

# **A Texas Two-way Bilingual Program: Its Effects on Linguistic and Academic Achievement**

Iliana Alanís  
University of Texas at Brownsville

## **Abstract**

This study examines a variety of student outcomes in the area of linguistic and academic development and determines whether students enrolled in a two-way bilingual program for a minimum of three years are achieving academically. Participants were native Spanish-speaking and native English-speaking fifth-grade students of Mexican origin. The findings indicate that the majority of students who participated in the two-way bilingual program were performing at academic levels equal to or greater than their non-participant campus peers when tested on the Texas Assessment of Academic Skills (TAAS). In addition, participants were developing a high level of English literacy skills. Spanish literacy skills for the native English speakers, however, were not as highly developed. While there appeared to be promising bilingual development in the early years of the program, the rate of development seemed to be difficult to sustain in the upper grade levels.

## **Introduction**

Texas is second only to California in the number of school-age children who are culturally and linguistically diverse (Texas Education Agency, 1998). Over 500,000 students (13%) enrolled in Texas public schools in 1997–1998 were identified as limited English proficient (LEP) (TEA Snapshot, 1996). Of these English language learners (ELLs), more than 90% speak Spanish as their primary language and over 87% are economically disadvantaged (TEA, 1997). Like many states, Texas Education Agency (TEA) requirements (section 89.1201) stipulate that every student in the state who has a home language other than English and who is identified as LEP shall be provided a full opportunity to participate in a bilingual education or English as a second language (ESL) program (TEC Chapter 29, subchapter B).

Statewide, 49% of identified ELLs are in transitional bilingual education programs and 38% are in ESL programs. With respect to the ultimate goal for ELLs, the policy of transitional bilingual education, or ESL programs whose aims are English language proficiency and assimilation, is explicitly non-bilingual. These programs incorporate a minimalist form of bilingualism for the period of time that students are in them (Baker, 1996; Hakuta, 1986; Snow &

Hakuta, 1992). As a result, ELLs have traditionally been under-served. Thus, ELLs are more likely to fall behind academically and/or drop out of school than are their Anglo, Asian, and African American classmates (Arias, 1986; Valencia, 1991). For many ELLs, improving their access to quality bilingual education programs (Cummins, 1996; Ramirez, Pasta, Ramey, & Yuen, 1991; Thomas & Collier, 1997) can facilitate success in school. One way to address the needs of ELLs is through two-way bilingual programs.

Two-way, or dual language bilingual education, occurs when approximately equal numbers of language minority (e.g., Spanish speakers) and language majority students (e.g., English speakers) are in the same classroom. Two languages are used in the classroom for instruction and learning. Bilingualism is as much an aim as full bilingualism, with literacy being acquired in both languages either simultaneously or with an initial emphasis on native language literacy (Baker, 1996).

Two-way bilingual programs are an attempt to eliminate a minimalist form of bilingualism and promote academic achievement for Spanish-speaking and English-speaking students. The chance of students becoming bilingual is increased by the two-way bilingual approach. ELLs benefit from maintenance and development of their native language while acquiring English, and ELLs enjoy exposure to real speakers of the foreign language. Current evaluation and research studies (Christian, 1996a; Schaubert, 1995; Thomas & Collier, 1996) suggest that these programs can simultaneously meet the needs of language minority and language majority students. This is accomplished when members of each linguistic group serve as linguistic resources and peer models for each other.

Christian, Montone, Lindholm, and Carranza (1997) and Thomas and Collier (1996) have addressed questions of academic and linguistic achievement regarding students in urban areas of the nation. The present study, however, attempts to answer these questions concerning a geographical region of Texas that is situated along the Mexican border. Research is critical in this geographical border region of Texas because it has a high concentration of ELLs, segregated residential patterns, and campuses with high percentages of economically disadvantaged students (TEA Snapshot, 1996). Due to disparities in academic achievement among ethnic groups on state test results, it is necessary to see if students enrolled in such programs achieve academic gains. Work for this study encompassed questions related to program implementation, academic/cognitive development, language proficiency, and students' attitudes and perceptions. The results represented two types: (a) academic/cognitive and linguistic development and (b) students' attitudes and perceptions (Alanís, in press). This paper addresses the findings related to academic/cognitive and linguistic development. The research questions included the following:

1. What impact have the two-way bilingual programs had on the development of students' English and Spanish language proficiency?

2. What impact have the two-way bilingual programs had on students' academic/cognitive development as measured by the TAAS?

In an effort to address these questions by way of a literature review, I will first discuss issues of bilingual education in Texas, academic achievement testing results for ELLs in Texas, and the promising results of two-way bilingual programs. I will then describe a Spanish/English two-way bilingual program of two school sites located along the U.S.-Mexico border and present findings related to students' linguistic and academic achievement. I conclude with a discussion of limitations and implications of this study for educators interested in alternative ways to meet culturally and linguistically diverse students' needs in similar geographic situations.

## **Literature Review**

### **Bilingual Education in Texas**

To meet the needs of linguistically diverse students, Texas offers four types of programs at the elementary level: (a) English as a second language, (b) transitional bilingual education, (c) English immersion, and (d) two-way bilingual education. Differences among programs in bilingual/ESL education are defined by how much the primary language of the students is used for instruction.

#### *English as a second language*

In elementary ESL pullout programs, students are “pulled out” of some other class in order to attend English as a second language class. This type of program is commonly found in areas with students of a variety of language backgrounds and in areas where financial resources are limited (Roberts, 1995). Students in this model may receive as little as 20 minutes or as much as several hours of English a day. Students may learn basic communication skills in these pullout classes; however, they may not have enough time to build a foundation on which to expand their academic language skills (Cummins, 1984). Several studies have shown that it takes somewhere between four and seven years to develop full proficiency in a second language (Collier, 1989). Consequently, ELLs may still fall behind in content areas as they struggle to learn English. ESL instruction is assimilationist in its goals, and subtractive bilingualism is the typical outcome (Baker, 1996). Recent research by Thomas and Collier (1996) indicates that ESL pullout programs are the least effective of all bilingual programs for ELLs' long-term academic achievement.

