

An Assessment of Bilingual Education Programs for a Large Texas School District

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Abstract

With the recent movements toward English Only and the passage of proposition 227 in California, bilingual and other language minority programs have once again come to the attention of policy makers and the public. A striking feature of this debate is the apparent lack of appropriate and definitive measures of the success of these programs.

This study is the first step in establishing a baseline for assessing the effects of changes to bilingual programs in a large Texas school district. The study traces the evolution of programs in the district, and describes student language assessment tools and processes. Individual student data from the district and from a state wide database are then used to analyze factors which lead to students being assigned to bilingual, ESL or regular classrooms in the first three grades. A preliminary assessment of the impact of these programs on 4th and 5th grade reading scores shows that transition to regular classroom by the end of third grade, and early native language reading skills make important contributions to success in reading.

Further analyses using additional data from the district and more information on what actually happens in bilingual and ESL classrooms are planned.

An Assessment of Bilingual Education Programs for a Large Texas School District

In 1968 congress adopted Title VII of the Elementary and Secondary Education Act (ESEA) as a response to high drop-out rates among Hispanic students in the southwest (Donegan, 1996). Thirty years later there are an estimated 3.5 million students who are identified as Limited English Proficient (LEP) (Rodriguez, 1996). Yet, there is still little consensus or consistency concerning the goals, design, or effectiveness of programs for the education of language minority students. Most policymakers do agree, however, that bilingual education is not meeting expectations (Wildavsky, 1992).

A large Texas school district (District), has recently implemented a number of program improvements for the education of Limited English Proficient students. One aspect of this restructuring is to improve the monitoring and evaluation of LEP programs. The District has partnered with the Texas Schools Project to conduct a comprehensive evaluation of these program changes. The study has three principle components:

- I. Documentation of the District's past and current policies and practices for providing educational services to LEP children.
- II. An analysis of the operation of the District's LEP programs from 1990 to 1997 and the impact of these programs on the achievement of LEP children attending the District's schools.
- III. Development of methodologies and procedures to evaluate the effectiveness of recent changes in the District's LEP programs (Kain, 1998a).

This paper represents the first steps to provide the baseline assessment necessary for a meaningful evaluation of program reforms.

This evaluation is a one district-case study which uses historical and content analysis of language minority programs in addition to a longitudinal cohort study of academic achievement. We have been fortunate to have access to the Texas Schools Micro-Data Panel (TSMP), the District's database of Limited English Proficient students, as well as

extensive District program records. This paper will discuss how educational programs for LEP students evolved in the district, what programs are currently available, and how students are assigned to these programs. Finally, it will examine how assignment to these programs in the first three grades affects academic achievement in the fourth and fifth grades.

The District

The study examines efforts to educate Limited English Proficient (LEP) students in a large urban school district in Texas (District). Current enrollment exceeds 75,000 students, of which more than twenty percent are identified as LEP. The District has 12 high school campuses, 20 middle school campuses, 61 elementary school campuses, and seven special schools campuses. The district's Total Operating Expenditures for the '98-'99 school year are more than \$350,000,000, with an average per pupil expenditure of about \$5,000. There are nearly 4,300 teachers, which account for 50 percent of the total staff.

The race/ethnic distribution of the district is 33.2% African American, 38.4% Hispanic, 25.9% White, 2.3% Asian/Pacific Islander, and 0.2% Native American. Nearly sixty percent of the student population is identified as economically disadvantaged. For our purposes, "economically disadvantaged" is defined as qualifying for free or reduced price school meals. 11.6 percent of students are in Special Education, 18.4 percent are in Career and Technology Education, 20.9 percent are in Bilingual/ESL programs and 7.9 percent are in Gifted and Talented Education.

History

The District's first bilingual program, "Programa en Dos Lenguas," was implemented in the 1969 – 1970 school year. This program was a response to a realization of need as well as the availability of federal funding through Title VII of the ESEA. At that time, the district had nearly 7,000 Mexican-American students, an estimated 95 percent of whom spoke Spanish as their primary language. Furthermore, increasing numbers of non-English speakers were moving into the district to take advantage of job

opportunities. The district felt it was important to address the educational needs of these students as well as preserve and protect the multi-cultural aspects of the community (District, 1969).

The original program was implemented in seven elementary schools, and served only students in Kindergarten and the first grade. Schools selected for the program had to have a student body of fifty percent or more Mexican-Americans. Staffing for the program varied on the basis of availability of bilingual teachers at the campus. However, each classroom had at least one bilingual teacher or teacher's aide. The program was designed to provide English and Spanish instruction to all students in the classroom. The specific goals of the original program were:

- 1) Develop a positive self-concept,
- 2) To produce an environment which promotes the *development of two languages: English and Spanish* (emphasis added),
- 3) To improve attendance and academic achievement, and
- 4) To promote parental involvement (District, 1973).

By 1973 –1974 school year, the program had been extended to eight schools and served students from Pre-K through fifth grade (District, 1983).

In 1974, the United States Supreme Court unanimously decided in *Lau v. Nichols* that placing Non-English speaking students in regular English classrooms was a violation of section 601 of the Civil Rights Act of 1964. The court ruled that schools must provide special assistance to language minority children in order to allow them to fully partake in public education (*Lau*, 1974). In response to this ruling, the district submitted a “Lau Plan” to the Office of Civil Rights (OCR). The district wide plan was approved for implementation in 1978. The key programs in the plan were:

- Bilingual Education – State Program K-5
- English for Speakers of Other Languages (ESOL) K-12
- Modified Bilingual Education 6-12(District, 1983:2).

The ESEA Title VII K-3 programs begun in the 69-70 school year ran concurrently with the programs established under the *Lau* decision. While the original ESEA grant had expired in 1975, the programs were continued. The ESEA grant was reissued for 1981 through 1983.

The availability of Federal funds and the requirements under the *Lau* decision were not the only factors driving the expansion of LEP programs. Demographic shifts in the district also required that it focus more attention on language minority students. Between 1971 and 1982, the district experienced a nearly twenty percent drop in overall enrollment. At the same time, Hispanic enrollment almost doubled, from ten percent to twenty percent of the student population (District, 1983). To further complicate matters, these new students were more transient and from lower income families. These students also tended to score below the norm on standardized tests.

In an attempt to serve this changing population, the District developed new strategies for their education. First, in 1979, the District started its English as a Second Language program (ESL) (District, 1984). In 1982, the Language Center program designed primarily for Middle and High School refugees and migrants, was implemented (District, 1983).

Perhaps more interesting than the addition of new programs in the district are the dramatic changes in program goals. While the original program focussed on fluency in both English *and* their home language, the ultimate goal of the newer programs was academic achievement in an all English curriculum. While other goals, such as cultural awareness and pride, are also included, they are clearly secondary to fluency and achievement in English (District, 1983). Program objectives changed from preserving and improving “the child’s self image, his appetite for learning and his joy in school life by moving very slowly from English to... Spanish” (District, 1969:1), to “implement programs that meet or exceed state and local requirements (District, 1994:ii).

Presently, the District is in the process of implementing a number of policy changes regarding its LEP programs. The District conducted an evaluation of its LEP programs in 1997 and found that neither the goals for English proficiency nor academic achievement were being met satisfactorily. The changes are designed to move students from LEP to non-LEP more quickly than in the past. Students placed in a bilingual program in Pre-K or Kindergarten will be expected to transition into the regular English program before the fourth grade. LEP students in other programs or who enter the district later will be expected to transition to non-LEP within six years. To make this possible, the District is implementing a number of policy changes. These include changes in curriculum, student classroom assignment, and assessment, as well as staff development programs and incentives (District, 1998).

