earlier than six or later than seven years after the student enrolls in school.
5.2%	The program serves only students identified as students of limited English proficiency in both English and Spanish and transfers a student to English-only instruction not earlier than six or later than seven years after the student enrolls in school.
5.9%	Other

Description of English as a Second language (ESL) Program

64.5%	The program serves students identified as students of limited English proficiency in English only by providing a full-time teacher certified to provide supplementary instruction for all content area instruction.
14.1%	The program serves students identified as students of limited English proficiency in English only by providing a part-time teacher certified under English language arts instruction exclusively, while the student remains in a mainstream instructional arrangement in the remaining content areas.
21.4%	Other

Percentage of LEP Students in Class

25.3%	0% to 25%
12.8%	26% to 50%
10.4%	51% to 75%
13.5%	76% to 99%
38.1%	My entire class is LEP

Percentage of Instructional Time in English in a Typical Week

5.0%	0% to 20%
2.6%	11% to 20%
5.8%	21% to 30%
6.0%	31% to 40%
7.1%	41% to 50%
7.4%	51% to 60%
3.1%	61% to 70%
5.2%	71% to 80%
8.4%	81% to 90%
13.6%	91% to 99%
35.8%	I teach exclusively in English

Whether Instructional Methods Include Translation for LEP Students in Their Native Languages

47.5%	Yes
52.5%	No

Whether or Not the Students Are Allowed to Use Both Languages as Needed

85.8%	Yes
14.2%	No

Change in Instructional Method in the Last Three Years

16.1%	Yes
83.9%	No

Instructional Teaching Strategies Commonly Used in the Classroom in a Typical Week

	Always	Frequently	Sometimes	Rarely	Never
I use pairs and small-group learning	40.5%	47.3%	11.3%	1.0%	0%
I use the Cooperative Learning Model	30.3%	47.5%	17.6%	3.1%	1.5%
I use computers in instruction	22.4%	34.1%	31.4%	10%	2.2%
I use whole word (with phonics included) approach	24.2%	36%	28.4%	7.2%	4.2%
I use phonetics	30.7%	31.8%	22.7%	8.8%	6.0%
I use multicultural literature	28.7%	41.2%	21.4%	4.5%	4.2%
I connect curriculum to students' experience	56.1%	37.7%	5.2%	0.8%	0.2%
I use cultural thematic lessons	18.7%	32.1%	34.7%	10.7%	3.9%
I use visuals, manipulatives, posters, timelines, maps, etc.	61.3%	32.6%	4.9%	0.8%	0.3%
I incorporate bicultural knowledge into the curriculum	32.9%	38.1%	21%	5.5%	2.5%
I use text driven instruction	18.3%	35.4%	33.0%	10.3%	3.0%
Other 1	50.0%	35.0%	10.0%	0%	5.0%
Other 2	37.5%	37.5%	18.8%	0%	6.3%
Other 3	50.0%	16.7%	16.7%	0%	16.7%

The Interaction between LEP Students and Native-English Speakers (NES)

	Always	Frequently	Sometimes	Rarely	Never
LEPs and NESs interact at only recess and lunch	29.9%	10.7%	12.8%	12.8%	33.7%
LEPs and NESs interact in mainstream classes taught in English	52.5%	15.7%	9.7%	7.2%	15.0%
LEPs and NESs interact at recess, lunch and specials (i.e. P.E., Art, Music, Computer Lab)	71.6%	14.9%	6.1 %	2.7%	4.7%

Teacher Training

	Once a month or more	Once a semester	Once a year	Once every 1-2 years	Never
Onsite In-service/Staff Development Workshops	17.5%	30.3%	29.6 %	9.9%	12.7%
Offsite training at Regional Center	4.0%	18.6%	33.6 %	18.0%	25.8%
Offsite training at District Office	7.5%	24.4%	27.0%	13.6%	27.6%
State Conferences	0.17%	1.18%	15.9%	18.3%	64.5%
National Conferences	0.3%	0.7%	4.6%	12.1%	82.3%