#### *Transitional bilingual education*

Transitional bilingual programs were designed to shift the child from the home language to the dominant language. Transitional bilingual education aims only to promote students' proficiency in English. Social and cultural assimilation into the language majority is the underlying aim, and the outcome

is subtractive bilingualism (Baker, 1996; Cummins, 1996). Transitional bilingual education provides content area instruction in the native language while exposing the student to English. Initially, the learner is taught content classes in the native language, and classes such as physical education, music, and art are provided in English. The transitional model serves as a bridge for students. It is intended to move them from their native language to English in approximately three years, as regulated by state guidelines.

Students are mainstreamed into all English classrooms, in many cases at the end of first grade, until their English proficiency is sufficient enough to follow instruction. At this point, native language instruction is discontinued. Mainstreaming makes certain assumptions about the language minority child. First, the student is expected to have L2 skills sufficiently developed to participate effectively in a regular classroom. However, meaningful and full participation requires more than just L2 skills (Cummins, 1996).

Mainstreaming also assumes that bilingual students have had access to a similar knowledge base as students in the regular education program. This knowledge base includes academic knowledge in terms of subject matter, as well as social and cultural knowledge (Dejong, 1996). In addition, mainstreamed students are often required to make an important jump from their program to the regular program because of differences in instructional styles.

Unfortunately, in many transitional bilingual education classrooms students are not exposed to the same materials and content matters as students in the regular program. Bilingual students receive low status knowledge through translation and remediation. The instructional environment frequently does not facilitate or encourage active participation on the students' part. This less than stimulating environment causes many students to feel that their academic success is unlikely and, thus, academic effort is not worthwhile. Their identities disengage from the academic life of school (Cummins, 1996). Consequently, many ELLs mentally withdraw from academic effort or officially drop out.

The transitional approach continues to be the practice in many districts despite studies showing that five to seven years is a more realistic time frame for learners to reach levels comparable to their native English-speaking peers (Collier, 1989b; Cummins, 1996; Krashen, Dulay, & Burt, 1982). Hence, ESL pullout and transitional bilingual programs, which provide only a limited period of native language instruction, fail to develop the students' cognitive academic language. These programs do not ensure English mastery and may prevent ELLs from attaining academic fluency in either their native language or in English. The subsequent discrepancy between the learning opportunities of ELLs and their monolingual peers reinforces stereotypes and serves to socially legitimize their limited access to equal educational opportunities (Spener, 1988).

Thus, for a variety of sociopolitical, economic, as well as pedagogical reasons, many educators have supported short-term “quick fix” solutions that move English language learners into mainstream English-only classes as quickly as possible. Unfortunately, these programs (ESL/transitional) offer limited solutions to far broader issues. With few exceptions, these programs are designed to address key shortcomings or deficits in students in order to help them succeed in the school environment (Valdés, 1997).

### *English immersion education*

One such possible “quick fix” increasingly cited is monolingual English immersion education (Lindholm, 1990). The immersion model was originally developed in Canada and is used successfully with English speakers learning French, as well as with growing numbers of minority language children (Taylor, 1992). When immersion is used with majority English speakers learning French, it is generally pluralistic and promotes additive bilingualism. When minority language speakers are immersed in the majority language, however, the goal is assimilationist and results in subtractive bilingualism (Roberts, 1995). English immersion, English as a second language, and transitional bilingual programs produce the same monolingual result.

So strong is the pressure from the larger society toward linguistic assimilation by Spanish speakers that it is unlikely that monolingual Spanish-speaking children entering U.S. schools will leave school being bilingual. It is highly likely that they will enter school being primarily Spanish speaking, go through an ESL pullout, transitional bilingual program, or English immersion, and leave school being primarily English speaking, or semi-lingual at best (Hernández-Chávez, 1984; Wong Fillmore, 1992).

A characteristic of the above-mentioned bilingual programs is that they perceive language minority education as a temporary, programmatic solution. Each of these programs aims at fixing the language minority child’s “problem” as quickly as possible so that he or she can be incorporated into the mainstream without difficulty (Ruiz, 1988). The relationship between the programs, therefore, becomes unidirectional in terms of responsibility for change and adaptation and unequal in terms of status (Dejong, 1996). It is not surprising that academic advocates of bilingual education have consistently rejected immersion and transitional (compensatory) bilingual programs that have failed to meet the needs of ELLs. Instead, they have argued for enrichment (two-way) bilingual programs that promote biliteracy for all children, regardless of language background (Collier, 1989b; Cummins, 1996; Thomas & Collier, 1997). In this way, programs such as two-way bilingual education address the issues of subtractive bilingualism, assimilation, and the development of cognitive academic language.

### *Two-way bilingual education*

Research suggests that reinforcing children's conceptual base in their native language throughout elementary school and beyond will provide a foundation for long-term development in English academic skills (Thomas & Collier, 1996). This description is the basis for two-way bilingual education programs. Two-way bilingual education provides instruction in the primary language for ELLs. These students can therefore begin their academic work in a language they already speak and understand. They can have access to the curriculum and they can develop cognitive academic language proficiency (Cummins, 1981). This proficiency is believed to form the basis for the acquisition of higher order academic skills in a second language. The definition of two-way bilingual education encompasses four critical features:

1. The program essentially involves dual-language instruction where the non-English language is used for a significant portion of the students' instructional day;
2. The program involves periods of instruction during which only one language is used;
3. Both native and non-native English speakers are participants;
4. The students are integrated for most content instruction.

Most two-way bilingual programs try to achieve balanced numbers of language majority and ELLs in the classroom so that each group can serve as a linguistic resource and peer model for the other. Exposure to the second language is important because learners have to be able to hear the language being used in different contexts, figure out the meaning of utterances in certain social settings, and have extensive opportunities to use the language (Snow, 1990; Wong Fillmore, 1989). In addition, peer interactions can be more supportive of L2 learning than adult-child interactions (Dejong, 1996). The fact that classes are heterogeneous also addresses the concern that transitional bilingual programs may isolate ELLs from others in their school and community. Recent theoretical research regarding second language acquisition proposes that, through natural conversations, the learners receive the necessary input and structures that promote L2 acquisition. This finding suggests that in schooling situations, highly segregated Mexican American classrooms may significantly limit second language acquisition, while integrated classrooms will promote second language acquisition (García, 1991). In addition, two-way classrooms do not emphasize language development over academic and social development; the goal is balanced development in all three areas.

