LANGUAGE TRANSFER: FIRST (L1) AND SECOND (L2) PROFICIENCY OF BILINGUAL ADOLESCENT STUDENTS

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This study was conducted in three middle schools located at a large urban school district in southeast Florida of the United States. The schools selected have programmes which are designed to draw students who require special instruction in English as a second language (ESL). A total of 89 ESL students in middle grades 6, 7, and 8 were tested with the Spanish and English versions of the Language Assessment Battery (LAB) test, Level III (6-8) to measure differences in the level of first and second language achievement. Thirty-three students had been receiving ESL instruction for one year, 25 students had been in the programme for two years, and the remaining 31 students had been ESL students for three or more years. Quantitative results indicated that the higher grade level students performed better than the lower grade students. Test results did not demonstrate a strong relationship between achievement in L1 and L2. The only skill which seemed to transfer readily was reading. Qualitative results revealed a slight trend toward increased English proficiency. Test results also indicated that Spanish language maintenance is occurring among subjects in this sample.

Hierdie studie is in drie middelskole in 'n stedelike gebied in suidoos Florida, VSA, onderneem. Dié skole bied programme aan vir studente wat spesiale instruksie in Engels Tweedetaal (ET2) benodig. Nege-en-tagtig ET2 studente in Graad 6, 7 en 8 is getoets met die gebruik van die Spaanse en Engelse weergawes van die "Language Assessment Battery"(LAB) toets vir dié vlakke om verskille in die vlak van eerste- en tweedetaalprestasie te meet. Drie-en-dertig van die studente het onderrig in ET2 vir een jaar ontvang, 25 het dit vir twee jaar ontvang en die orige 31 studente het ET2-onderrig vir drie of meer jaar ontvang. Kwantitatiewe data dui aan dat die hoër vlak studente beter as dié op laer vlak gevaar het. Die toetsuitslae het nie 'n sterk verhouding tussen T1 en T2 prestasie getoon nie. Die enigste vaardigheid wat gemaklik van T1 tot T2 oorgedra is, is lees. Kwalitatiewe data het 'n effense neiging tot verbeterde Engelse vaardigheid getoon. Die toetsuitslae het ook aangedui dat die handhawing van taalvaardigheid in Spaans (T1) onder hierdie groep studente wel plaasvind.

1. INTRODUCTION

Language transfer is the cross-linguistic influence two or more languages may have on each other. It is not simply language interference or reliance on native language abilities. It is also not just native language influence (Odlin, 1990). Transfer may occur in either direction, i.e. between the first (native language, L1) and second language (L2) or between the second and first language. It may be positive or negative. Positive transfer occurs when one of the languages has a facilitating effect on abilities in the other language, while negative transfer or interference occurs when one language does not facilitate, or even retards, exchange of information to the other language. Cummins (1979) popularized the notion of a strong positive transfer hypothesis or interdependence hypothesis, averring that

> when the usage of certain functions of language and the development of L1 [native language] vocabulary and concepts are strong, as is the case in most middle-class children in immersion programmes, then the intensive exposure to L2 is likely to result in high levels of L2 competence at no cost to L1 competence (p. 233)

Cummins's notion of a strong positive transfer hypothesis is reflected in his terminology of common underlying proficiencies (CUP) versus separate underlying proficiencies (SUP):

> A theoretical model of bilingual proficiency is proposed in which a 'common underlying' proficiency is hypothesized to underlie the surface manifestations of both L1 and L2 and make possible transfer of cognitive/academic skills across languages (Cummins, 1984: 6)

Cummins (1979) cites the example of middle class majority language children (Canadian English speaking students learning French) who have demonstrated an ability to extract meaning from printed text in English. He proposes that this ability can be transferred to French. For the English second language (ESL) student learning how to extract information efficiently from printed text is of crucial importance. Subsequent educational progress depends to a great extent upon how well this task is accomplished.

Cummins's positive transfer hypothesis predicts that older children who are more cognitively mature and whose native language proficiency is better developed will acquire second language proficiency more rapidly. His theory seems to suggest that older children's underlying proficiency in their first language assists with the process of second language acquisition. Therefore, for older students, skills and concepts acquired in the native language can be expected to transfer to English in an accelerated process (Hebert, 1976; Leslie, 1977; McLaughlin, 1985; Robson,1981; Skutnabb-Kangas & Toukomaa, 1976; Weinstein-Shr, 1984).