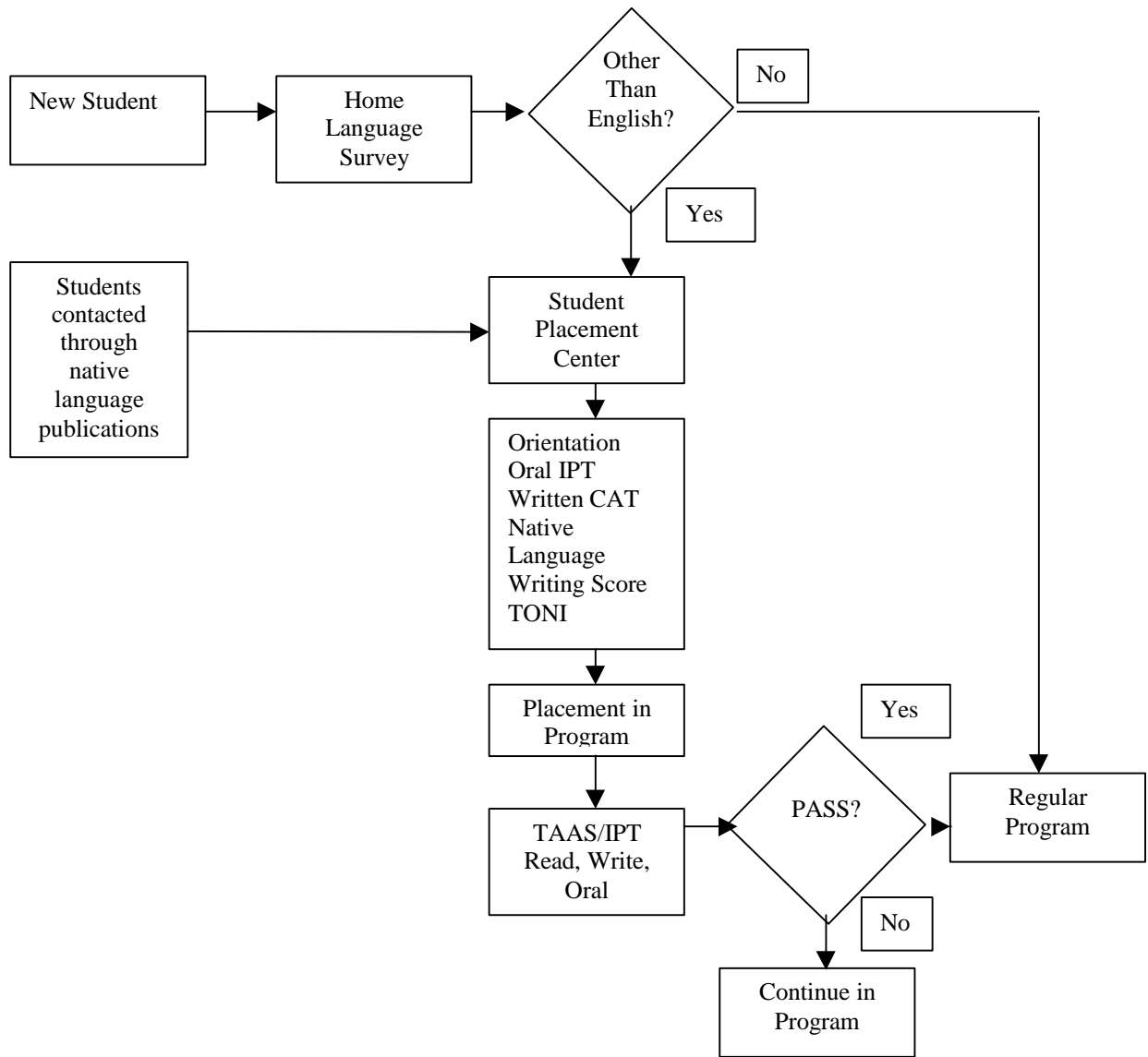
Placement

Twenty-one percent of the student population is identified as Limited English Proficient (LEP), and 86 percent of these speak Spanish. Students are selected for LEP testing based on their responses to the district's Home Language Survey. If a language other than English is indicated in at least one of the six questions, the student is sent to the Student Placement Center to be tested for English proficiency.

The Placement Center tests about 2,100 new students each year, as well as periodically re-testing current students. The district administers the Oral IPT test, a written California Achievement Test (CAT), a native language writing test, and a Test of Non-verbal Intelligence (TONI) for Special Education. Pre-literate students are also given the Student Oral Language Observation Matrix (SOLOM) test. Descriptions of the Language Proficiency tests are given in the next section.

To accommodate these students, the Placement Center employs 11 full time and 25-45 part time employees. In addition, Catholic Charities and World Relief provide volunteers to administer tests to students who speak languages other than those that the regular staff can handle. Those students who are determined to be LEP are then considered for special language instruction. Once parental permission is received, the LEP student is placed in

one of the six language programs that the district provides. Program placement is determined by grade, need, and availability of programs at the student's assigned campus.



Parental permission is required before a student can be placed in a minority language program.

Language Assessment

The first step in language assessment is the administration of the Home Language Survey to determine if the student may be considered Limited English Proficient. Questions on the survey are:

- 1.) What language other than English, if any, is commonly spoken in the home?

- 2.) Does the student speak or understand a language other than English? If yes, write the name of the language.
- 3.) What is the first language the student learned to speak?
- 4.) Does the student live with someone who commonly speaks a language other than English? If yes, write the name of the language.
- 5.) What language does the student speak most of the time?
- 6.) If a language other than English is indicated on any one of the above questions, does the parent or guardian need to communicate with the school in a language other than English? If yes, write the name of the language.

The survey is printed in English, Spanish, and Vietnamese. If necessary, the survey will be given orally in the parent's native language. If any of these questions are answered with a language other than English, the student will be tested for English Language Proficiency. Rossell (1998) expresses concern that a survey such as this may potentially identify a student as LEP, even if English is the primary, or sole, language. However, the survey merely flags the student for English proficiency assessment. Any assignment recommendation is based on the results of that assessment.

There are a number of tests utilized to determine language proficiency. These tests are given to determine student placement, as well as program reclassification. Currently, the District uses the IDEA Language Proficiency Tests (IPT). These tests are divided by age/grade level and test syntax, morphological structure, lexical items, phonological structure, comprehension, and oral production (ERIC, 1998). Children aged three through five are given the Pre-IPT. The child's score is then compared to a "level summary" to determine the child's language ability. School-aged children are given either the IPT-1 (Kindergarten through 6), or the IPT-2 (7 – 12). These tests designate students as Non, Limited, or Fluent English Speakers. In addition to these tests, students may be given Reading and/or Writing IPT's, particularly for reclassification purposes. Spanish versions of these tests (IPTI, IPTII) may be given to Non-English Speakers.

Prior to implementing the IPT tests, the District used the Language Assessment Scales (LAS). Like the IPT, the LAS has three levels: Level 1(grades 2-3), Level 2 (grades 4-6),

and Level 3 (grades 7-12). The Writing and Reading (LAS R/W) versions of the test use multiple choice, true/false, and open ended questions to determine if the student is a Non, Limited, or Competent Writer/Reader. The oral version of the test (LAS-O) classifies students as Non, Limited, or Fluent English Speakers (ERIC,1998). It is important to note that both the LAS and the IPT tests have been criticized for overidentifying students as being LEP. Particularly, the tests cannot differentiate between substantive knowledge and language skill (Rossell, 1998). However, at least in the case of Spanish speakers, a native language assessment is also given. This should help us discern between language skills and general knowledge.