Two-way bilingual programs represent a pluralistic view of language and assume that bilingualism is cognitively, socially, and effectively beneficial for both students learning English and those who are English dominant (Roberts, 1995; Thomas & Collier, 1996). The ultimate goal is full literacy in both the first and second language. Therefore, the first language in two-way programs

is seen as a viable asset in overall cognitive and social development (Wong Fillmore & Valdez, 1986). The environment in two-way classrooms is by definition an additive one, in which both languages are highly valued and supported. These programs provide opportunities for English learners and English-dominant students to learn and grow together and thus allow for greater equity. Recent research indicates that interaction with native English speakers may provide better input and feedback for language learners than interaction with other L2 learners (Thomas & Collier, 1996). Ovando and Collier (1985) claim that two-way bilingual education may be the only way to reduce the language segregation in schools because minority children are no longer segregated from their English-speaking peers. In sum, it is the kind of access ELLs have to high-status knowledge and the quality of instructional interactions in these two-way programs that define educational quality and promote greater equity for all students.

### TAAS Testing in Texas

In Texas we continue to see disparities in TAAS performance among the major ethnic groups. The Texas Assessment of Academic Skills (TAAS) is a standardized statewide test that focuses on students' higher-order thinking and problem-solving skills. Each student in grades 3–8 and 10 is administered the TAAS reading and mathematics test and the writing tests at grades 4, 8, and 10. The 10th-grade TAAS is an exit-level test. Individual students are required to pass the exit-level TAAS in order to graduate from high schools. Results of the TAAS are used to measure individual achievement and the quality of schools and districts across the state. TAAS test reliability is based on internal consistency measures. Reliabilities range from .75 to .95. TAAS content and construct validity are intertwined, in that the construct tested is the mastery of academic content required by the state-mandated curriculum (TAAS Technical Digest, 1997b).

Table 1 shows a comparison of 1995, 1996, and 1997 percentage of Hispanic, White, and economically disadvantaged students passing TAAS, summed across grades 3–8 and 10.

The percentages indicate that Hispanic, economically disadvantaged students consistently fall behind their White counterparts in reading and mathematics. The trend, however, is that all students are showing gains across years. Students failing to pass the exit-level test at Grade 10 (they have eight opportunities) are not eligible to receive a Texas high school diploma. Valencia and Guadarrama (1996) comment that the TAAS is an example of "high-stakes testing." Students who fail TAAS can only receive a certificate of completion if they have met all other graduation requirements. Among sophomores taking the March 1996 TAAS exit-level test, almost 39% failed one or more of the subject areas (TEA Snapshot, 1996).

Table 1

*Percentage of Students Passing TAAS Grades 3–8 and 10, 1995–1998*

		Hispanic	White	Economically Disadvantaged
Reading	Spring 98	79.5%	94.2%	78.4%
	Spring 97	75.3%	92.4%	73.7%
	Spring 96	70.3%	90.0%	68.4%
	Spring 95	67.9%	88.4%	66.1%
Math	Spring 98	77.7%	91.9%	76.1%
	Spring 97	71.8%	89.5%	70.5%
	Spring 96	54.2%	79.8%	62.3%
	Spring 95	46.1%	74.8%	51.4%

Source: TEA Snapshot, 1998

ELLs have typically been exempt from statewide assessment because their participation in standardized testing tends to place them in a “Catch-22” situation (TEA, 1997a). Traditional assessments have not been appropriate because they do not isolate the measurement of academic content from that of language ability. Consequently, when ELLs are administered traditional assessments in English, it is not possible to know the extent to which these students’ performance may be influenced by a lack of concept understanding as opposed to a lack of academic language proficiency with the language in which the test is administered. Every test will inevitably measure both what the learner knows about the particular subject matter and the learner’s proficiency in the particular language.

To address this problem many districts have exempted ELLs from standardized testing until they are deemed proficient in English by the Language Proficiency Assessment Committee (LPAC) (TEA, 1997a). This committee, comprised of teachers, administrators, and parents, evaluates the child’s performance on the language assessment instrument and the child’s classroom performance before deciding if the child is ready for an English TAAS test. This alternative is being viewed with increasing dissatisfaction for two reasons. First, students who have been exempted have not had the opportunity to practice their test-taking skills, and second, assessment results are used for school accountability purposes. In Texas, the TAAS test is used to determine whether ELLs will eventually gain access to the same educational opportunities that native English speakers have (Thomas & Collier, 1996).



Spanish versions of the TAAS reading, mathematics, and writing have been developed for grades 3–6 and are used in the state accountability system. All Spanish-speaking students receiving instruction in Spanish are required to take either the Spanish or English TAAS at the time of program exit. Students taking Spanish TAAS will also be administered a reading test in English that will identify their English reading proficiency level. Students who enter school by first or second grade will be required to take the English TAAS in the third grade (TEA, 1997a). Those entering school in the third grade or subsequent grades will be required to take English TAAS after one year (TEA, 1997a).

All achievement tests are designed to determine what students know and at what performance level. Presumably they reflect what is taught in schools. Gay (1997) states that “there would be no issue of ethnic inequality if schools taught equally relevant curricula equally well to all students. But they do not” (p. 215). As indicated in the earlier discussion on bilingual education, many students in ESL and transitional bilingual classrooms in Texas receive low status knowledge through remediation. They do not receive the high status knowledge that their English-dominant peers do. Yet, they are expected to meet the same expectations on state standardized tests.

### Emerging Results of Two-way Bilingual Programs

Current evaluation and research studies (Christian, 1996b; Schaubert, 1995; Thomas & Collier, 1996) suggest that education programs can be designed to simultaneously meet the needs of language minority and majority students by combining the best features of immersion programs with the best features of bilingual education (Lindholm, 1990). In a review of research findings, Collier (1992) examined the amount of first- and second-language support students received in relationship to their academic achievement. She found that the more linguistic support a student received, the more likely she is to have higher levels of academic achievement in the second language in each succeeding academic year. The bilingual student also shows higher levels of improvement from year to year than her monolingual peers. Studies of ELLs schooled in bilingual education programs for as long as possible (at least through grade 5 or 6) demonstrate that these students outperform their comparison group and begin to reduce the distance between their performance and norm-group performance (Thomas & Collier, 1996). As this gap narrows, it is evident that long-term enrichment bilingual programs that use current approaches to teaching, such as two-way bilingual education, will give ELLs the cognitive and academic development needed to be academically successful in English (Thomas & Collier, 1996).