Availability of the Resources

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I have enough non-English books	15.7%	24.3%	23.3%	23.8%	12.9%
I have enough books in English	48.7%	34.5%	9.3%	5.7%	1.8%
I have enough computers or access to computers	25.3%	33.3%	15.8%	15.0%	10.6%
I have enough Non-English workbooks (For any subject)	10.9%	25.0%	30.5%	18.2%	15.4%
I have enough Non-English Visual Aids	12.1%	23.9%	28.9%	20.5%	14.6%
I have enough English Visual Aids	35.6%	41.3%	13.5%	6.5%	2.5%
Other 1	36.3%	9.1%	18.2%	9.1%	27.3%
Other 2	100%	0%	0%	0%	0%

Reason for Unavailability of Resources

	District Lacks Resources	Lack of Product in The Market	Both	Other
No enough non-English books	34.8%	17.7%	32.3%	15.2%
No enough books in English	57.6%	0%	18.2%	24.2%
No enough computers or access to computers	84.3%	0.9%	3.7%	11.1%
No enough Non-English workbooks (For any subject)	35.2%	19.2%	25.6%	20%
No enough Non-English Visual Aids	30.0%	20.8%	30.8%	18.4%
No enough English Visual Aids	58.1%	0%	19.4%	22.5%
Other 1	66.7%	0%	33.3%	0%
Other 2	0%	0%	0%	0%

Communication Between Principal and Teachers

	Always	Frequently	Sometimes	Rarely	Never
My principal communicates effectively with me.	51.6%	31.4%	13.5%	2.6%	1.0%
My principal is the main decision maker regarding school programs and initiatives.	33.8%	40.2%	21.2%	4.1%	0.8%
A sub-committee (composed of faculty and/or staff) is the main decision making body.	15.3%	34.7%	31.0%	14.3%	4.8%
My principal seeks feedback regarding the classroom program.	37.5%	32.6%	20.9%	6.2%	2.8%
My principal is open to me suggesting new initiatives.	45.6%	28.8%	19.9%	3.8%	1.8%

Methods of Communication Between Principals and Teachers:

	Always	Frequently	Sometimes	Rarely	Never
Face-to-face contact	28.9%	47.6%	18.6%	4.6%	0.3%
E-mail	41.1%	47.6%	9.3%	1.5%	0.7%
Staff meeting	32.7%	48.1%	17.2%	0%	2.0%
Teacher Evaluation	24.0%	34.9%	32.8%	8.0%	0.3%
Personal Letter/notes	11.7%	21.2%	32.0%	23.1%	12.0%
School memos	24.0%	36.0%	25.3%	9.7%	4.9%
Other	66.7%	33.3%	0%	0%	0%

Communication with Parents Regarding the Students' Progress

0.2%	Never
0.8%	Rarely
11.3%	Sometimes
53.3%	Frequently
34.4%	Always

Methods of Communication Between Teachers and Parents

	Always	Frequently	Sometimes	Rarely	Never
Teacher/Parent conference	29.8%	46.8%	22.1%	1.1%	0.2%
Email	4.7%	13.9%	26.8%	26.9%	27.8%
Personal Letters or notes	20.3%	46.6%	25.7%	6.8%	0.7%
School memos	21.8%	44.9%	23.0%	6.4%	3.8%
Phone calls	24.2%	51.0%	23.0%	1.5%	0.3%
PTA meetings	8.9%	20.4%	31.4%	20.4%	19.0%
Volunteer Opportunities	8.6%	17.7%	37.7%	25.8%	10.3%
Other	52.6%	15.8%	31.6%	0%	0%

Interaction with the Surrounding Community Regarding the Education of LEP Students

5.6%	Never
17.5%	Rarely
38.4%	Sometimes
29.3%	Frequently
9.3%	Always

Methods of Communication Between Teachers and the Community Regarding the Education of LEP Students:

	Always	Frequently	Sometimes	Rarely	Never
School Board meetings	7.0%	20.4%	42.0%	22.3%	8.3%
Volunteer Board meetings	3.0%	12.0%	39.3%	29.8%	15.9%
Volunteer Opportunities at School	7.5%	26.7%	41.4%	18.7%	5.8%
Community events	7.2%	27.1%	43.0%	17.3%	5.4%
Community publications	7.4%	23.3%	40.8%	19.9%	8.6%
Other	26.7%	33.3%	20%	20%	0%

Ability to Communicate with Parents in Their Native Language

71.6%	Yes
28.4%	No

Translator Provided by the School or District

84.1%	Yes
15.9%	No

Other Assessment Tools the Teachers Used to Determine the Student’s Proficiency Level

	Always	Frequently	Sometimes	Rarely	Never
Technology Based Exams	55.2%	33.3%	9.9%	1.5%	0.2%
Informal Observations	51.3%	36.9%	10.4%	1.1%	0.3%
District Assessments	52.3%	34.0%	13.3%	0.4%	0%
Formal Assessments	51.2%	34.9%	11.6%	2.3%	0%
Other	51.6%	35.9%	10.9%	1.6%	0%

How Teachers Use Assessment Data

	Always	Frequently	Sometimes	Rarely	Never
Use assessment data to identify students who need remedial assistance or are successful.	56.4%	35.9%	6.3%	1.0%	0.3%
Use assessment data to assign or reassign students to groups.	51.9%	35.4%	8.7%	2.8%	1.2%
Use assessment data to tailor instruction strategies to individual student needs.	55.8%	37.3%	6.2%	0.5%	0.2%

Ways Teachers Modified Instruction

9.2%	Switched from English to Native Language
7.7%	Alter Assignments
3.5%	Adapt Instruction
1.1%	Assistive Technology

Appendix E –Regressions for Programmatic Type

Table E.1 –Programmatic Type (All Teachers)

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
ESL	0.047 (0.032)	0.030 (0.077)	0.559 (2.188)	0.191 (0.095)**
Bilingual	0.021 (0.029)	0.061 (0.082)	-1.602 (2.128)	0.147 (0.091)
Teacher has Taught 2-5 Years	0.005 (0.023)	0.025 (0.054)	-2.661 (1.736)	-0.012 (0.072)
Teacher has Taught 5-10 Years	-0.065 (0.033)*	-0.019 (0.052)	-0.751 (1.669)	-0.001 (0.073)
Teacher has Taught 10+ Years	-0.029 (0.027)	-0.012 (0.062)	-2.508 (1.592)	0.029 (0.083)
Elementary School	0.085 (0.026)***	0.422 (0.070)***	2.600 (2.548)	0.051 (0.085)
% Economically Disadvantaged	-0.001 (0.001)	-0.003 (0.002)*	-0.061 (0.064)	-0.002 (0.002)
Log LEP Student Count	-0.007 (0.018)	0.009 (0.046)	-5.133 (1.963)**	0.047 (0.069)
No bilingual/ESL certification	0.017 (0.021)	-0.028 (0.039)	0.037 (1.921)	-0.155 (0.080)*
Teacher has Advanced Degree	0.024 (0.017)	0.029 (0.029)	1.111 (1.310)	0.017 (0.045)
Bilingual/ESL Spending per-pupil (in thousands)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
Constant	0.093 (0.099)	-0.831 (0.254)***	105.749 (7.147)***	-0.309 (0.335)
Observations	482	434	537	564
R-squared	0.09	0.30	0.15	0.03

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table E.2 –Programmatic Type (K-2 Teachers)