In some cases, the student may be identified as preliterate, and thus given the Student Oral Language Observation Matrix (SOLOM). This “informal, unstandardized rating tool” is used to determine the student’s comprehension, fluency, vocabulary, pronunciation, and grammar. Scores for this test range from 5 – 25 (ERIC, 1998). This test is highly subject to the test administrator, thus student scores are possibly incomparable.

The Programs

According to the district’s 1998 Program Manual, there are four elementary and four secondary English language programs for LEP students. While there is some degree of progression through these programs, students do not necessarily transition from one program to the next. Their program assignment is determined by availability of programs and teachers, individual academic strength, and English proficiency at initial enrollment as well as previous program assignment. A brief description of the programs currently offered by the District follows.

Full Bilingual- The full bilingual is a beginning level program designed for students in grades Pre-K through 3. The students are generally new arrivals and are monolingual Spanish speakers. Instruction moves from predominantly Spanish language instruction in the early grades, to predominantly English by the end of the third grade. Art, music, and physical education classes are take with students in the regular program. Currently, 21

elementary schools offer the Full Bilingual Program. Students exit the program at the end of the third grade, when they transition into an ESL-Only program. Students in the Full Bilingual program do not take the third grade TAAS, therefore are not eligible for reclassification to non-LEP. They must wait until they are tested in the fourth grade.

Modified Bilingual - This program is designed to accommodate Pre-K – 3rd grade students who predominantly speak English, but speak Spanish as well. The students are instructed almost exclusively in English, but using ESL techniques. They are also provided with one hour per day of Spanish language enrichment instruction. Modified Bilingual students are assigned to separate classrooms or clustered in regular program classrooms. The goal of this program is to achieve Full English Proficiency. Students do take the third grade TAAS, and are therefore eligible for reclassification at the end of that year. To exit the program, students must pass the reading and writing portions of the TAAS test. In addition, the student must achieve a score of “competent writer” on the IPT-Writing test and either “fluency” or “mastery” on the IPT-Oral test.

Elementary Language Center – Designed for recent immigrants, this program includes students in grades three through five who are non-English speaking. These centers are only available in eight schools, but transportation is provided for students originally assigned to other campuses but who wish to participate in the program. The instruction for the centers utilizes ESL techniques, but is more sheltered than the Full Bilingual program. When possible, the students take art, music and physical education with English speakers. Students generally remain in the program for two to three years. Students exit the Language Center Program on the recommendation of the teacher and the Language Proficiency Assessment Committee (LPAC).

ESL-Only Program – this program serves limited English speakers in grades Pre-K through five who are generally more advanced in English than students in the other elementary programs. There are three instructional designs: Homeroom, Team Teaching, and ESL Pull-Out. In the Homeroom design, significant clusters of LEP students are assigned to a classroom where the teacher utilizes ESL techniques in all

subjects. In team Teaching, students are similarly assigned, but there is one regular teacher and one ESL teacher who collaborate on instruction. Students in the Pull-Out design are given separate ESL instruction that is comparable in time and content to the language arts instruction given to students in the Regular Program. To exit the program, students must pass the reading and writing portions of the TAAS test as well as achieve a score of “competent writer” on the IPT-Writing test and either “fluency” or “mastery” on the IPT-Oral test.

Language Center Programs - Language Center programs are beginning to intermediate ESL for grades six through twelve. They are designed for Non-English Speakers who are typically literate in their home language and have been in the U.S. for less than three years. There are 15 campuses that currently offer Language Center Programs. Beginners are generally enrolled in the “full program,” meaning they take 5 to 6 ESL classes. More advanced students are enrolled in a “partial program,” where they take only 1 or 2 ESL classes. Students are assigned to groups based on English proficiency, and take their core classes (ESL, math, social studies and science) with their group. Art, music, physical education and electives are taken with mainstream students. The LPAC determines whether the student will move to Transitional ESL or into the regular program.

Transitional ESL Programs - Transitional ESL is intended for more advanced immigrant students who have exited beginning-intermediate programs, as well as U.S. natives who speak English but have not reached academic standards. These programs are available at all Middle and High School campuses. Students attend Transitional ESL classes in addition to regular program classes. The program design of Transitional ESL depends on student needs and campus resources. Students in grades 6 through 10 may be placed in an all-LEP group for their ESL and Reading classes, or they may be clustered by grade level into mainstream classes. Since students can only replace two high school English course requirements with ESL classes, students who have not reached proficiency by their junior year must take Transitional ESL as well as regular English. To exit the program, students must pass the reading and writing portions of the TAAS and/or

Pass the Oral-IPT with a score of Fluency or Mastery.

International Newcomer Academy - The International Newcomer Academy is a special campus for recent immigrants in grades 6 through 12. The program runs year round, and supplements English language instruction with U.S. culture and native language (Spanish and Vietnamese) literacy classes. Students attend the INA for one year, then transfer to a Language Center Program in their home school. Only students living within five specified attendance zones are eligible to attend. Students must exit the academy after one year. Students who are in grades 6 through 8 and have been identified as being preliterate or undereducated may remain for two years.

Newcomer Career Academy - The Newcomer Career Academy is located on the district's Technical High School campus and is designed for immigrant students grades 9 through 12 with limited educational backgrounds. The NCA teaches English Language as well as native language literacy and occupational skills. Any 9th through 12th grade student in the district may attend NCA upon approval by the Student Placement Center. Students exit the program through graduation.

The term Regular Program refers to instruction that makes no special accommodation for language minority students. In the past this may have been referred to as the "mainstream" program. For the purposes of this study, Full Bilingual and Modified Bilingual are simply referred to as bilingual, and ESL-Only, and Transition ESL. Language Center Program refers to the secondary program only.

Data and Sample Selection

Having defined the program availability and assignment, the next step is to determine how well these programs work. More specifically, how do these programs compare with one another and with the Regular Program. This will be done by looking at students' performance on standardized tests. For this study, we will use results on the Texas Assessment of Academic Skills (TAAS). This test is a state wide, criterion-referenced test which is based on the state-mandated curriculum. The TAAS, which has been

administered since 1990, is used by the Texas Education Agency to measure student performance and to assess district accountability (TEA, 1996). It is therefore an appropriate measure for an assessment of the District's LEP programs.

Data for the analysis comes from two sources. The Texas Schools Microdata Panel (TSMP) has been assembled by John Kain (Kain 1998) over the past five years. TSMP includes up to eight years of panel data for more than two million students and more than 350,000 teachers, as well as extensive data for nearly 6,000 campuses and more than 1,000 districts for the same eight year period. Beginning with the 1989-90 school year, five cohorts of students are included. Following the convention that the 1989-90 school year is called 1990, the youngest of these cohorts were in pre-K and the oldest in the 3rd grade in 1990. The data base starts with 1990 because the Texas Education Agency (TEA) implemented its Public Education Information Management System (PEIMS) in that year. In all, the TSMP has more than 80,000,000 records, many with more than 100 variables.

TSMP also contains 21 years/grades of standardized test data for the Texas Assessment of Academic Skills (TAAS) tests administered by TEA during this period. This criterion referenced test is given to students in grades 3 through 8. An Exit Level TAAS test, first administered in grade 10, must be passed in order for students to graduate from high school. Appendix A is a brief description of the Texas Schools Project and the TSMP.