Thomas and Collier’s (1996) research studied non-native, English-speaking students in five urban districts. They found that students who were in two-way bilingual programs (compared to other bilingual programs and ESL) achieved the greatest educational gains. Thomas and Collier (1996) indicate,

however, that examination of ELLs' achievement over a 1–4 year period is too short term and leads to an inaccurate perception of students' actual long-term performance. Significant differences appeared as students continued through sixth grade and in the mainstream at the secondary level. They have found that only quality long-term enrichment bilingual programs, such as the two-way, give ELLs the grade-level cognitive and academic development needed to be academically successful in English.

These studies indicate that two-way bilingual programs can be an effective model for teaching academic subjects, for teaching other languages to native English-speaking students, and for teaching English to students from other language backgrounds. However, Valdés (1997) cautions educators about the quality of primary language used with minority children. To accommodate for the needs of the mainstream children, the Spanish language may be modified somewhat to meet the needs of those children who are in the early stages of acquisition. The research has not indicated how using language in even a slightly distorted fashion influences the language development of children who are native English speakers of that language. It is the responsibility of bilingual educators to ensure that minority language children are being exposed to the highest quality of instruction possible in their native language.

In an effort to explore the effectiveness of two-way bilingual programs, I will next discuss the linguistic and academic performance of language minority and language majority students enrolled in a two-way bilingual program.

### **Research Design**

The focus of this study is a two-way bilingual program located in two public elementary schools in west Texas. District demographics indicate that 57% of its families are classified as low income. Of that number, the percent of students receiving free or reduced lunch exceeds 90%. The district's enrollment reflects its border location with a Hispanic student population of 76%. These students are overwhelmingly of Mexican origin. School sites were chosen based on the following criteria:

1. Reported operating a 50/50 two-way program model for at least five years;
2. Reported languages used in the program as Spanish and English;
3. Shared similar program goals (e.g., Students will attain high levels of academic achievement and acquire English and Spanish oral proficiency);
4. Reported the program was fully implemented (fifth year).

### **Participants**

The selected sample consisted of 85 fifth-grade students in three fifth-grade classrooms who participated in the two-way bilingual program. Native Spanish-speaking students were assigned to the bilingual program on the

basis of their oral language proficiency test, and native English-speaking students were volunteers (principal, personal communication, 1997, April 28). Of these students, 94% were Hispanic, 4% were White, and 1% were Asian; 48% were male, 52% were female. Based on the IDEA Proficiency Test (IPT) scores, 79% of these students entered the program with a native language of Spanish, and 21% entered with a native language of English. Of the selected sample, 80% were from low-income families.

## Procedures

To address the central questions of achievement set forth in this paper, four sources of data were used: (a) site visits and non-participant observations; (b) taped and transcribed key personnel interviews; (c) data from the school administered English and Spanish IDEA Proficiency Test (IPT); and (d) data from the third, fourth, and fifth-grade English Texas Assessment of Academic Skills in reading and mathematics. (The TAAS tests used in this research study were administered in May of 1996, 1997, and 1998.)

The cohort of students, who started the two-way bilingual program in Kindergarten and stayed in the program through the fifth grade, originally included 60 children. Due to the mobility rates of these children, only 29 of the original 60 were still enrolled in the program when this study was conducted. Because two-way bilingual programs are developmental in nature, only scores for those students who had participated in the program for a minimum of three years (1996–1998) were analyzed, thus increasing the sample to 56. Although the sample size is relatively small, certain trends can be described and evaluated.

## Findings

### Linguistic Proficiency

In an effort to identify the impact these programs have had on the development of students' language proficiency in English and Spanish, scores from the school-administered IPT (1994–1997) were compiled. Due to the length of time required to achieve cognitive academic language proficiency (Cummins, 1988; Ramirez et al., 1991; Thomas & Collier, 1996), only scores for students who had been in the program for the full five years were evaluated. Due to attrition and mobility, the result was a very small sample size of 15 English speakers and 17 Spanish speakers. A database was created to compile frequencies and cross tabulations. The score levels on the IPT are A-F. "A" reflects the lowest level of oral proficiency and F (or M for mastery) the highest.

IPT scores indicated that students in the two-way bilingual program were at various levels of native language proficiency when they entered the program. When students were tested in the first grade (1994), few were rated fluent in their L1. Six of the 15 English speakers scored at an IPT level of F or M, and

one out of 19 Spanish-speaking students scored an M. Second-language proficiency also varied considerably. Of the English-dominant students, eight were non-proficient in Spanish and five were at the limited proficient level. Two of the English speakers were proficient in Spanish when they entered the program. Of the Spanish-speaking students, two were non-proficient in English and 13 were limited English proficient. Two of the Spanish-speaking students were proficient in English when they entered the program in 1994.

Analyses of IPT data indicate that few English-speaking students were achieving Spanish proficiency after five years in the program. ELLs, however, were rated near proficient in their second language by fourth grade. Among native Spanish speakers, 85% were English proficient at the end of fourth grade. However, only 53% of the English speakers were Spanish proficient at the end of fourth grade. Native English-speaking students were also limited in their Spanish grammatical constructions and vocabulary. This may indicate that the two-way program was not effectively addressing the development of both languages. Although the teachers facilitated Spanish oral proficiency, the focus appeared to be on English academic development.

### Academic Achievement

In May 1998 all fifth graders were administered the TAAS reading and mathematics test in English or Spanish based on linguistic proficiency. Of the students in the two-way program, 11 at Carmen Elementary and 18 at Salinas Elementary took the Spanish version of the TAAS. Spanish TAAS scores were not included in the analyses due to the small numbers and due to the lack of comparative data from 1996 and 1997.