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
ESL	0.087 (0.072)	-0.013 (0.161)	-2.954 (4.482)	0.101 (0.108)
Bilingual	0.041 (0.067)	-0.076 (0.144)	-2.519 (3.094)	-0.002 (0.126)
Teacher has Taught 2-5 Years	-0.019 (0.038)	0.087 (0.114)	-6.290 (2.733)**	-0.119 (0.118)
Teacher has Taught 5-10 Years	-0.078 (0.064)	-0.103 (0.133)	-3.118 (3.129)	-0.083 (0.158)
Teacher has Taught 10+ Years	-0.032 (0.042)	-0.002 (0.135)	-5.053 (3.161)	-0.167 (0.143)
Elementary School	.	.	.	.
% Economically Disadvantaged	-0.002 (0.001)*	-0.002 (0.003)	-0.037 (0.098)	-0.001 (0.003)
Log LEP Student Count	-0.003 (0.027)	-0.055 (0.074)	-5.580 (2.649)**	0.024 (0.079)
No bilingual/ESL certification	0.057 (0.074)	-0.332 (0.157)**	6.057 (4.644)	-0.169 (0.132)
Teacher has Advanced Degree	-0.011 (0.036)	0.080 (0.085)	2.872 (2.890)	0.061 (0.071)
Bilingual/ESL Program Spending per/pupil (in thousands	0.000 (0.000)	0.000 (0.000)*	-0.001 (0.001)	0.000 (0.000)
Constant	0.179 (0.177)	-0.136 (0.468)	112.859 (9.991)***	-0.021 (0.355)
Observations	184	158	218	239
R-squared	0.07	0.14	0.12	0.03

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table E.3 –Programmatic Type (3-9 Teachers)

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
ESL	0.028 (0.036)	0.077 (0.054)	1.820 (2.494)	0.220 (0.117)*
Bilingual	0.012 (0.040)	0.186 (0.059)***	-2.085 (2.746)	0.255 (0.101)**
Teacher has Taught 2-5 Years	0.028 (0.036)	-0.044 (0.063)	0.515 (2.104)	0.075 (0.106)
Teacher has Taught 5-10 Years	-0.057 (0.029)*	-0.004 (0.062)	1.230 (1.836)	0.055 (0.084)
Teacher has Taught 10+ Years	-0.028 (0.032)	-0.007 (0.054)	-0.830 (1.785)	0.172 (0.104)
Elementary School	0.071 (0.030)**	0.404 (0.054)***	3.153 (2.356)	0.054 (0.096)
% Economically Disadvantaged	-0.001 (0.001)	-0.005 (0.002)***	-0.062 (0.051)	-0.003 (0.002)
Log LEP Student Count	-0.007 (0.020)	0.065 (0.036)*	-5.296 (1.652)***	0.057 (0.072)
No bilingual/ESL certification	0.005 (0.023)	-0.006 (0.035)	-0.542 (1.850)	-0.162 (0.090)*
Teacher has Advanced Degree	0.048 (0.021)**	-0.012 (0.035)	-0.105 (1.416)	-0.032 (0.057)
Bilingual/ESL Program Spending per/pupil (in thousands)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.001)	-0.000 (0.000)
Constant	0.080 (0.093)	-0.973 (0.207)***	104.246 (6.769)***	-0.400 (0.361)
Observations	298	276	319	325
R-squared	0.11	0.47	0.23	0.07

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix F –Regressions for Instructional Time in English

Table F.1 -English Instructional Levels (All Teachers)