Recent investigations do not refute language transfer; however they tend to support a model where skills and information do not readily transfer, hence a weaker transference model (Carson, Carrell, Silberstein, Kroll & Kuehn, 1990; Hakuta, 1986; Major, 1992; Pica, 1994). It has been stated that only very gifted children are capable of becoming fluently bilingual. Hakuta (1986:

94-95) questions the dichotomy of interdependent (strong transference) or independent (little or no transference) language use: The real question is the identification of the conditions under which the two languages maintain separation and those under which they are apparently merged'. Carson *et al.* (1990) contend that the pattern and strength of language transfer vary according to the person's first language background, educational level, and personal background. It therefore appears that a number of non-linguistic factors may affect transfer skills. According to Pica (1994), a learner's native language influence on second language learning can be suppressed by a broad range of linguistic, psychosocial, and cultural factors.

2. LISTENING, READING AND WRITING RELATIONSHIPS

Generally speaking, professionals in various fields tend to think of language according to the domains of speaking, listening, reading, and writing. The question regarding which language subskills transfer more easily was investigated by Carson *et al.* (1990), who examined reading and writing relationships of adult English as a second language learners in acquiring literacy skills. Their results suggest that 'reading ability transfers more easily from L1 to L2 than does writing ability' (p. 245), and that 'interlingual transfer can occur, but that the pattern and strength of this transfer varies according to first language background and other aspects of educational background and experience' (p. 259).

Genessee (1979: 73) maintains that no evidence exists that 'introducing English reading earlier than grade two or three in immersion programmes has any long-term positive effects'. He also argues that reading skills may be transferred from one language to another if the students master reading in one language before beginning with the other. This notion was later studied by McLaughlin (1987) who found that advanced learners in an ESL programme did not perform significantly better in L2 reading than beginning students. His conclusion indicates that advanced L2 learners did not make the shift to decoding for meaning in the second language, whereas they had this capability in their first language. Thus, even established skills in the first language may not transfer. These considerations are important in providing direction for adapting instruction to accommodate the increasing number of bilingual children in the United States and in a growing number of countries as well. These considerations are important in providing direction for adapting instruction to accommodate the increasing number of bilingual children in the United States and in a growing number of countries as well.

3. HISPANIC STUDENTS IN THE UNITED STATES

The percentage of Hispanic individuals in the United States has significantly increased within the past decade. In 1989, there were 14.5 million Spanish speakers in the United States and Spanish was spoken by 58% of all speakers of languages other than English. Hence, Spanish is the second most widely spoken language in the United States. MacArthur (1993: iii) stated that 'between 1979 and 1989, the number of persons 5 years and older in the United States who were

reported to speak a language other than English at home increased by about 40 percent'. The number of Spanish speaking school children grew from 2.5 million to 3.6 million between 1979 and 1989. Of this population, MacArthur (1993) found that many, almost half, had difficulty speaking English.

When one considers the requirements for school success, i.e. seeking information, asking questions, explaining ideas and concepts, and following directions (Rosenblatt, 1982), then these Hispanic students risk school failure and may drop out. Other at-risk factors include low family incomes, and low parent educational attainment, according to MacArthur (1993). He also found that persons who spoke languages other than English were more than twice as likely to have dropped out of school prior to completing secondary school (middle school and high school in the United States) than English-only speakers. Spanish speaking persons aged 16 to 24 had higher drop out rates compared to monolingual English speakers, or speakers of other languages including European, Asian and Pacific Island languages.

MacArthur (1993) showed that among foreign born Spanish speakers, those who had immigrated after 1980 had higher drop out rates than those born in the United States. Thus, adolescent Hispanic students enrolled in school today face a higher than normal drop out rate when compared to nearly all peers.

4. ADOLESCENT STUDENTS

Classroom language demands increase when students enter the secondary school environment (Brice-Heath, 1986; Larson & McKinley, 1987; Simon, 1985). Language difficulties may arise even at transition points between primary and secondary school. The ability to use all aspects of language, i.e. reading, writing, listening and speaking, becomes increasingly complex for adolescent students. In the United States, students who do not speak English as their first language are often quickly enrolled full time into regular education classrooms after transitional ESL instruction (two to three years of special ESL classes). Teachers and administrators with regular education backgrounds may expect these transitional students from Spanish speaking backgrounds to perform well in all aspects of language (Collier, 1987; Cummins, 1984). Collier's study (1987) revealed that older immigrant students to the United States who arrived at the ages of 12 to 15 experienced the greatest difficulty with acquisition of L2 for academic purposes and were projected to require as much as six to eight years to achieve grade level norms (50th percentile) as measured on standardized tests, if they had a sufficient language base in L1. The current period of ESL instruction may not be sufficient for students to acquire all the necessary language skills. Thus, Hispanic adolescent students are particularly at-risk for school difficulty. They as a group have been under-represented in studies and deserve further consideration.