A non-program comparison group of students ( $N = 80$ ) was used to evaluate the academic progress of two-way students in the areas of reading and mathematics. The students selected at each site were similar in SES levels and ethnicity to the subject population and drawn from classrooms at each site. The comparison group at Carmen Elementary consisted of 47 monolingual English speakers in a regular fifth-grade classroom. "Regular" indicates all English instruction. In the comparison group at Salinas Elementary, 29 students (82%) were native English speakers of Mexican origin in a regular fifth-grade classroom. The remaining four students (12%) in the comparison group were native Spanish speakers in a fifth-grade transitional bilingual classroom.

The means and standard deviations for the TAAS scores in reading and math (1996–1998) were the main descriptive statistics used to indicate the average score and variability of scores for the sample. Independent *t*-tests were used to determine how two-way bilingual students' scores compared to scores of other fifth-grade students on the two campuses. This statistical procedure was also used to compare means for the native Spanish-speaking and the native English-speaking students. To determine if students enrolled in the two-way bilingual program were meeting minimum state expectation

standards, standard scores on the English TAAS reading and mathematics were examined for third, fourth, and fifth grade. According to state accountability guidelines, minimum expectations are equivalent to approximately 70% of the items being correct on each subject area test.

*Reading achievement*

Table 2 presents the means and standard deviations for all fifth graders at Carmen Elementary on the reading portion of the TAAS for 1996, 1997, and 1998, based on program participation and native language.

Means indicate that the two-way participants (English and Spanish dominant) scored slightly higher than the non-participants for all three years. The two-way students who were English dominant scored slightly higher than the Spanish-dominant students (79, 76; 86, 84; 93, 89). Means also indicate that the student reading scores continued to rise with every additional year in the program. Differences between and within groups, however, were not statistically significant at the minimum level of .05. Table 3 provides the means and standard deviations for students at Salinas Elementary.

Calculated *t*-tests indicated that there was no statistical significance at the minimum level of significance of  $p = .05$  for the differences between and within mean scores for the non-program participants and the two-way bilingual program participants on the reading TLI scores for 1996 or 1998. However, the mean

Table 2

*Fifth-Grade Texas Learning Index (TLI): English Reading Mean Scores for Carmen Elementary*

<b>Program</b>		<b>TLI 1996</b>	<b>TLI 1997</b>	<b>TLI 1998</b>
Non Two-way	<u>M</u>	75	82	86
	<u>N</u>	48	39	47
	<u>SD</u>	24	21	14
Two-way English Dominant	<u>M</u>	79	86	93
	<u>N</u>	20	15	15
	<u>SD</u>	22	12	7
Spanish Dominant	<u>M</u>	76	84	89
	<u>N</u>	9	7	7
	<u>SD</u>	13	9	7

Note:  $p = .05$

Table 3

*Fifth-Grade Texas Learning Index (TLI): English Reading Mean Scores for Salinas Elementary*

Program		TLI 1996	TLI 1997	TLI 1998
Non Two-way	<u>M</u>	69	80*	85
	<u>N</u>	58	28	33
	<u>SD</u>	23	14	14
Two-way English Dominant	<u>M</u>	76	83*	85
	<u>N</u>	12	7	7
	<u>SD</u>	11	10	7
Spanish Dominant	<u>M</u>	69	72*	78
	<u>N</u>	18	22	27
	<u>SD</u>	18	16	22

Note: p = .05, \*p = .04

differences (80, 83, 72) in 1997 between and among non-program participants and two-way bilingual program participants were significant (p = .04).

Based on mean comparisons, the students in the two-way program who were native English speakers scored slightly higher than the students who were native Spanish speakers in all three years (third through fifth). The only significant difference was on the 1997 reading test, as mentioned earlier. English-dominant students also scored higher than non-participants in 1996 (76, 69) and 1997 (83, 80) but were at the same level in 1998 (85, 85). Calculated *t*-tests indicate that the differences between native English speakers and native Spanish speakers were not statistically significant at the minimum level of significance of p = .05. Non-participants scored higher than the two-way Spanish-dominant students did in 1997 (80, 72) and in 1998 (85, 78).

The Spanish-dominant and English-dominant students at both campuses demonstrated performance at or above the state passing level in achievement performance. The results indicate that the Spanish-dominant speakers have reached similar levels of achievement when compared with their campus peers. In addition, for the most part, each group had significant reading gains from third to fifth grade at the minimal level of statistical significance of p = .05. Gains were not significant for the Spanish speakers at Salinas Elementary in

reading ( $p = .04$ ). It is also interesting to note that native Spanish speakers' English skills have been well developed in a two-way bilingual program.

Analyses were also conducted to see if there were differential performances for two-way program participants from both linguistic backgrounds in each of the three years. For 1996 and 1998 there were no significant differences between the Spanish and English speakers at either campus. The only significant difference was on the reading TLI in 1997 for the students at Salinas Elementary.

### *Math achievement*

Texas Learning Index scores were also analyzed for the math section of the English TAAS (1996–1998). Table 4 provides the means and standard deviations for the students at Carmen Elementary based on program participation and native language.

Table 4

*Fifth-Grade Texas Learning Index (TLI): English Reading Mean Scores for Carmen Elementary*

Program		TLI 1996	TLI 1997	TLI 1998
Non Two-way	<u>M</u>	72	80	77
	<u>N</u>	48	39	47
	<u>SD</u>	24	18	17
Two-way English Dominant	<u>M</u>	72	84	77
	<u>N</u>	20	15	15
	<u>SD</u>	27	5	22
Spanish Dominant	<u>M</u>	74	83	83
	<u>N</u>	9	7	7
	<u>SD</u>	11	6	5

Note:  $p = .05$

Differences between and within groups were not statistically significant at the minimum statistical significance level of  $p = .05$ . However, the Spanish-dominant two-way students scored slightly higher than did the English-dominant two-way students in 1996 (74, 72) and 1998 (83, 77). Spanish two-way students also scored higher than the non-program participants in all three years.

Table 5 provides detailed information on the means and standard deviations for the Math TLI scores for the fifth-grade students at Salinas Elementary based on program participation and native language.