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
91-99% English Instruction	0.022 (0.018)	-0.030 (0.043)	-2.031 (2.079)	-0.013 (0.060)
81-90% English Instruction	-0.002 (0.031)	-0.017 (0.072)	-0.146 (1.774)	-0.035 (0.088)
71-80% English Instruction	0.035 (0.045)	0.004 (0.062)	-1.846 (2.567)	-0.162 (0.090)*
61-70% English Instruction	-0.108 (0.050)**	-0.124 (0.103)	-0.467 (2.243)	-0.102 (0.101)
51-60% English Instruction	-0.021 (0.043)	-0.087 (0.068)	-0.853 (1.723)	-0.150 (0.088)*
41-50% English Instruction	0.036 (0.055)	0.043 (0.082)	-4.455 (3.134)	-0.047 (0.104)
31-40% English Instruction	-0.054 (0.028)*	0.117 (0.084)	-3.545 (3.150)	0.067 (0.081)
21-30% English Instruction	-0.013 (0.030)	-0.114 (0.107)	-3.452 (1.767)*	-0.274 (0.110)**
11-20% English Instruction	0.020 (0.056)	-0.056 (0.192)	-7.177 (3.492)**	-0.308 (0.197)
0%-10% English Instruction	-0.085 (0.052)	0.169 (0.088)*	-0.347 (2.035)	0.081 (0.105)
Teacher has Taught 2-5 Years	0.002 (0.025)	0.024 (0.050)	-1.786 (1.642)	0.027 (0.073)
Teacher has Taught 5-10 Years	-0.066 (0.032)**	-0.018 (0.043)	-0.513 (1.731)	0.017 (0.066)
Teacher has Taught 10+ Years	-0.031 (0.025)	-0.007 (0.053)	-2.097 (1.536)	0.056 (0.077)
Elementary School	0.088 (0.027)***	0.425 (0.067)***	2.354 (2.578)	0.044 (0.086)
% Economically Disadvantaged	-0.001 (0.001)*	-0.003 (0.002)*	-0.053 (0.062)	-0.002 (0.002)
Log LEP Student Count	-0.005 (0.019)	0.019 (0.043)	-5.048 (1.834)***	0.063 (0.068)
No bilingual/ESL certification	0.010 (0.022)	-0.034 (0.039)	-0.036 (2.031)	-0.192 (0.078)**
Teacher has Advanced Degree	0.024 (0.017)	0.025 (0.025)	1.346 (1.305)	0.018 (0.042)
Bilingual/ESL Program	0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
Spending per/pupil (in Constant	0.141 (0.101)	-0.833 (0.246)***	105.291 (7.275)***	-0.202 (0.317)
Observations	493	443	550	577
R-squared	0.12	0.33	0.16	0.06

Table F.2 – English Instructional Levels (K-2 Grade Teachers)

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
91-99% English Instruction	0.012 (0.041)	-0.291 (0.151)*	2.498 (2.773)	-0.034 (0.079)
81-90% English Instruction	-0.000 (0.074)	-0.142 (0.240)	3.653 (6.458)	-0.032 (0.151)
71-80% English Instruction	0.124 (0.067)*	-0.370 (0.181)**	-1.018 (5.167)	-0.391 (0.198)*
61-70% English Instruction	-0.107 (0.069)	-0.309 (0.218)	2.146 (4.676)	-0.099 (0.171)
51-60% English Instruction	-0.077 (0.071)	-0.224 (0.174)	-1.436 (3.207)	-0.229 (0.111)**
41-50% English Instruction	0.096 (0.063)	-0.035 (0.184)	2.116 (3.590)	0.006 (0.139)
31-40% English Instruction	-0.038 (0.046)	0.051 (0.221)	-1.752 (5.413)	0.091 (0.139)
21-30% English Instruction	-0.058 (0.046)	-0.268 (0.179)	-2.977 (3.911)	-0.287 (0.157)*
11-20% English Instruction	0.023 (0.084)	-0.312 (0.218)	-8.172 (4.576)*	-0.533 (0.182)***
0%-10% English Instruction	-0.114 (0.063)*	0.040 (0.167)	0.235 (4.273)	0.046 (0.129)
Teacher has Taught 2-5 Years	-0.037 (0.043)	0.104 (0.116)	-6.040 (2.671)**	-0.087 (0.114)
Teacher has Taught 5-10 Years	-0.074 (0.063)	-0.062 (0.108)	-4.407 (3.598)	-0.072 (0.127)
Teacher has Taught 10+ Years	-0.019 (0.035)	0.043 (0.121)	-4.846 (3.216)	-0.122 (0.115)
Elementary School	.	.	.	.
% Economically Disadvantaged	-0.002 (0.001)*	-0.003 (0.003)	-0.016 (0.093)	-0.001 (0.003)
Log LEP Student Count	0.000 (0.031)	-0.027 (0.069)	-5.237 (2.892)*	0.033 (0.081)
No bilingual/ESL certification	0.054 (0.073)	-0.343 (0.130)**	7.189 (4.588)	-0.179 (0.130)
Teacher has Advanced Degree	-0.002 (0.031)	0.061 (0.086)	2.990 (3.095)	0.063 (0.068)
Bilingual/ESL Program Spending per/pupil (in Constant	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
	0.251 (0.158)	-0.164 (0.470)	107.117 (12.572)***	0.020 (0.370)
Observations	184	158	219	240
R-squared	0.15	0.23	0.14	0.13