5. LANGUAGE PROGRAMMES IN THE UNITED STATES

Language programmes for bilingual students in the United States are different from the immersion programmes in Canada. Canadian programmes have implemented immersion programmes fostering additive bilingualism, where the first language (L1) is maintained at no expense to learning English (L2). However, language programmes in the United States have been transitional (i.e. students are quickly mainstreamed into regular English classrooms over a short period of time). The U.S. transitional programmes are typically not concerned with maintaining first language abilities (Fradd & Tikunoff, 1987). The entry assessment for most ESL programmes in the United States consists of staff judgement, an English oral proficiency test and English reading and/or writing tests.

The students used in this study had been enrolled in U.S. schools for from one to six years. All the students spoke Spanish as their first language. Entry criteria for this programme consisted of a district-made criterion referenced test (measuring English speaking, listening, reading and writing proficiencies), a standardized test, a home language survey, an ESL teacher interview, and a parent interview.

5. PURPOSE OF THIS STUDY

The purpose of this study was to examine the relationship of native (Spanish) language proficiency (L1) to English language proficiency (L2) by measuring student performance at the end of years one, two, and three plus. Account was taken of the number of years in an ESL programme and grade in school.

6. METHODS

The method used in this study consisted of a comparison of language transfer performance across three student groups using a standardized Spanish-English language test, i.e. the *Language Assessment Battery (LAB) English/Spanish Level III (6-8)* (Board of Education, City of New York, 1982). This test is widely used in the United States for placement decisions regarding bilingual Hispanic students. This study yielded information about how Hispanic bilingual students enrolled in ESL programmes for one, two, or three or more years differ in terms of their relative Spanish and English proficiency. Data was obtained in public schools in southeastern Florida of the United States.

7. PARTICIPANTS

Students who participated were enrolled in secondary grades, i.e. middle school grades six through eight. The 89 ESL students involved were categorised according to the number of years

they had been enrolled in the ESL programme, i.e. one (n = 33), two (n = 25) or three or more years (n = 31). The three schools were randomly selected from those schools with ESL programmes in the school district. They were from primarily Central American and South American Hispanic populations.

8. SETTING

The setting consisted of a large urban school district in Florida in the United States. The schools selected consisted of magnet schools with a large concentration of Hispanic ESL students.

9. INSTRUMENTATION

The *Language Assessment Battery (LAB) English/Spanish Level III (6-8)* was selected for this study because: (1) it is a reliable and valid standardized test battery of language proficiency and language dominance, (2) it is used widely in U.S. public schools to identify and place those students who are entitled to bilingual/ESL instructional programmes, and (3) it gives results in both English and Spanish, yielding total scores and subtest scores. The *LAB* is a group-administered instrument designed to measure communicative competence by assessing reading, writing, listening, and speaking competence in both Spanish and English. The speaking portion of this test was not administered to the test subjects since it was not possible to test students individually. Time constraints of the participating students and schools prohibited individual testing. The instrument yields raw scores, stanine scores and percentile ranks by grade. The English version was normed among a population of native English speakers and the Spanish sample among native Spanish speaking students.

The *LAB* consists of four subtests. Some items from each subtest will be given along with a description of the language domains that each portion covers. The *Listening* subtest consists of responses to questions or statements. It also contains responses to questions after listening to a paragraph. This portion contains responses that require knowledge, comprehension and application (Bloom, 1956) . For example, item number 20 is, "John broke my new radio." The correct response is, "Why did he break it ?". The *Reading* subtest consists of choosing the missing word in a sentence, i.e. a cloze procedure. The missing word occurs at the beginning, middle and end of sentences. Items consist of language parts such as nouns, verbs, adjectives, adverbs, direct objects, and indirect objects. An example is number six: 'Ice hockey is a game of skill and speed. It combines the pleasure and _____ of ice skating ...' (with the answer being 'skill'). The *Writing* subtest consists of cloze responses to sentences. This area covers parts of language such as question forms, adverbs, pronouns, comparatives, possessive pronouns, verb tenses, superlatives, demonstratives, negation, word order, similar meanings, and complete sentences. An example is number one with, '_____ is that man?' (Why, who, when, which).