The District is working with the Green Center for the Study of Science and Society at the University of Texas at Dallas to assess the effects of recent changes to District bilingual and ESL programs. The District has collected and shared information for students who qualified to be tested for limited English proficiency (LEP) for the past 8 years. This data base includes oral English proficiency test date, test type and score, native language proficiency test type and score, program assignment/participation, home language, country of origin, and limited demographic information for each LEP student. The District data has been combined with data for the TSMP, to form an enhanced data base which is used for the analyses presented in this paper.

Table 1 presents the sample which is the result of merging of District data and the TSMP. Mirroring the structure of the TSMP, there are five grades in each school year, beginning with Pre-K through 3rd grade in 1989-90. The five cohorts, running diagonally from

Table 1: Students Attending District, 1990-1997
Program Assignment by Grade and Year

Year	Grade	Pre-K	K	1	2	3	4	5	6	7	8	9	10
1990	Bilingual	503	765	1,020	852	638							
	ESL	5	24	69	95	64							
	Reg. Classroom	0	0	0	0	0							
	Total LEP	508	789	1,089	947	702							
	Non-LEP	1,519	4,756	4,970	4,392	4,406							
	Total Students	2,027	5,545	6,059	5,339	5,108							
1991	Bilingual		113	784	891	686	555						
	ESL		2	27	37	45	28						
	Reg. Classroom		0	0	0	0	0						
	Total LEP		115	811	928	731	583						
	Non-LEP		5,744	5,257	4,781	4,485	4,422						
	Total Students		5,859	6,068	5,709	5,216	5,005						
1992	Bilingual			646	526	518	406	278					
	ESL			421	346	234	233	206					
	Reg. Classroom			73	63	91	77	56					
	Total LEP			1,140	935	843	716	540					
	Non-LEP			4,963	4,731	4,524	4,406	4,300					
	Total Students			6,103	5,666	5,367	5,122	4,840					
1993	Bilingual				630	554	446	377					
	ESL				438	282	295	246	481				
	Reg. Classroom				119	87	85	101	151				
	Total LEP				1,187	923	826	724	632				
	Non-LEP				4,491	4,407	4,280	4,314	4,269				
	Total Students				5,678	5,330	5,106	5,038	4,901				
1994	Bilingual					624	467	423	1	0			
	ESL					485	314	314	661	562			
	Reg. Classroom					0	0	0	0	0			
	Total LEP					1,109	781	737	662	562			
	Non-LEP					4,257	4,263	4,182	4,212	4,170			
	Total Students					5,366	5,044	4,919	4,874	4,732			
1995	Bilingual						687	491	3	1	0		
	ESL						423	306	780	665	595		
	Reg. Classroom						0	0	0	0	0		
	Total LEP						1,110	797	783	666	595		
	Non-LEP						3,917	4,001	3,955	4,034	3,909		
	Total Students						5,027	4,798	4,738	4,700	4,504		
1996	Bilingual							461	12	1	0	1	
	ESL							495	738	717	618	866	
	Reg. Classroom							0	0	0	0	0	
	Total LEP							956	750	718	618	867	
	Non-LEP							3,812	3,904	3,996	3,897	4,969	
	Total Students							4,768	4,654	4,714	4,515	5,836	
1997	Bilingual								11	3	2	0	0
	ESL								938	868	764	956	598
	Reg. Classroom								0	0	0	0	0
	Total LEP								949	871	766	956	598
	Non-LEP								3,689	3,826	3,819	4,849	3,668
	Total Students								4,638	4,697	4,585	5,805	4,266
Total	Bilingual	503	878	2,450	2,899	3,020	2,561	2,030	27	5	2	1	0
	ESL	5	26	517	916	1,110	1,293	1,567	3,598	2,812	1,977	1,822	598
	Reg. Classroom	0	0	73	182	178	162	157	151	0	0	0	0
	Total LEP	508	904	3,040	3,997	4,308	4,016	3,754	3,776	2,817	1,979	1,823	598
	Non-LEP	1,519	10,500	15,190	18,395	22,079	21,288	20,609	20,029	16,026	11,625	9,818	3,668
	Total Students	2,027	11,404	18,230	22,392	26,387	25,304	24,363	23,805	18,843	13,604	11,641	4,266

upper left to lower right, are in grades Pre-K through 6, K through 7, 1 through 8, 2 through 9, and 3 through 10. Looking at the chart vertically, there is only one year/grade of data for Pre-K and 10th grade, two years for K and 9th grade, three years for 1st and 8th grade, four years for 2nd and 9th grade, and five years for the 3rd, 4th, 5th and 6th grades.

The table shows the number of students in each grade/year who are identified as LEP, and whether the student was in a Bilingual, ESL, or Regular Classroom.¹ The proportion of LEP students in a single grade year ranges from 24.6% in Pre-K during 1990 to a low of 3.0% in Kindergarten during 1991². Considering grades 1 through 9 for the whole sample, the range is 9.9% to 18.3%. The percent LEP trends downward from 15.3% in 1st grade to 11.7% in 10th grade indicating that some students are reclassified as English proficient during the elementary grades. Looking at the center cohort (Cohort 3), the percent of LEP students also trends downward from 16.7% in 1st grade, 1990 to 12.8% in 8th grade, 1997. This may be due to both reclassification and students who drop out of the sample by moving to other Districts, out of state, or dropping out of school.