The English-dominant two-way participants' scores equaled or outscored the Spanish-dominant participants and the non-program participants for each of the three years. Non-program participants' scores were slightly higher than those of the Spanish-dominant two-way participants in 1997 (80, 78) and 1998 (84, 80). Differences between and within groups were not statistically significant at the minimum significance level of  $p = .05$ .

Table 5

*Fifth-Grade Texas Learning Index (TLI): English Math Mean Scores for Salinas Elementary*

Program		TLI 1996	TLI 1997	TLI 1998
Non Two-way	<u>M</u>	70	80	84
	<u>N</u>	58	28	33
	<u>SD</u>	20	13	10
Two-way English Dominant	<u>M</u>	73	81	85
	<u>N</u>	11	7	7
	<u>SD</u>	11	8	6
Spanish Dominant	<u>M</u>	70	78	80
	<u>N</u>	15	22	27
	<u>SD</u>	19	11	9

Note:  $p = .05$

The two-way Spanish- and English-dominant students at both campuses demonstrated performance at or above the state passing level of 70 in achievement performance. The results indicate that the Spanish-dominant speakers have reached similar levels of achievement when compared to their campus peers. Results also indicate that two-way English-dominant students are not falling behind their mainstream peers in a program that utilizes Spanish 50% of the time for instruction. For the most part, each group had significant math gains from third to fifth grade at the minimum statistically significant level of  $p = .05$ . Gains were not significant, however, for the English speakers in the two-way bilingual program at Carmen Elementary. On each measure there were no significant differences between the mean scores of the Spanish- and English-dominant speakers at either campus.



### *Length of time in program effects*

The length of time in a two-way bilingual program is positively correlated with student academic achievement. Thomas and Collier (1996) have found the most powerful predictor for ELLs' achievement to be the amount of formal schooling in L1. Significant differences in program effects become cumulatively larger as students continue past the third grade when the curriculum becomes cognitively more complex. Therefore, student scores on the TLI for 1998 were analyzed to determine if length of time in the program would have a significant effect on student scores.

Based on the TLI scores, students who had participated in the two-way bilingual program for at least three years had the highest means when tested in reading and math in the spring of 1998. Students who had participated in the program for two years or less had the lowest mean scores. For example, students who entered the two-way program in the fall of 1997 had TLI mean scores of 64.5 (reading) and 60.3 (math) as compared to students who entered the two-way program in the fall of 1994 with mean scores of 85.2 (reading) and 83.7 (math). Differences between the two groups were statistically significant at the minimum level of statistical significance of  $p = .05$ .

Data analyses indicate that of the two-way participants who took the English TAAS ( $N = 56$ ), 85% were meeting or exceeding state expectations on the reading TAAS and 87% on the math TAAS. The other 15% and 13%, respectively, were scoring below 70 and, thus, were not meeting expectations. For students who did not participate in the program ( $N = 80$ ), 92% met or exceeded state expectations on the reading TAAS and 90% on the math TAAS. Likewise, the remaining 10% did not meet state expectations. Overall, students in the two-way program at Carmen and Salinas Elementary were meeting state expectations and achieving academically, as measured by the English TAAS.

## **Discussion**

### **Language Development**

It appears that the two-way program was not developing bilingual proficiency for all of the two-way participants. Based on the evaluation of the language scores, most students appeared to be moving toward high levels of English proficiency, including oral language and literacy, as well as the ability to use English to demonstrate mastery of subject matter. However, not all students were developing high proficiency in Spanish. In fact, several of the native Spanish-speaking students stayed at the same level of proficiency for the entire five years. While there appeared to be promising bilingual development in the early years of the program, the rate of development seemed to be difficult to sustain in the upper grade levels. Children's apparent preference for English can be attributed to many factors inside and outside of the classroom. Factors

such as the features of program implementation, student characteristics, and school/community context may all play a role in language development.

### Program Features

There are important issues to be dealt with in the implementation of a two-way model. In addition to successful implementation, the goals of the two-way bilingual program affect the student outcomes. Although the sites reported operating a 50/50 model of two-way bilingual education, it was clear from the classroom observations and interviews that the original 50/50 split was not implemented. Based on observations and student interviews, it became apparent that teachers in the fifth-grade classrooms utilized more English than Spanish and lacked Spanish resources in all content areas. In this case, the lack of equality in the time provided for the two languages may have affected the development of Spanish. In addition, the original goal of the program was only Spanish oral proficiency as opposed to equal levels of bilingualism and biliteracy. Goals of the program influence outcomes. The absence of clear biliteracy/bilingual goals at the instructional level leads students to subvert their choice of language. In addition, students take their lead regarding language choice from the teacher and the materials used in the classroom. In a two-way bilingual program, teachers and administrators must address linguistic development equally if we are to assure students' linguistic and academic success in the second language (Thomas & Collier, 1996).

### Students

When interviewed, most of the students who participated in the two-way program used English as the language of choice. Students' background characteristics, such as sociocultural background, home communities, and existing levels of proficiency in both L1 and L2, may have an effect on language development. For example, most ELLs have some English proficiency when they enter school. However, most English speakers are monolingual when they begin schooling. If most students can speak English when they enter the program, it may explain the greater use of that language (Christian, 1996b). In addition, the societal factors play an influential role in determining what language students will choose.

### School and Community

Although the programs under observation were situated in a border region of Texas, most students had a strong preference for English. Minority language students tended to participate in this shift, even at the expense of their native language. It may be that students felt that Spanish carried less "cultural capital" despite strong expressions of support for bilingualism. There were several routine school practices that conveyed the message that English was the language of power (e.g., the Pledge of Allegiance, "Star Spangled Banner,"

and morning announcements were all in English). In addition, the community used English as the language of commerce on the U.S. side of the border. Pressure from the dominant society to use English is strong even in language minority communities. So strong is the pressure from the media, community, and schools that even ELLs who participate in two-way bilingual programs may leave school with a preference for English.