10. DATA COLLECTION

All *LAB* subtests, with the exception of the *Speaking* subtest, were administered in both English and Spanish to 89 ESL students enrolled in middle school grades six through eight. Time of test administration between the two versions ranged from one to two weeks. The testing was done in a group setting by two test administrators who were competent bilingual Spanish-English speakers.

11. RESULTS

An Analysis of Covariance (ANCOVA) was utilized with years in school and grade as a co-variate. In order to control for potential bias, effects of the years in the ESL programme and grade variables, use of the ANCOVA was selected. Means and standard deviations for *LAB* English Total for years in the ESL programme by grade are reported in Table One. Means and standard deviations for *LAB* Spanish Total for years in the ESL programme by grade are reported in Table Two.

Table One. Means and Standard Deviations for *LAB* English Total

Grade	**Years in the ESL Program**		
	1 Mean (SD)	2 Mean (SD)	3 plus Mean (SD)
6	79.84 (17.68)	77.20 (28.12)	91.40 (11.44)
7	103.66 (6.80)	75.00 (17.64)	95.50 (9.02)
8	97.75 (9.70)	96.58 (12.01)	88.72 (15.86)

Table Two. Means and Standard Deviations for *LAB* Spanish Total

Grade	**Years in the ESL Program**		
	1 Mean (SD)	2 Mean (SD)	3 plus Mean (SD)
6	89.44 (18.41)	90.60 (9.71)	85.80 (16.73)
7	82.00 (20.95)	95.37 (15.07)	95.90 (14.33)
8	99.00 (19.93)	106.41 (6.27)	100.45 (12.85)

When the data were analyzed by years in the ESL programme with grade co-varied, then the *English Reading* subtest (p= 0.05) was significant between the Spanish and English means. All other comparisons proved non-significant (p > 0.05). The results are given in Table 3.

Table Three. Summary: Analysis of Covariance by Years in ESL programme (Year 1 = group 1, Year 2 = group 2, Years 3 plus = group 3)

LAB Test	SS	DF	MS	F	P value
English Reading	394.400	1	394.400	3.953	0.050
	8680.881	87	99.780		

All reported results significant at $p \leq 0.05$

When the data were analyzed by grade level with years in the ESL programme co-varied, then the following comparisons among group means proved significant: *LAB English Total* (p =0.019), *English Listening* (p= 0.013), *English Reading* (p= 0.031), *LAB Spanish Total* (p=0.001), *Spanish Listening* (p= 0.001), *Spanish Reading* (p= 0.002), and *Spanish Writing* (p= 0.006). The *English Writing* subtest was not significant (p > 0.05) and is not reported. The results ar given in Table Four.

Table Four. Summary: Analysis of Covariance by Grade in school
(Sixth grade = group 1, Seventh grade = group 2, Eighth grade = group 3)

LAB Test	SS	DF	MS	F	P value
English					
Total	1641.845	1	1641.845	5.752	0.019
	24835.44	87	285.461		
English					
Listening	179.053	1	179.053	6.386	0.013
	2439.419	87	28.039		
English					
Reading	476.876	1	476.876	4.825	0.031
	8598.405	87	98.832		
Spanish					
Total	3208.511	1	3208.511	13.971	0.001
	19979.894	87	229.654		
Spanish					
Listening	116.152	1	116.152	17.028	0.001
	593.443	87	6.821		
Spanish					
Reading	1194.159	1	1194.159	10.024	0.002
	10364.605	87	119.133		
Spanish					
Writing	127.910	1	127.910	8.067	0.006
	1379.529	87	15.857		

All reported results significant at $p \leq 0.05$

12. DESCRIPTIVE ANALYSIS

A visual inspection of the data indicates marked discrepancies between *English* and *Spanish LAB Percentile* scores for all three groups, i.e. years in the ESL programme being the independent variable. The following is noted: (1) only a slight increase toward English proficiency is observed, and (2) language maintenance seems to be occurring within this Spanish sample as revealed by the *LAB Spanish Percentile* test scores. These results are demonstrated in Figure One.