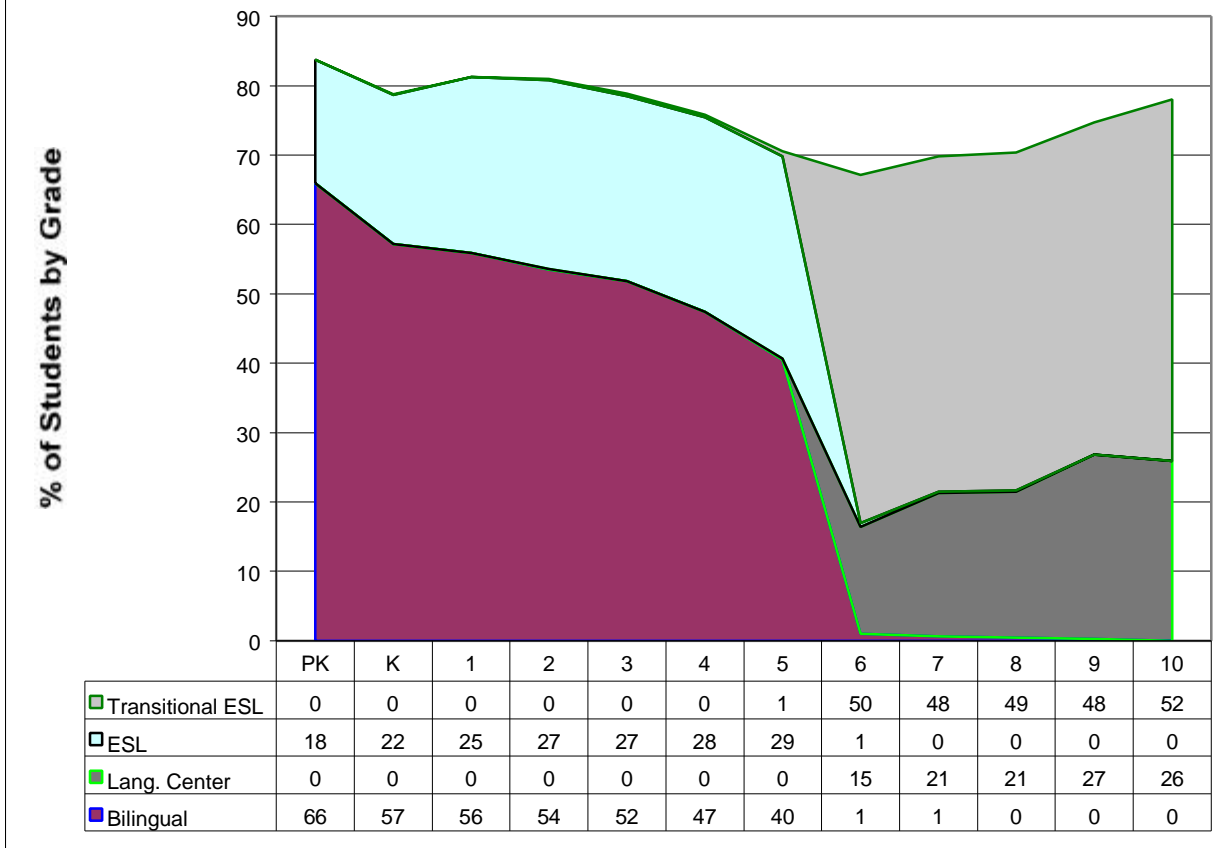
Program Assignment

As students progress from 1st through 10th grade, they are increasingly moved from bilingual to ESL programs. For the students in Cohort 3, 83% of the LEP students are assigned to bilingual programs in 1st grade. There is a steady switch to ESL instruction through the 5th grade. From the 6th through the 10th grade, all LEP students are classified as receiving instruction in ESL or in the Regular Program. There are similar rates of program assignment for students in each of the five Cohorts. Program assignment appears to be almost exclusively based on grade level.

¹ Table 1 and Figure 1 are based on information reported to the Texas Education Agency by the District and stored on the TEA Public Education Information Management System, PEIMS. More detailed program assignment will be presented later based on the District student information data base.

² Pre-K is a Title I program. As many LEP students are also economically disadvantaged, they tend to be over represented in these programs.

Figure 2: District Program Assignment by Grade



Information from the District student data base provides more detailed program assignment. Figure 1 shows student assignment by grade. For this analysis, the programs described earlier are grouped into five distinct categories during each year, Bilingual (includes full and modified), Language Center, ESL, Regular Classroom, and Transitional Bilingual. These designations help to explain the shift from Bilingual to ESL between the 5th and 6th grade. Students in both the Bilingual and ESL programs through grade 5 are assigned to transitional ESL programs in grade 6. LEP students entering the District in grade 6, and those who require more native language assistance than is available in the transitional ESL environment, are assigned to one of the 15 language centers.

Program assignment depends on several factors; the student's English language proficiency, native language proficiency, availability of a Bilingual program at the campus to which the student is assigned, parental permission denying involvement in a bilingual program, and student characteristics. In order to estimate the effect of each of these factors, a series of PROBIT models were estimated.³ In each case, the dependent variable is whether the student was assigned to Bilingual, ESL or Regular Classroom during the year. Table 2 displays the coefficients and asymptotic z scores for each variable included in these estimates for grades 1-3.

The English oral proficiency and native language oral proficiency of each LEP student are assessed by personnel at the placement center or, occasionally, by a classroom teacher. A grade of 0, indicating no proficiency through 6, indicating mastery of the language, is assigned. The tests described earlier, LAS and one of three versions of the IPT, are used. The native language proficiency test may be seen as an indicator of the student's pre-school preparation to learn. The estimates indicate that English and native language proficiency play a major role in program assignment.

Students with greater English language proficiency and lower native language skills are more likely to be assigned to a Regular Classroom. Five of the six coefficients are statistically significant. The sign of the English proficiency variable is positive and that of the Native Language variable negative for each of the grades.

All six of the oral proficiency test score coefficients are statistically significant for estimates of assignment to Bilingual programs. For each grade the signs for both tests are consistent. Higher English proficient students are less likely to be assigned to a Bilingual program. Students with higher Native Language scores are less likely to be assigned to a Bilingual program.

³ We also estimated multinomial logit models for program assignment. These reflected similar relative risks of program assignment and levels of significance as the probabilities in the PROBIT models. The estimates are available from the authors.

Table 2: Probit Estimates of Program Assignment
Grades 1-3

<u>Grade 1</u>	Bilingual		ESL		Regular Program	
	coef.	z score	coef.	z score	coef.	z score
English Proficiency	-0.19	-8.6	-0.04	-1.5	0.29	11.7
Native Language	0.07	4.0	0.00	0.1	-0.09	-3.9
# of LEP Students	1.28	18.2	-1.24	-17.7	-0.20	-2.6
Parental Permission	-0.86	-4.2			1.69	8.5
Gender	-0.03	-0.5	0.02	0.3	0.04	0.5
Age	-0.06	-1.2	0.11	1.9	-0.07	-1.2
Free/Reduced Lunch	0.35	1.1	-0.02	-0.1	-0.24	-0.8
Special Education	-0.27	-3.3	0.14	1.7	-0.10	-1.1
Constant	-0.41	-0.8	-0.68	-1.3	-0.39	-0.7
N	2,016		1,967		2,016	
Pseudo R ²	0.19		0.16		0.14	
<u>Grade 2</u>						
English Proficiency	-0.20	-10.1	-0.04	-1.9	0.33	14.9
Native Language	0.08	4.8	-0.06	-3.4	-0.01	-0.6
# of LEP Students	1.30	21.2	-1.22	-20.4	-0.25	-3.7
Parental Permission	-1.13	-7.6	-1.51	-6.4	1.92	14.0
Gender	0.05	1.0	-0.02	-0.3	-0.04	-0.6
Age	0.04	0.9	0.07	1.5	-0.17	-3.2
Free/Reduced Lunch	0.15	0.5	0.09	0.3	-0.14	-0.5
Special Education	-0.29	-4.1	0.04	0.5	0.01	0.2
Constant	-1.09	-2.3	-0.25	-0.5	0.04	0.1
N	2,770		2,770		2,770	
Pseudo R ²	0.20		0.16		0.21	
<u>Grade 3</u>						
English Proficiency	-0.18	-10.0	-0.07	-3.6	0.31	16.0
Native Language	0.08	5.3	-0.03	-1.9	-0.06	-3.3
# of LEP Students	1.36	25.3	-1.17	-22.4	-0.39	-6.7
Parental Permission	-1.75	-9.6	-0.94	-4.8	1.91	13.6
Gender	0.07	1.4	-0.02	-0.4	-0.05	-0.9
Age	0.05	1.3	0.00	0.1	-0.08	-1.7
Free/Reduced Lunch	-0.12	-0.5	0.12	0.5	0.02	0.1
Special Education	-0.19	-2.9	0.04	0.5	-0.16	-2.1
Constant	-1.09	-2.6	0.15	0.3	-0.42	-0.9
N	3,414		3,414		3,414	
Pseudo R ²	0.22		0.15		0.18	

For ESL programs, the results are less clear. The English Proficiency coefficient is consistently negative, but statistically significant at the .05 level for only the 3rd grade, and at the .10 level for the 2nd grade, weak evidence that English proficiency effects assignment to ESL programs. The Native Language coefficient is negative in 2nd and 3rd grades, statistically significant at the .05 level in 2nd grade and at the .10 level in 3rd grade, but insignificant for the 1st grade. Assignment to ESL programs is less dependent on test scores, although lower English proficiency and native language proficiency appear to matter more in the higher grades.