Moreover, teachers stressed the English TAAS for their students. Although ELLs were allowed to take the Spanish TAAS, the English TAAS was signaled as more important for state accountability purposes. When interviewed, fifth-grade teachers exhibited pride when saying their native Spanish speakers would be taking the English TAAS, and with good reason. English tests are the ultimate measure of attainment for eventual competition with native English speakers. These tests help parents and school administrators determine whether their children will eventually gain access to the same educational opportunities of native English speakers (Thomas & Collier, 1996). The same was not true, however, for native English speakers. They did not have the opportunity to take the Spanish TAAS. Based on classroom observations and teacher interviews, it was apparent that teachers were less concerned with the Spanish literacy of their native English students.

It appears that even in a border area Spanish-dominant students are drawn to English and are less likely to improve their Spanish skills beyond the oral proficiency that is useful outside the school. The preservation and development of skills in a language other than English in the school setting require focused attention. The degree of difficulty of bilingual language development depends on a complex array of sociocultural and individual factors. Administrators and teachers may need to reinforce the learning and use of the target language more forcefully and effectively.

Although the two-way bilingual programs studied were not effective at developing bilingualism and biliteracy, they were effective at increasing students' TAAS scores. Student academic development on the English reading and mathematics sections of the TAAS will be discussed in the next section.

## Academic Development

To effectively address the question of academic development, it would have been necessary to assess students' academic development in both their L1 and L2. The two-way participants did not have the opportunity to test in both English and Spanish. English TAAS results indicate that students in the two-way program have progressed in academic areas as well as or better than other students at their grade level based on state accountability standards. It appears that the two-way program's use of Spanish did not retard the development of the English speaker's academic achievement. Similarly, Spanish-dominant students benefited in general academic achievement by first developing their native language skills. Also, Spanish-dominant students have reached

academic levels similar to those of their English-speaking peers. Furthermore, both English- and Spanish-dominant students exhibited significant gains from the third to fifth grade in reading and mathematics. These gains may be because students have had opportunities to practice their test taking skills. English-dominant students in the two-way program, however, outscored the Spanish-dominant students on most of the TAAS measures. This may be attributed to many factors. First, not all teachers were committed to developing Spanish literacy. Second, English-speaking students were volunteers in the program. Their parents may have a stronger involvement in their child's academic development. On the other hand, Spanish-speaking parents may not understand the school system, may feel intimidated by the institutional structure of the school, and/or feel awkward about approaching school personnel to actively participate in school activities (Chavkin, 1989; Delgado-Gaitan, 1990). The lack of knowledge about the school system itself may affect parental support for academics and thus affect student academic development.

The differences between TAAS scores for the English- and Spanish-dominant two-way students may also be attributed to the fact that the ELLs are competing with moving targets when they take reading and math tests in English. The average score on these tests is defined by the native English speaker who makes "one-year's progress in one year's time" and thus sets the standard for progress for the English language learner (Thomas & Collier, 1996, p. 47). The fact that the Spanish-dominant students are doing almost as well as the English-dominant students is a significant accomplishment.

### **Limitations with the Study**

This study of a two-way bilingual program has several limitations. First, it does not account for all student background variables (e.g., home intellectual climate and motivation) that are likely to have an influence on student achievement given the varied student population, community, and school settings. A second limitation is that, because some ELLs migrate and immigrate at surprisingly high rates of mobility, it makes it difficult to follow the same students across a long period of time. As such, transiency disallows a solid longitudinal view of the program's apparent effects on students. Third, there was no comparable comparison group for the English language learners at either site. Fourth, the focus was on only three classrooms in one school district. Although the results cannot be generalized, the findings obtained from this study can serve as a basis for further investigation.

### **Conclusion**

Given the growing number of ELLs in Texas classrooms and the disparities in TAAS scores, two-way bilingual education appears to be an exciting and effective approach to creating challenging educational opportunities for these

students. Moreover, two-way programs allow for natural and extensive exposure to the dominant language, while at the same time giving the minority language a high status in the school and community. The results from this study indicate that in terms of linguistic and academic development, high levels of dual language proficiency and academic/cognitive development should only be expected when conditions are optimal for this to occur.

Two-way programs that fail to promote literacy skills in L1 through original program goals or fail to equalize the use of both Spanish and English for instruction will experience fewer positive linguistic outcomes. Parents and program administrators need to decide how important high target language development goals are prior to implementation. As is evident in the two-way programs studied, the shift toward English in elementary school is rapid and profound, even in a border area. In order to maintain and develop the target language, greater attention and action is needed from teachers and administrators. Finally, two-way bilingual education is no panacea for the academic achievement of ELLs. Their applicability is limited, as they require, among other things, a stable pupil population, strong teacher and administrator commitment, strong parental involvement, and a second language that is valued by the community. Nonetheless, if we are to improve the disparity in overall achievement between ELLs and their English-dominant peers, ELLs must be provided with access to the high-status knowledge and quality instructional interactions found in two-way bilingual programs.

## References

- Alanís, I. (in press). Students' attitudes and perceptions in a two-way bilingual program. *Texas Association of Bilingual Education Journal*.
- Arias, B. M. (1986). The context of education for Hispanic students: An overview. *American Journal of Education*, 95, 26–57.
- Baker, C. (1996). *Foundations of bilingual education and bilingualism*. Philadelphia: Multilingual Matters Ltd.
- Christian, D. (1992). *Two-way bilingual programs in the United States, 1991–1992*. Washington, DC: Center for Applied Linguistics.
- Christian, D. (1996a). Two-way immersion education: Students learning through two languages. *The Modern Language Journal*, 80(1), 66–76.
- Christian, D. (1996b). Language development in two-way immersion: Trends and prospects. In J. E. Alatis, C. Straehle, M. Ronkin, & B. Gallenberger (Eds.), *Linguistics, language acquisition, and language variation: Current trends and future prospects*. Georgetown University Round Table on Languages and Linguistics.