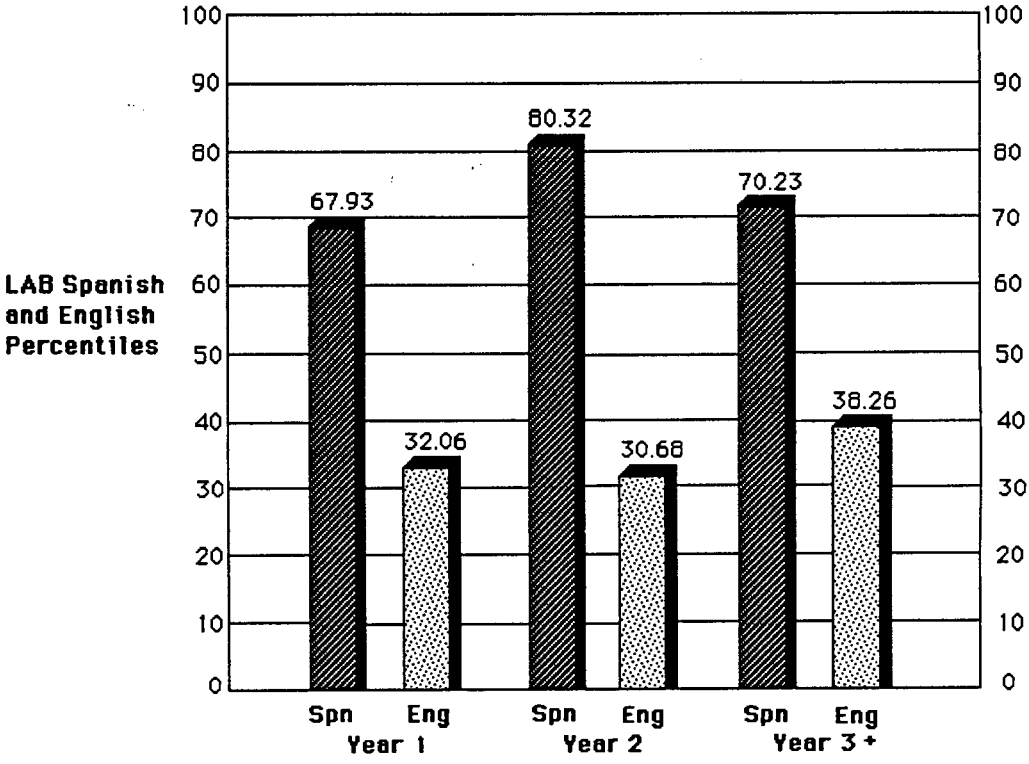

Figure One. LAB Spanish and English Percentiles According to years in ESL.

When the results are examined by years in the ESL programme and by grade for overall Spanish means, the following conclusions seem justified: (1) the means seem to cluster more closely according to grade level than by years in the ESL programme, (2) eighth graders seem to perform better in Spanish than sixth and seventh graders (this fact is supported by the ANCOVA grade comparisons), and (3) a maturation effect seems to be occurring as students become more academically adept.

The results, when examined by years for English means, yielded the following observations: (1) differing achievement levels in English for sixth and seventh graders were noted, with the eighth graders appearing more stable in their English performance, (2) English performance for all groups seemed less stable with years in ESL as a predictor. These results are illustrated separately by Spanish and English in Figures Two and Three.