Assignment to a Bilingual program may depend on the availability of the program at the student's neighborhood school or the ability to transport the student to a school where the program is available. The number of LEP students at the campus in the student's grade is used as an indicator of whether Bilingual instruction is offered at the student's assigned campus and grade.⁴ This variable is statistically significant for assignment to each program in each grade. Students are much more likely to be assigned to a Bilingual program if it is available, are much less likely to be assigned to ESL, and are less likely to be assigned to a Regular Classroom.

Texas law requires that parents of LEP children are given the opportunity to refuse to allow their children to participate in Bilingual programs. Parental Permission takes on a value of one if parents refuse such participation and zero otherwise. With the exception of ESL program assignment for 1st grade students, where no parents refused participation, the coefficients are significant, and signs consistent for each grade. Parental Permission has a negative impact on both Bilingual and ESL program assignment and a positive impact on Regular Classroom assignment.

⁴ According to District administrative guidelines, Bilingual programs are offered if there are more than 100 LEP students attending a school, while ESL classrooms are provided if there are more than 50 LEP students. A number of proxies were used to measure program availability including the number of Bilingual students and the number of Bilingual teachers at the campus and grade. Each produces similar results to those for the proxy used in the regressions.

Four variables represent the student's individual characteristics; age during the school year, gender, whether the student is eligible for free or reduced rate lunch, and whether the student requires special education resources. Of the 36 coefficients estimated for the four variables, three grades and three programs assignments, only four special education coefficients and one age coefficient are statistically significant. The impact of special education is negative for all three grades for assignment to Bilingual programs, and in 3rd grade for assignment to Regular classroom instruction. Although Special Education is not significant for assignment to ESL programs, it is interesting to note its positive sign. Combined with the negative and statistically significant values for Bilingual program assignment, this indicates that special education students are more likely to be assigned to ESL than Bilingual programs. Age has a negative effect on assignment to Regular Classroom. Only in the 2nd grade is this coefficient statistically significant.

In summary, these estimates indicate that program assignment is influenced by English proficiency, Native Language proficiency, program availability, parental permission and by special education status. It appears that Bilingual programs receive students with higher native language proficiency and fewer special education students than do ESL programs or immersion in regular classrooms. Age, gender and economic status do not exert a consistent or large effect on program assignment.

Results of Program Participation

The legislated goal of Bilingual and ESL programs in Texas is to prepare students for learning English and participating in regular classroom instruction. There are, of course, many other goals attributed to these programs, including exposure to historical and cultural legacies and retention of fluency in the student's native language while acquiring English fluency. These and other objectives are difficult to measure. We can, however, measure success in English language proficiency and progress in cognitive skills by examining results on the state wide Texas Assessment of Academic Skills (TAAS) tests administered to students beginning in the 3rd grade.

For this analysis we examine how well students who participated in different combinations of programs in the first three grades perform on TAAS tests in grade 4 and in grade 5. Because TAAS is used as a measure of school success in the state wide accountability system, the Texas Education Agency allows school districts to exempt LEP students from taking the test for up to three consecutive years. Of the 1,637 students in the 4th grade regression, 1,131 (69.1%) had valid TAAS reading scores. For the 5th grade regressions, 1,346 of 1,595 (84.3%) had valid TAAS reading scores. This sample selection means that measures of program success based on regression analysis would be biased and inconsistent due to the exclusion of lower scoring students. We use a Heckman correction which first estimates a selection equation then adjusts the regression results to account for the impact of the missing test scores.⁵

Table 3: Effect of Program Assignment in Grades 1-3 on TAAS Score
With Heckman Correction

	4th Grade				5th Grade			
	No Early Tests		With Early Tests		No Early Tests		With Early Tests	
	coef	z score	coef	z score	coef	z score	coef	z score
Gender	-0.08	-2.4	-0.07	-2.0	-0.09	-3.4	-0.09	-3.1
Age	-0.05	-1.7	-0.03	-1.0	-0.06	-2.6	-0.05	-1.7
Free/Reduced Lunch	-0.28	-2.1	-0.40	-2.3	-0.23	-1.9	-0.30	-1.8
Special Education	-0.44	-6.6	-0.38	-5.2	-0.23	-4.5	-0.17	-2.9
EEE	0.15	3.4	0.11	2.2	0.13	3.7	0.12	2.9
RRR	0.24	4.3	0.25	3.8	0.26	5.3	0.24	4.3
BBE	0.22	3.5	0.25	3.6	0.13	2.4	0.16	2.8
EEB	0.05	0.5	0.12	1.1	0.01	0.2	0.06	0.6
BBR	0.22	2.4	0.20	2.0	0.29	3.3	0.35	3.6
EER	0.18	1.5	0.12	0.8	0.26	2.5	0.25	1.9
English Proficiency			0.00	0.1			0.00	0.3
Language Proficiency			0.03	2.6			0.02	2.1
Constant	1.01	3.0	0.79	2.1	1.20	4.0	1.02	3.0
N	1,637		1,508		1,595		1,412	
Chi-squared	194.3		211.3		238.5		225.6	

⁵ See, for example, the discussion of the selection problem in Greene (1997):978-982. The specific

The selection equations are shown in Appendix B, Table B-1. These included factors which may influence the decision to test individual students including campus/grade percent LEP, percent special education and percent assigned to Bilingual, ESL and Regular Classroom as well as an indicator of whether the student took the prior year's test.

Estimates of the impact of the most commonly assigned 1st through 3rd grade programs are shown in Table 3. Two sets of equations are estimated for each grade. The first includes four individual characteristics and seven program combinations. The second equation includes the initial assessments of students' English and native language proficiency.

Individual characteristics are gender, age, eligibility for free or reduced rate lunch, and classification as requiring special education resources. The signs of all of the coefficients are negative. Gender is significant in each equation; boys have lower reading skills than girls, holding the other variables constant. Age is significant in only the 5th grade, and becomes insignificant when the early test results are included. Economic disadvantage, measured by eligibility for free or reduced rate lunch, exerts a negative impact in 4th grade, but is insignificant for 5th grade. Special education has a large and significant negative impact in each equation.

Of the two test scores, native language proficiency exerts the only significant impact. Better preparation for school in the child's native language is associated with higher 4th and 5th grade test scores. Higher levels of English language proficiency before starting school has no impact on 4th or 5th grade reading success. The results, which confirms a similar finding by Kain and O'Brien (1998), may lend support to the facilitation theory that cognitive skills in any language are more important than English proficiency in determining future success in school.

implementation of the Heckman model used here is described in StataCorp (1997):187-195.

The impact of seven sequences of program assignment in grades 1-3 are considered. The programs are identified as B – Bilingual, E – ESL and R – Regular Classroom, in the left to right sequence of grades 1-3. The missing program against which program impacts are compared is Bilingual in each year (BBB).

The signs for all 24 program effects are positive, and 17 of the 24 program coefficients are statistically significant. The largest effects are for three years of Regular Classroom, and for two years of Bilingual instruction followed by a year of Regular Classroom. However, three years of Regular classroom and two years of Bilingual instruction followed by a year of ESL also have large advantages over three years of Bilingual instruction in each grade. All four of these effects are significant with and without controlling for early English proficiency and pre-school preparation.