Table F.3 -English Instructional Levels (3-8 Grade Teachers)

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
91-99% English Instruction	0.023 (0.020)	0.055 (0.042)	-3.846 (2.569)	0.012 (0.079)
81-90% English Instruction	0.000 (0.037)	0.010 (0.054)	-0.380 (1.557)	-0.034 (0.100)
71-80% English Instruction	0.017 (0.050)	0.062 (0.064)	-1.766 (3.093)	-0.093 (0.124)
61-70% English Instruction	-0.113 (0.060)*	-0.032 (0.104)	-1.605 (2.547)	-0.077 (0.103)
51-60% English Instruction	0.009 (0.048)	0.020 (0.078)	0.513 (2.340)	-0.000 (0.131)
41-50% English Instruction	-0.037 (0.083)	-0.031 (0.069)	-12.691 (3.794)***	-0.176 (0.124)
31-40% English Instruction	-0.113 (0.055)**	0.049 (0.093)	-4.748 (2.575)*	-0.005 (0.117)
21-30% English Instruction	0.067 (0.044)	-0.037 (0.111)	-2.181 (2.749)	-0.250 (0.152)
11-20% English Instruction	0.060 (0.034)*	0.438 (0.048)***	0.467 (4.627)	0.278 (0.110)**
0%-10% English Instruction	-0.036 (0.075)	0.090 (0.065)	1.296 (2.445)	0.156 (0.134)
Teacher has Taught 2-5 Years	0.032 (0.032)	-0.021 (0.065)	1.175 (2.091)	0.117 (0.112)
Teacher has Taught 5-10 Years	-0.048 (0.026)*	0.014 (0.067)	2.176 (1.816)	0.091 (0.091)
Teacher has Taught 10+ Years	-0.025 (0.030)	-0.013 (0.054)	-0.190 (1.668)	0.181 (0.104)*
Elementary School	0.080 (0.030)***	0.440 (0.059)***	1.842 (2.403)	0.064 (0.095)
% Economically Disadvantaged	-0.001 (0.001)	-0.004 (0.002)***	-0.068 (0.049)	-0.002 (0.002)
Log LEP Student Count	-0.007 (0.020)	0.065 (0.036)*	-5.081 (1.385)***	0.074 (0.068)
No bilingual/ESL certification	0.000 (0.022)	-0.018 (0.033)	-0.610 (1.834)	-0.199 (0.089)**
Teacher has Advanced Degree	0.039 (0.021)*	-0.002 (0.034)	-0.252 (1.374)	-0.031 (0.059)
Bilingual/ESL Program Spending per/pupil (in Constant	0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	-0.000 (0.000)
	0.112 (0.094)	-0.963 (0.194)***	105.595 (5.588)***	-0.294 (0.311)
Observations	309	285	331	337
R-squared	0.15	0.46	0.27	0.07