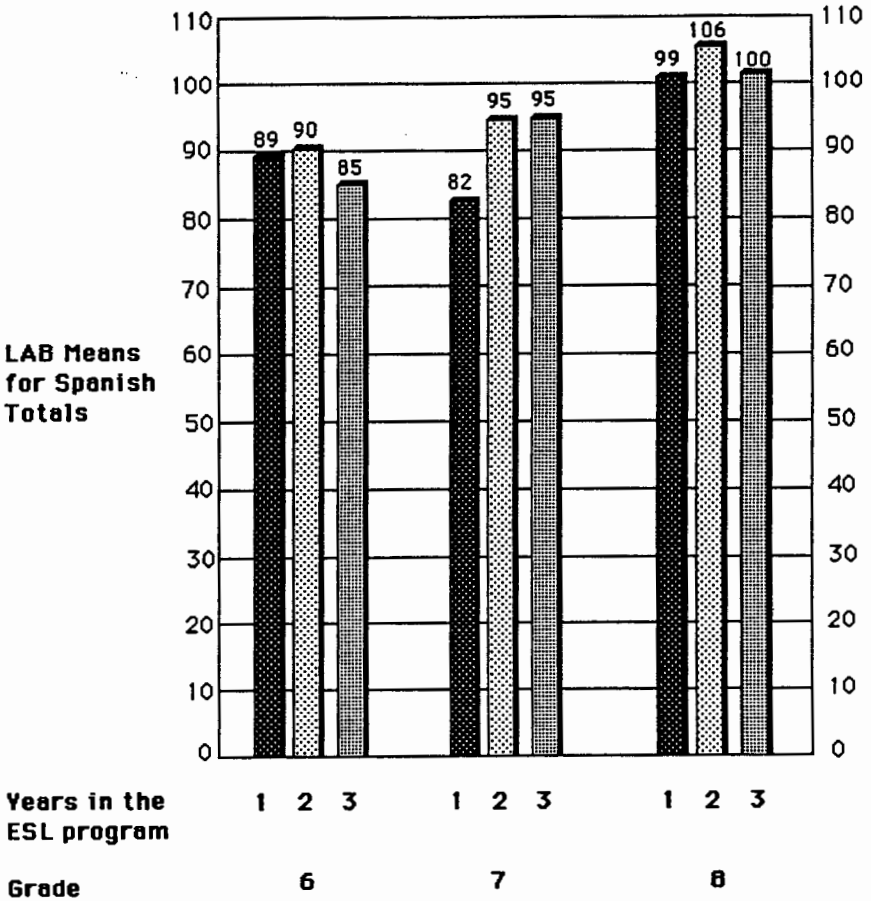

Figure Two. Spanish LAB Means According to Years in ESL.

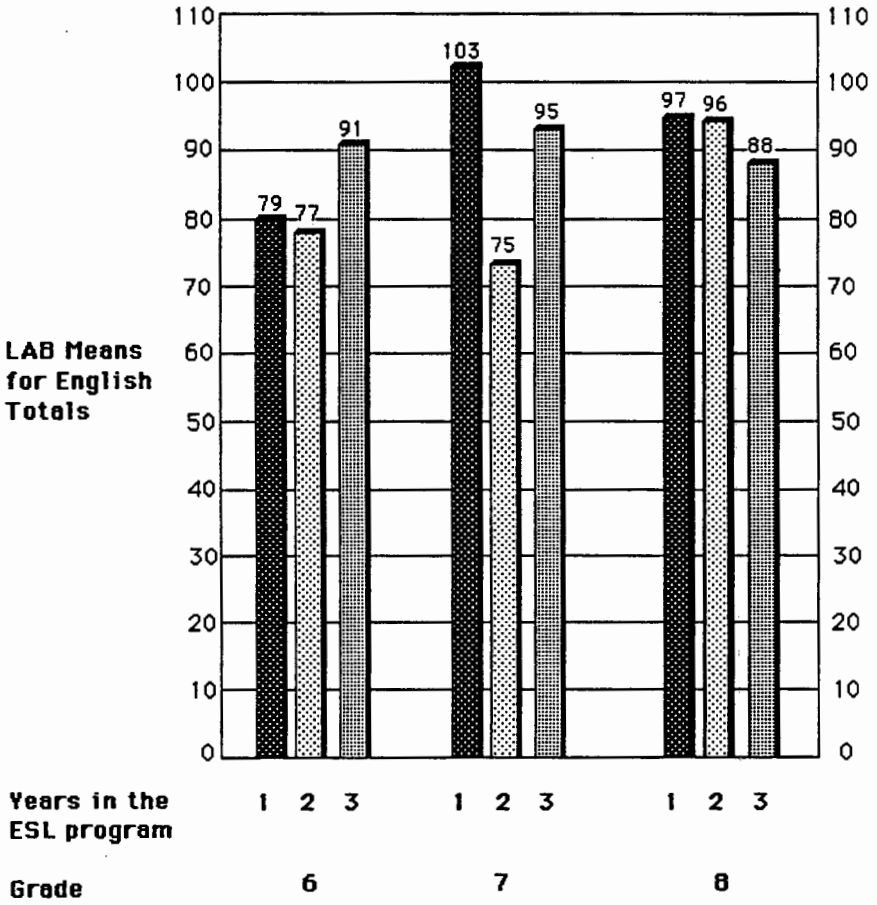

Figure Three. English LAB Means According to Years in ESL.