These results must be interpreted with caution due to many potential omitted variables and lack of information concerning differences in instructional practices in different classrooms, campuses and by different teachers. There are also potential confounding effects of the interaction of student success and program assignment to be considered.⁶ The results do, however, lend support to the District's current efforts to transition all students from Bilingual to ESL or Regular Classrooms by the end of the 3rd Grade. These estimates indicate that this effort may yield higher reading skills and TAAS test scores for LEP students in the 4th and 5th grades.

Conclusion

This preliminary analysis of Bilingual programs demonstrates that programs for the education of Limited English Proficient students have become more widely available, diversified, and more complex over the last thirty years. Due to legislation and funding requirements, the goals of these programs are now more standardized and academic

⁶ There is also sample attrition. The regressions include only those students who were in Bilingual, ESL or Regular Classroom settings in the District during the first three years. Many 4th and 5th grade LEP students moved into the District during one of the early grades, other students who were in these programs during the first three years moved out of the District.

outcome based than the original programs. The emphasis on academic achievement as the goal of these programs has, in turn, required greater accountability by the District. The District has therefore developed a data base containing assignment and outcome measures and has formalized methods for assigning and assessing students in LEP programs. These changes allow more detailed assessments of program effects than have been possible in the past.

Our initial findings indicate that program assignment is strongly influenced by program availability, and parental choice. As we would expect, students with better English skills are more often assigned to ESL or Regular Classroom programs, while students who have better native language pre-reading skills are more likely to be assigned to Bilingual classrooms.

Assignment to Bilingual, ESL or Regular Classrooms during the first three years contributes to student performance on a standardized English language test in the 4th and 5th grades. The District's decision to move students out of Bilingual programs by the end of the 3rd grade is supported. While early English language skills do not appear to influence 4th and 5th grade reading success, having pre-reading skills in the student's native language does have an impact. This lends support to the theory that such skills as phonetic and alphabetic awareness as well as stronger vocabulary in any language are more important than English language proficiency for early reading success.

Planned enhancements to this research include obtaining student data for all District students. This will allow us to control for a number of potentially confounding factors such as such as teachers, peers, family, and neighborhood that should strengthen the assessment of program effects. This data will be augmented with information about what actually occurs in the classroom gathered through teacher and principal surveys and through classroom observation. The historical analysis will form a baseline for the assessment of changes in the District's Bilingual programs during the coming years.

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Attachment A

Description of the UTD Texas Schools Project

The UTD Texas Schools Project is a multiyear research project whose goals are to obtain a better understanding of the determinants of student performance with the long-term objective of providing a knowledge/research base to improve the performance of public schools.

John F. Kain, Cecil and Ida Green Chair for the Study of Science and Society at UTD, initiated the Harvard/UTD Texas Schools Project in 1992 when he was a Visiting Professor at UTD. Prior to accepting a permanent UTD appointment in spring 1997, Professor Kain was the Henry Lee Professor of Economics and Professor of Afro-American Studies at Harvard, where the project was previously housed. It is now housed at UTD's Cecil and Ida Green Center for the Study of Science and Society.

The project's primary focus to date has been the creation of the Texas Schools Microdata Panel (TSMP). This database already includes eight years of linked micro data for more than two million students attending Texas public schools. These data will be used for research on a large number of important questions that are either poorly understood or for which there has been, heretofore, little or no research or even systematic information.

TSMP currently includes individual student, teacher, district and campus data for the eight-year period 1990-1997.⁷ The student data include enrollment, attendance and standardized test records for more than two million students belonging to five cohorts. As Table 1 reveals, the members of the youngest cohort were in Pre-K during the 1989-90 school year while members of the oldest were in third grade in the same year. TSMP begins in the 1990-91 school year because TEA implemented its PEIMS (Public Education Information Management System) in that year. In each subsequent year, TEA has improved the quality and extent of these data. The letter and number designations in the columns labeled Test/Grade in Table 1 identify particular standardized tests by grade and type of test NAPT (Norm-referenced Assessment Program for Texas) and TAAS (Texas Assessment of Academic Skills). Thus, N-5 under Cohort 1 refers to the fifth grade NAPT, while T-7 under Cohort 1 refers to the eighth grade TAAS.

In addition to student data, TSMP includes individual data for all Texas public school teachers for the same eight-year period. Currently we are able to link these teacher data to individual students at the campus, grade and program (bilingual, ESL (English as a Second Language), special education, gifted and talented) level. In the future, we hope to obtain data that will permit us to link individual students to their specific teachers.

⁷ PEIMS is a yearly relational data base and TEA makes no effort to link these data across years. To construct TSMP, we had to combine annual PEIMS teacher and student data with TAAS, NAPT, and various teacher certification tests that are not part of PEIMS, and link these data across years. As Appendix Table A-1 reveals, to create TSMP we had to combine data from more than 140 individual student files and more than 110 individual teacher files, as well as campus level data from TEA's AEIS files, block group data from the 1990 Census and district level data from the School District Data Book CD ROMs. The number of individual records included in TSMP exceeds 102 million.

Table 1. Total Students and Standardized Tests Included in the Texas Schools Data Base by Cohort, Grade and Test

Year	Total Students (Enrollment)	Sem	Cohort 1		Cohort 2		Cohort 3		Cohort 4		Cohort 5	
			Gr	Test/Grade	Gr	Test/Grade	Gr	Test/Grade	Gr	Test/Grade	Gr	Test/Grade
89-90		F	3		2		1		K		PK	
89-90	1,161,358	S	3		2		1		K		PK	
90-91	1,505,551	F	4		3	T-3	2		1		K	
90-91	1,391,735	S	4		3		2		1		K	
91-92	1,420,295	F	5		4		3	T-3	2		1	
91-92		S	5	N-5	4	N-4	3	N-3	2		1	
92-93	1,415,593	F	6		5		4		3	T-3	2	
92-93		S	6	N-6	5	N-5	4	N-4 & T-4	3	N-3	2	
93-94	1,428,908	F	7		6		5		4		3	
93-94		S	7	T-7	6	T-6	5	T-5	4	T-4	3	T-3
94-95	1,438,632	F	8		7		6		5		4	
94-95		S	8	T-8	7	T-7	6	T-6	5	T-5	4	T-4
95-96	1,459,220	F	9		8		7		6		5	
95-96		S	9		8	T-8	7	T-7	6	T-6	5	T-5
96-97		F	10		9		8		7		6	
96-97		S	10	T-10	9		8	T-8	7	T-7	6	T-6

Even without this valuable extension, we are able to complete educational histories for individual students as long as they attend Texas public schools. Skillful use of these data should enable us to more accurately and effectively assess the performance of Texas schools than can be done with the fragmentary data that are currently available. These data should also allow us to develop a better understanding of the causes of low student performance. If the required funding can be obtained, we will continue to follow individual students belonging to the current five cohorts until they have completed high school or dropped out, as well as add additional cohorts. The availability of data for more recent cohorts will enable us to assess the effectiveness of various ongoing school reform efforts, such as TEA's accountability system and Governor Bush's reading initiative.

While the TEA data are of unprecedented quality and extent, important gaps remain. Therefore, as time and funding permit, we plan to add information obtained from individual school districts to TSMP. Among the highest priorities in terms of data base

enhancements are: earlier (first and second grade) tests for students already included in our data base, information that will enable us to link individual students to individual teachers, and additional family background variables. We have already held discussions with officials in 12 districts in the Dallas, Fort Worth and Corpus Christi PMSAs. Three of them have already provided us with supplementary data and three others have agreed to participate. We are continuing our discussions with the remaining nine districts and plan to meet with others as time allows.