- Christian, D., Montone, C., Lindholm, K., & Carranza, I. (1997). *Profiles in two-way immersion education*. Washington, DC: Center for Applied Linguistics.
- Chavkin, N. F. (1989, summer). Debunking the myth about minority parents. *Educational Horizons*, 67(4), 119–123.
- Collier, V. P. (1989). How long? A synthesis of research on academic achievement in a second language. *TESOL Quarterly*, 23, 509–531.
- Collier, V. P. (1992). A synthesis of studies examining long-term language minority student data on academic achievement. *Bilingual Research Journal*, 16(1–2), 187–212.
- Cummins, J. (1981). *The role of primary language development in promoting educational success for language minority students: A theoretical framework*. Los Angeles: California State University: Evaluation, Dissemination and Assessment Center, 3–29.
- Cummins, J. (1984). Wanted: A theoretical framework for relating language proficiency to academic achievement among bilingual students. In C. Rivera (Ed.), *Language proficiency and academic achievement*. Clevedon: Multilingual Matters.
- Cummins, J. (1988). From multicultural to anti-racist education: An analysis of programs and policies in Ontario. In T. Skutnabb-Kangas & J. Cummins (Eds.), *Minority education: From shame to struggle* (pp. 127–157). Philadelphia: Multilingual Matters LTD.
- Cummins, J. (1996). *Negotiating identities: Education for empowerment in a diverse society*. CAFE Ontario, CA.
- Dejong, E. (1996). Integrated education for language minority children. In C. Glenn (Ed.), *Educating immigrant children: Schools and language minorities in twelve nations*. New York: Garland Publishing.
- Delgado-Gaitan, C. (1990). *Literacy for empowerment: The role of parents in children's education*. New York: The Falmer Press.
- García, E. (1991). Bilingualism, second language acquisition, and the education of Chicano language minority students. In R. R. Valencia (Ed.), *Chicano school failure and success: Research and policy agendas for the 1990s*. New York: The Falmer Press.
- Gay, G. (1997). Educational equality for students of color. In J. Banks & C. A. Banks (Eds.), *Multicultural education: Issues and perspectives*. Boston: Allyn and Bacon.
- Hakuta, K. (1986). *Mirror of languages: The debate on bilingualism*. Basic Books.

- Hernández-Chávez, E. (1984). The inadequacy of English immersion education as an educational approach for language minority students in the United States. In *Studies on immersion education: A collection for United States education* (pp. 144–183). Sacramento, CA: California State Department of Education.
- Krashen, S., Dulay, H., & Burt, M. (1982). *Language two*. New York: Oxford University.
- Lindholm, K. (1990). Bilingual immersion education: Criteria for program development. In A. Padilla, H. Fairchild, & C. Valadez (Eds.), *Bilingual education: Issues and strategies*. Newbury Park, CA: Sage Publications.
- Ovando, C. J., & Collier, V. P. (1985). *Bilingual and ESL classrooms: Teaching in multicultural contexts*. New York: McGraw-Hill.
- Ramirez, J., Pasta, D., Ramey, D., & Yuen, S. (1991). *Final report: Longitudinal study of structured English immersion strategy, early-exit and late-exit bilingual education programs for language minority children. Vol. 1*. Prepared for U.S. Department of Education (Contract No. 300-87-0156). San Mateo, CA: Aguirre International.
- Roberts, C. A. (1995). Bilingual education program models: A framework for understanding. *Bilingual Research Journal*, 19 (3 & 4), 369–378.
- Ruiz, R. (1988). Bilingualism and bilingual education in the United States. In C. B. Paulston (Ed.), *International handbook of bilingualism and bilingual education*. Westport, CT: Greenwood Press.
- Schauber, H. (1995). The second language components in a two-way bilingual education program. *Bilingual Research Journal*, 19 (3–4), 483–496.
- Snow, C. (1990). Rationales for native language instruction: Evidence from research. In A. Padilla, H. Fairchild, & C. Valadez (Eds.), *Bilingual education: Issues and strategies*. Newbury Park, CA: Sage Publications.
- Snow, C., & Hakuta, K. (1992). The costs of monolingualism. In J. Crawford (Ed.), *Language loyalties: A source book on the official English controversy*. Chicago: University of Chicago Press.
- Southwest Educational Development Laboratory Multifunctional Resource Center. (1996). *Directory of Dual Language Programs in Texas*. Austin, TX: Author
- Spener, D. (1988). Transitional bilingual education and the socialization of immigrants. *Harvard Educational Review*, 58 (2), 133–153.
- Taylor, S. (1992). Victor: A case study of a Cantonese child in early French immersion. *Canadian Modern Language Review*, 48 (4), 736–759.
- Texas Education Agency. (1996). *Snapshot '96: 1995–1996 School District Profiles* (RE7 602 2). Austin, TX: Author.

- Texas Education Agency (1997a). *Assessment system for limited English proficient students exempted from the Texas assessment program at grades 3–8*. A report to the 75<sup>th</sup> Texas legislature. Austin, TX: Author.
- Texas Education Agency. (1997b). *TAAS Technical Digest*, Austin, TX: Author.
- Texas Education Agency (1998). Academic achievement of elementary students with limited English proficiency in Texas public schools. *Policy Research* (10). Austin, TX: Author
- Thomas, W. P., & Collier, V. P. (1996). Language minority student achievement and program effectiveness. *NABE News*, 19 (6), 33–35.
- Thomas, W. P., & Collier, V. P. (1997). *School effectiveness for language minority students*. NCBE Resource Collection (9). Washington, DC: George Washington University, Center for the Study of Language and Education.
- Valdés, G. (1997). Dual-language immersion programs: A cautionary note concerning the education of language-minority students. *Harvard Educational Review*, 67 (3), 391–429.
- Valencia, R. R. (1991). *Chicano school failure and success: Research and policy agendas for the 1990s*. Great Britain: Burgess Science Press.
- Valencia, R. R., & Guadarrama, I. (1996). High-stakes testing and its impact on racial and ethnic minority students. In L. A. Suzuki, P. J. Meler, & J. G. Ponterotto (Eds.), *Multicultural assessment: Clinical, psychological, and educational applications*. San Francisco: Jossey-Bass.
- Wong Fillmore, L. (1989). Language learning in social context. The view from research in second language learning. In Dietrick & Graumann (Eds.), *Language processing in social context*. New York: Elsevier Science Publishers B. V.
- Wong Fillmore, L. (1992). Against our best interest: The attempt to sabotage bilingual education. In J. Crawford (Ed.), *Language loyalties: A source book on the official English controversy*. Chicago: University of Chicago Press.
- Wong Fillmore, L., & Valdez, C. (1986). Teaching bilingual learners. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching*. New York: Macmillan.