Analysis of the data according to *LAB* Spanish and English Percentiles indicates the following: (1) 52% of year one, 56% of year two and 42% of year three or more students scored 40% or higher on the Spanish *LAB* total, (2) 27% of year one, 36% of year two and 3% of year three or more students scored 40% or higher on the English *LAB* total, (3) 21% of year one, 8% of year two, and 55% of year three plus students scored less than 40% on the English *LAB* total (refer to

Table Five).

Table Five. *LAB* Results According to Total Percentiles for Spanish and English Totals.

Year	Spanish Dominant (Spanish *LAB* Score of 40% or more)	Ready to Exit (English *LAB* Score of 40% or more)	At Risk of Failure (English *LAB* Score less than 40%)
Year One	52%	27%	21%
Year Two	56%	36%	8%
Year Three Plus	42%	3%	55%

13. CONCLUSIONS

Quantitative analysis of the *LAB* results suggests the presence of a maturation effect. As students progress into the upper grades they are better equipped to handle the academic skills involving listening, reading, and writing. From this study it appears that reading is a skill that can be acquired in English L2 within approximately three academic years. Other language skills, such as listening and writing, may take more time to acquire in English. Educators cannot assume that with time their students will transfer these skills from Spanish to English. A conscious effort to address these language subskills must be undertaken.

Qualitative analysis of the *LAB* test results indicate that for year one approximately one half (16/33= 52%) of the students tested are Spanish dominant (Spanish *LAB* score of 40%). An English *LAB* score of 40% or higher indicates an ESL child may be ready for instruction in "school English". An English *LAB* score below 40% indicates an ESL student may have greater difficulty in the transition from one language to another. Nine students (27%) in year one had Spanish and English *LAB* scores of 40% or higher and may be ready to exit the ESL programme. Seven students (21%) may be academically at risk (both *LAB* Spanish and English scores were below 40%) and need further assistance such as content area instruction in the native language.

For year two, approximately one half (14/25=56%) of this student group were Spanish dominant. Nine students (36%) appeared ready to exit the programme. Two students (8%) may be academically at risk and should be considered for continued assistance and not be quickly exited or mainstreamed.

For year three, 13 students (less than half the students tested; 13/31= 42%) were Spanish dominant after three or more years of ESL instruction. One student (3%) was English dominant and ready to be mainstreamed. Seventeen students (55%) may be academically at risk after three or more years of ESL instruction and need further assistance such as content area instruction in the native language. Thus, not all students would benefit from a quick transitional programme. Different programme options should be available for these students.

14. WEAK INTERDEPENDENCE HYPOTHESIS

The interdependence hypothesis (Cummins, 1979) proposes that transfer of academic proficiency in the minority language (Spanish) to the majority language (English) will occur given adequate exposure and motivation to learn the majority language. According to this interdependence hypothesis, there is a cognitive/academic proficiency that is common to all languages and this common language proficiency allows for transfer of language related skills across languages. Therefore, developing language skills in L2 (English) may be affected by language capacities in L1 (Spanish). The results of this study do not support a "strong" language interdependence hypothesis as suggested in the literature, but rather a "weak" language transference between Spanish and English. The results also indicate that reading may be a skill that transfers more quickly as compared to listening and writing.

15. IMPLICATIONS

Listening, reading, and writing transfer of skills from Spanish to English is vital if Hispanic adolescent students are to remain in school.

This study supports previous findings by Carson et al. (1990). Reading ability seems to transfer more easily from L1 to L2 than does writing. Genessee (1979) maintains that reading skills from one language to another may be enhanced if the students master L1 reading skills first. However, mastering academic skills in the second language seems to take longer and take more effort than educators have previously thought. Collier (1987: 516) states:

> in secondary school, the level of cognitive complexity and sequential content knowledge needed for each subject is extremely dependent on prior knowledge. If academic work in the first language is not continued at home or school while secondary students are acquiring the second language, there may not be enough time to make up for the lost years of academic instruction

An implication for school professionals is that success in L2 may occur only if students are: 1) given time to develop adequate academic skills in the native language, and 2) given more time to develop these skills in English in the ESL programme.

School professionals with knowledge of language and of learning strategies, i.e. speech-language pathologists, English as a second language teachers, and language arts teachers can assist students through direct intervention or through consultation to provide an atmosphere conducive to Spanish language maintenance and English language learning. It is vital that these professionals take an active role in all Hispanic students' education. In sum, awareness of language issues and sensitivity to persons who differ in culture, language, or ability are critical in our culturally diverse education programmes.

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