We plan to use TSMP to examine a number of specific educational issues. As we add years and cohorts to the database and enrich it by adding district specific data, its analytical usefulness and power will greatly increase. We are already committed to completing research on three important areas, the impact of increased minority access to suburban schools on the performance of minority children, on special education and on bilingual education.

The Spencer Foundation, which has provided nearly \$400,000 of funding for this work, supported the collection of data for the first five cohorts and eight years of data, as well as the difficult and time consuming effort of creating TSMP from TEA's disparate and unlinked annual data. Spencer also funded the project's first substantive focus, an investigation of the impact of increased minority access to suburban schools on the academic performance of minority, and especially African-American, children.

In fall 1996 the Smith-Richardson Foundation provided an additional \$200,000 in funding for what we anticipate will be the first of several studies that will use data from the TSMP for research on a variety of educational policy issues. In this study, Eric A. Hanushek (Rochester University) and Stephen Rivkin (Amherst College) will join Professor Kain in an analysis of special education programs in Texas. Special education, which is the most rapidly growing segment of public education, has been subject to very little systematic research.

Other high-priority analyses include research on TEA's accountability system, on alternative instructional strategies for reading and their effects, on the determinants of teacher supply, on the impact of mobility on student performance, and on the extent of student turnover/flux in Texas schools and its effect on individual student achievement.

Support of Ph D Dissertations

Two UTD graduate students are currently completing Ph.D. dissertations as part of the Texas Schools Project. They are receiving financial support from the Green Center and their research combines TSMP data with supplementary data obtained from one or more school districts.

Daniel M. O'Brien is examining two areas. They are the effects of summer fallback on the achievement of low income and minority students and the effects of early tests on student achievement. Summer fallback refers to the summer achievement declines that appear to occur for low-income children during a period when middle and high income children continue to experience gains. O'Brien's research on the effects of early tests will be useful in assessing the biases that arise in the Harvard/UTD Texas

School Project from the fact that the earliest tests in the larger data base is given in the third grade.

Sharon Wrobel, who has just begun her thesis research, is studying bilingual education in one of the states largest districts and will help that district assess its efforts to strengthen its bilingual programs. Like O'Brien, Wrobel has been able to supplement TSMP data with data obtained from the district she is studying. These data include the scores obtained by Limited English Proficient (LEP) students on the English proficiency tests that are used in determining whether they should be assigned to bilingual, ESL or regular programs. A test of this kind is given to all LEP students attending public schools, but the scores are not supplied to TEA. Thus, they are not included in TSMP.

Publications and Working Papers

John F. Kain and Kraig Singleton. "Equality of Educational Opportunity Revisited." New England Economic Review. (May/June), 1996.

John F. Kain and Daniel M. O'Brien, "How Much Has Moving to the Suburbs Increased African American Educational Opportunities," Paper prepared for the meetings of the American Economics Association, Chicago, Illinois, January 5, 1998.

Steven G. Rivkin, Eric A. Hanushek and John F. Kain, "Teachers, Schools and Academic Achievement," Paper prepared for the meetings of the Econometric Society, Chicago, Illinois, January 4, 1998 (Revised July 1998).

John F. Kain, "Using TEA Annual Data to Develop a Multi-Year Panel Data Base: Lessons Learned and Suggested Additions and Improvements to TEA's Data Collection," Prepared for the 12th Annual Texas Assessment Conference, February 15-18, 1998. Renaissance Austin Hotel, Austin, TX.

John F. Kain and Daniel M. O'Brien, "Minority Suburbanization in Texas Metropolitan Areas and Its Implications for Educational Opportunity," Presented at Conference on Suburban Racial Change, Harvard University, March 28, 1998.

John F. Kain and Daniel M. O'Brien, "A Longitudinal Assessment of Reading Achievement: Evidence from the Harvard/UTD Texas Schools Project," Presented at the Green Center Conference, "Achieving Universal Literacy," The University of Texas at Dallas, April 2-4, 1998.

Eric A. Hanushek, John F. Kain and Steven G. Rivkin, "The Effects of Special Education Programs," Presented at the Green Center Conference, "Achieving Universal Literacy," The University of Texas at Dallas, April 2-4, 1998.

John F. Kain, "Ethnic and Racial Differences in Graduation, Dropout Rates and Course Completions for Students Attending Texas Public High Schools," Prepared for the Texas Commission on a Representative Student Body, June 4, 1998.

Daniel M. O'Brien, "Do Low Income Children Suffer Summer Fallback in Achievement," Presented at Institute for Research on Poverty Summer Workshop, "Problems of the Low-Income Population," June 15-18, 1998.

Eric A. Hanushek, John F. Kain and Steven G. Rivkin, "Does Special Education Raise Academic Achievement for Students with Disabilities," June 1998.

Eric A. Hanushek, John F. Kain and Steven G. Rivkin, "The Effects of Differences in Teacher Salaries," July 1998.

Table A-1. Data and Files Included in the Texas Schools Microdata Panel (TSMP)
(Data for the 1990-97 School Years, Eight Years of Data)

File Types	Years	Files	Total Records
Student			
PEIMS Demographic	5	5	7,948,609
PEIMS Enrollment	8	8	11,147,832
PEIMS Chapter I Enrollment	8	8	5,330,209
PEIMS Special Ed Enrollment	8	8	1,465,578
PEIMS Voced Enrollment	4	4	986,627
PEIMS Gifted Enrollment	6	6	392,462
PEIMS Summer Demographic	5	5	7,948,609
PEIMS Basic Attendance	4	24	33,017,628
PEIMS Special Ed Attendance	4	24	6,984,950
PEIMS Voced Attendance	4	24	986,627
TAAS	7	22	6,259,435
NAPT	2	7	1,683,009
TEAMS	1	1	286,982
Total Student Files/Records			84,438,557
Teacher			
PEIMS Staff	8	8	2,421,138
PEIMS Employment	8	8	2,421,138
PEIMS Payroll	8	8	4,013,119
PEIMS Class	8	8	7,788,629
PEIMS Nonclass	8	8	366,579
PEIMS Permit	8	8	82,021
TECAT	5	1	145,711
ExCET	5	64	292,696
TOPT	5	1	4,894
PPST	5	1	54,125
TASP	5	1	32,032
Total Teacher Files/Records		116	17,622,082

Table B-1: Effect of Program Assignment in Grades 1-3 on TAAS Score Selection Equations

	4th Grade				5th Grade			
	No Early Tests		With Early Tests		No Early Tests		With Early Tests	
	coef.	z score	coef.	z score	coef.	z score	coef.	z score
% LEP	-1.34	-1.7	-1.71	-2.2	-0.65	-1.2	-0.60	-1.0
% Special Education	-2.32	-2.7	-2.47	-2.7	-0.08	-0.1	0.00	0.0
% ESL	2.45	2.5	3.14	3.2	1.29	1.6	1.42	1.7
% Bilingual	0.59	0.7	1.21	1.4	0.75	1.2	0.82	1.2
% Regular Program	-2.55	-3.0	-2.26	-2.5	1.62	2.9	1.88	3.0
Took English Pre-test	0.98	11.5	1.00	11.0	0.71	8.1	0.80	9.1
Constant	0.28	1.5	0.11	0.5	0.41	2.6	0.20	1.1
N	1,637		1,508		1,595		1,412	
Chi-squared	194.3		211.3		238.5		225.6	