Appendix G –Regressions for Classroom Instructional Strategies

Table G.1 -Instructional Strategies used by all Teachers

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
Pairs and Small Groups	0.003 (0.025)	-0.039 (0.061)	0.632 (1.917)	-0.141 (0.072)*
Cooperative Learning	-0.028 (0.022)	0.037 (0.041)	-2.707 (1.343)**	0.025 (0.057)
Computers	-0.010 (0.017)	0.042 (0.044)	-1.128 (1.484)	0.041 (0.047)
Whole Word	0.028 (0.023)	0.013 (0.034)	2.373 (1.295)*	0.035 (0.041)
Phonetics	-0.026 (0.017)	0.004 (0.036)	-0.871 (1.446)	-0.002 (0.048)
Multicultural Learning	0.001 (0.023)	0.073 (0.040)*	2.671 (2.490)	0.048 (0.054)
Connect to Student Experience	0.024 (0.034)	0.088 (0.062)	4.470 (3.492)	0.180 (0.085)**
Cultural Thematic Lessons	-0.007 (0.019)	-0.052 (0.042)	1.251 (1.255)	-0.012 (0.046)
Visuals and Manipulatives	-0.063 (0.031)**	-0.107 (0.049)**	-4.907 (2.126)**	-0.159 (0.080)**
Bicultural Knowledge	0.014 (0.023)	0.007 (0.034)	-1.155 (1.466)	0.017 (0.051)
Text-Based Instruction	0.011 (0.017)	0.020 (0.025)	-1.840 (0.977)*	-0.007 (0.038)
Teacher has Taught 2-5 Years	0.018 (0.023)	0.020 (0.057)	-2.654 (1.837)	-0.001 (0.075)
Teacher has Taught 5-10 Years	-0.049 (0.031)	-0.022 (0.051)	-0.411 (1.589)	0.026 (0.074)
Teacher has Taught 10+ Years	-0.020 (0.026)	-0.029 (0.060)	-2.629 (1.655)	0.032 (0.084)
Elementary School	0.086 (0.026)***	0.410 (0.062)***	1.344 (2.492)	0.006 (0.088)
% Economically Disadvantaged	-0.001 (0.001)	-0.003 (0.002)	-0.049 (0.063)	-0.002 (0.002)
Log LEP Student Count	-0.011 (0.019)	0.003 (0.051)	-5.686 (1.876)***	0.020 (0.068)
No bilingual/ESL certification	0.006 (0.020)	-0.016 (0.036)	0.096 (2.178)	-0.178 (0.072)**
Teacher has Advanced Degree	0.023 (0.019)	0.032 (0.028)	1.172 (1.236)	0.009 (0.043)

Bilingual/ESL Spending per/pupil (in thousands)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
Constant	0.183 (0.105)*	-0.815 (0.262)***	109.216 (8.349)***	0.007 (0.342)
Observations	496	446	553	580
R-squared	0.10	0.32	0.18	0.04

Table G.2 - Instructional Strategies used by Grades K-2 Teachers

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
Pairs and Small Groups	-0.009 (0.055)	-0.075 (0.176)	2.659 (8.315)	0.016 (0.117)
Cooperative Learning	-0.052 (0.041)	-0.003 (0.073)	-4.080 (2.119)*	-0.097 (0.085)
Computers	-0.045 (0.034)	0.052 (0.083)	-1.869 (2.234)	-0.021 (0.078)
Whole Word	0.078 (0.044)*	0.037 (0.076)	3.936 (2.640)	0.033 (0.068)
Phonetics	-0.026 (0.033)	0.053 (0.085)	1.597 (3.463)	0.060 (0.085)
Multicultural Learning	0.042 (0.039)	0.137 (0.093)	5.054 (3.984)	0.116 (0.094)
Connect to Student Experience	-0.021 (0.136)	-0.116 (0.233)	21.092 (19.855)	-0.237 (0.185)
Cultural Thematic Lessons	-0.045 (0.024)*	-0.160 (0.081)*	2.281 (2.058)	-0.021 (0.068)
Visuals and Manipulatives	-0.016 (0.060)	0.202 (0.143)	-11.311 (7.611)	0.160 (0.234)
Bicultural Knowledge	0.002 (0.037)	0.012 (0.057)	-1.884 (3.719)	0.058 (0.076)
Text-Based Instruction	0.026 (0.027)	0.018 (0.057)	-4.209 (1.869)**	-0.022 (0.059)
Teacher has Taught 2-5 Years	-0.010 (0.039)	0.048 (0.131)	-8.924 (3.057)***	-0.112 (0.115)
Teacher has Taught 5-10 Years	-0.064 (0.057)	-0.109 (0.151)	-5.191 (3.370)	-0.049 (0.163)
Teacher has Taught 10+ Years	-0.010 (0.038)	-0.033 (0.141)	-7.115 (4.114)*	-0.144 (0.136)
Elementary School	.	.	.	.
% Economically Disadvantaged	-0.001 (0.001)	-0.002 (0.003)	0.002 (0.095)	-0.001 (0.003)
Log LEP Student Count	-0.011 (0.026)	-0.066 (0.087)	-6.527 (2.489)**	0.004 (0.083)
No bilingual/ESL certification	0.050 (0.083)	-0.259 (0.120)**	4.604 (4.254)	-0.149 (0.116)
Teacher has Advanced Degree	-0.002 (0.038)	0.078 (0.078)	3.226 (2.573)	0.045 (0.070)
Bilingual/ESL Spending per/pupil (in thousands)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
Constant	0.317 (0.132)**	-0.247 (0.527)	101.037 (15.721)***	0.108 (0.361)
Observations	186	160	221	242
R-squared	0.10	0.17	0.22	0.05

Table G.3 - Instructional Strategies used by Grades 3-8 Teachers

	Value Added	TAKS Scores	ELL Progress Measure	TAKS Passing
Pairs and Small Groups	0.014 (0.030)	0.010 (0.080)	-1.542 (1.766)	-0.184 (0.102)*
Cooperative Learning	-0.029 (0.031)	0.027 (0.054)	-1.366 (1.736)	0.105 (0.078)
Computers	-0.002 (0.022)	0.032 (0.037)	-0.996 (1.613)	0.098 (0.059)
Whole Word	-0.001 (0.029)	0.021 (0.035)	1.657 (1.186)	0.037 (0.061)
Phonetics	-0.027 (0.024)	-0.036 (0.032)	-0.925 (1.238)	-0.011 (0.056)
Multicultural Learning	-0.017 (0.025)	0.054 (0.038)	1.384 (1.749)	0.016 (0.074)
Connect to Student Experience	0.033 (0.035)	0.109 (0.060)*	1.518 (2.381)	0.250 (0.104)**
Cultural Thematic Lessons	0.023 (0.028)	0.018 (0.046)	0.350 (1.564)	-0.012 (0.075)
Visuals and Manipulatives	-0.074 (0.034)**	-0.144 (0.047)***	-3.311 (1.865)*	-0.203 (0.096)**
Bicultural Knowledge	0.018 (0.026)	-0.017 (0.038)	-0.141 (1.846)	-0.009 (0.064)
Text-Based Instruction	0.006 (0.018)	0.009 (0.028)	0.139 (1.097)	0.002 (0.051)
Teacher has Taught 2-5 Years	0.050 (0.032)	-0.006 (0.073)	1.024 (2.164)	0.084 (0.119)
Teacher has Taught 5-10 Years	-0.040 (0.026)	0.025 (0.066)	1.526 (1.705)	0.070 (0.095)
Teacher has Taught 10+ Years	-0.017 (0.034)	-0.004 (0.060)	-0.611 (1.699)	0.166 (0.116)
Elementary School	0.079 (0.028)***	0.433 (0.055)***	1.670 (2.401)	0.042 (0.092)
% Economically Disadvantaged	-0.001 (0.001)	-0.004 (0.002)**	-0.058 (0.051)	-0.002 (0.002)
Log LEP Student Count	-0.010 (0.022)	0.053 (0.038)	-5.924 (1.571)***	0.023 (0.070)
No bilingual/ESL certification	-0.007 (0.021)	-0.001 (0.034)	-0.690 (2.094)	-0.189 (0.085)**
Teacher has Advanced Degree	0.047 (0.021)**	-0.002 (0.030)	-0.135 (1.451)	-0.035 (0.055)
Bilingual/ESL Spending per/pupil (in thousands)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	-0.000 (0.000)
Constant	0.144 (0.108)	-0.970 (0.219)***	111.137 (6.838)***	-0.073 (0.365)
Observations	310	286	332	338
R-squared	0.14	0.47	0.24	0.10